

INSTITUTE OF POST HARVEST TECHNOLOGY

ANNUAL REPORT- 2014

Head office:
G-22 Ministry of Agriculture
“Govijana Mandiraya”,
No:80/5, Rajamalwattha lane
Battaramulla
Sri Lanka.

Research and Development Centre :
Jayanthi Mawatha.
Anuradhapura,
Sri Lanka

Message from the Chairman

At present, post-harvest is become one of the most important subjects in the field agriculture in Sri Lanka. Because, it has shown less development in comparison to pre-harvesting practices of agriculture. Pre harvesting practices are well developed due to long time research and development effort. It can be clear that Sri Lanka reported higher agricultural productivity in comparison with other Asian countries. However, if it has higher productivity / yield, it will be wasted during the post harvest operations. It was estimated that post harvest loss of fruits and vegetables were 20-40% and it was 10-15% grains and pulses. Therefore, recently government give priority to minimize the post harvest losses of agricultural crops.

The Institute of Post Harvest Technology (IPHT) was established in year 2000 by the aim of minimizing post harvest loss and improving the quality of agricultural produce. IPHT was conducted tremendous number of research projects, training and development programmes for developing post harvest field in the country for past 10 years. Therefore, at present it has been created high demand for activities conducted in IPHT. In future it will be planed to expand the service of IPHT for better future in agricultural food production in Sri Lanka and the benefit will flow to the general public of this country which is the ultimate objective of IPHT.



Jagath Palitha Jayawarne
Chairman - IPHT

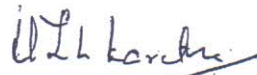
Message from the Director

The Institute of Post Harvest Technology (IPHT) has a major role to play in minimizing the loss of durable and perishable produce, in maintaining the quality and nutritional components and value addition of these agricultural commodities. The IPHT during the past few years has been reorienting its research programmes to reducing the current high loss of perishable commodities to more acceptable level by introducing rigid packages for transportation, after conducting several loss assessment surveys.

The research activities under taken by the institute are geared towards solving problems of direct application to industry. Our officers have worked hard towards minimizing loss in perishable commodities by designing and developing suitable packaging systems for fresh commodities, developing technologies to extend the shelf life fruits and tubers, control of postharvest diseases using GRAS chemicals. Moreover, several research programmes were conducted to improving and updating technologies used by rice and other grain industry and product development and waste utilization aspects.

This year IPHT widened its scope by conducting several development projects focusing effective technology disseminating, by which most of rural sector was benefitted to upgrade their income level by initiating self employments.

The IPHT needs to invest in human resource development and carry the critical mass of scientists and support staff required of an Institute of this nature, if it is to contribute effectively in the nations current and future development programmes. Given the necessary resources the IPHT will fulfill its role as a center for development adaptation and dissemination of post harvest technology for this country.



Dr.(Mrs)B.M.K.S.Thilakarathne
Director - IPHT

Institute of Post Harvest Technology
G-22, Ministry of Agriculture,
"Govijana Mandiraya",
No:80/5, Rajamalwattha lane,
Battaramulla.
31 - 10 -2015

Hon. Minister of Agriculture
Ministry of Agriculture,
"Govijana Mandiraya",
Battaramulla.

Hon. Minister,

ANNUAL REPORT – 2014

In terms of section 14(2) of the Finance Act No. 38 of 1971, I have the honour to submit to you the Annual Report and the Statement of Accounts of the Institute of Post Harvest Technology, for the year 2014.

Yours faithfully,

Prof.K.B.Palipane
Chairman
Institute of Post Harvest Technology

INSTITUTE OF POST HARVEST TECHNOLOGY

BOARD OF DIRECTORS

Name	Position	Attendance
Mr.Jagath Palitha Jayawarne	Chairman	10 days
Lawyer Gunarathne Gallage	Vice Chairman	10days
Dr.Nimal Disanayake	Director	08 days
Mr.Palitha Godagamage	Director	10 days
Mr.N.G.Sameera Hettiarachchi	Director	10days
Mr.M.A.Karunarathna	Director	10days
Mr.W.M.Sunil Shantha	Director	07days

The meeting were convened in the year on the following days

30/01/2014,25/02/2014,31/03/2014,29/04/2014,27/05/2014,18/07/2014,26/08/2014,

30/09/2014,28/10/2014,25/11/2014

AUDIT AND MANAGEMENT COMMITTEE

Name	Position	Attendance
Mr.M.A.Karunarathne	Member of the Board of Directors of the IPHT (Chairman,Audit and Management Committee)	
	Deputy Director, Management Service Department ,Treasury	04 days
Mr.Gunarathne Gallage	Vice Chairman,IPHT	04 days
Dr.Mrs.B.M.K.S. Thilakarathne	Director –IPHT	04 days
Mr.D.P.C.Swarnasiri	Additional Director(Research and technology Transfer)	02 days
Mr. R.K.A.P. Ramanayake	Additional Director (Admin. & Finance) IPHT	04 days
MR.I.M.N.P.Ilangasinghe	Accountant-IPHT	04 days
Mr. R.M.D. Rathnayake	Internal Auditor-IPHT	04 days
	Convenor, Audit and Management Committee	
J.A.S. Dhammika Perera	Observer,Audit and Management Committee	04 days
	Superintendent of Audit,Audit general's Department	
Mr.W.K.L.E.Wallavita	Chief Internal Auditor Ministry of Agriculture	04 days
	Observer management Committee Audit and Ma	

The meeting were convened in the year on the following days:

31/03/2014,27/08/2014,29/10/2014,17/12/2014

OUR VISION

To be the centre of excellence in Postharvest
Technology

OUR MISSION

To enhance productivity and facilitate competitiveness
of the agribusiness sector through Post Harvest
Research and Development.

INSTITUTE OF POST HARVEST TECHNOLOGY

ANNUAL REPORT - 2014

1. OVERVIEW

The Institute of Post Harvest Technology (IPHT), operating under the Ministry of Agricultural Development was established on 19th June 2000 by the Extraordinary Gazette of the Democratic Socialist Republic of Sri Lanka No. 1137/10 under the provisions of the State Agricultural Corporations Act. No. 11 of 1972 for the purpose of carrying out postharvest research and development activities pertaining to cereals, pulses, oil seeds, other field crops, fruits, vegetables and spice crops. The Institute has taken over the functions of the Rice Processing Research & Development Center (RPRDC) of the Paddy Marketing Board, which was set up with FAO/UNDP assistance in 1976. The Institute is regarded as the "apex" Institute in Sri Lanka where all areas of crop postharvest research and development activities, namely, harvesting, handling, storage and preservation, primary and secondary processing, product development, quality assurance and by-product utilization are carried out.

The Objectives of the Institute

According to the mandate given in the gazette notification, the Institute of Post Harvest Technology is supposed to serve as the coordinating body to bring together all agencies concerned for the purpose of identifying and prioritizing the research needs and implementation of programs for the development of the postharvest technology in Sri Lanka. The institute has to achieve the following objectives by conducting research and development activities pertaining to post harvest technology of perishable and durable food crops.

- a) Prevention of postharvest losses occurring in grains, field crops, fruits, vegetables and spice crops by introducing improved, cost effective technologies so that the incomes of the rural farming sector will be increased as a result of the increase in their marketable surplus. At national level, such measures would increase the quantity of essential food items available for consumption.
- b) Prevent the deterioration in quality occurring in grains, other field crops, fruits, vegetables, and spice crops due to adoption of improper postharvest handling, storage and processing techniques so that the quality of these essential food commodities reaching the market is significantly improved. Improvement of product quality will enable the farmers to sell their 'value added' produce at an attractive price in the competitive market and thereby increase their incomes from agriculture.
- c) Prevent the nutritional losses occurring in cereals, pulses and other food crops, fruits, vegetables, and spice crops due to use of improper postharvest techniques and thereby increase the nutritional status of the country.
- d) Improve farm level storage and preservation facilities to enable the farmers to sell their commodities during off seasons at attractive prices and thereby increase their incomes.

- e) Introduce improved postharvest techniques that utilize minimum labour in order to reduce production costs of agricultural commodities.
- f) Develop and transfer viable agro-based industries at rural level in order to increase income and employment opportunities of the rural farming sector and thereby improve their standard of living.
- g) Popularize the use of foods prepared from grains, pulses, fruits, vegetables, and spice crops among consumers in order to create a higher market demand for the local grain production. Increased consumption of these foods of high nutritional value will also lead to an improvement in the nutritional status of the country.

1.A brief account of IPHT activities.

Research activities

According to the research program for 2014, the research activities of the Institute, continued to solve technological problems confronting the postharvest industry, include both fundamental and applied research, although the latter predominates in the research efforts. During the year 2014 twenty research projects has been carried out, which consist seven research projects(07) were initiated in 2014 and nine research projects were continued from year 2013, four projects(04) are funded by private sector.

International Research Symposium on Postharvest Technology-2014

In this year a significant achievement of the IPHT was that the 1st International Research symposium on Post Harvest Technology was held at IPHT on 19th June 2014.. The Chief guest was Mr Mahinda Yapa Abeywardane, Minister of Agriculture, Key note speech was delivered by Dr. Keshavan Niranjana, Professor of Food Bio-Processing and Editor-journal of Food Engineering, University of Reading, United Kingdom. Mr.R.M.D.B.Meesasmulla, Secretary, Ministry of Agriculture, Mr.Jagath Palitha Jayawarna, Chairman, Institute of Post Harvest Technology were also spoke. And Dr.(Mrs) B.M.K.S.Thilakarathna, Director, IPHT has given a detail presentation of the Institute. Vote of thanks was given by Mr.D.P.C. Swarnasiri, Additional Director,(Research and technology transfer) There were about 30 researchers from Sri Lanka And other countries were presented their research findings.

In addition to disseminating these research finding within the postharvest sector for it's improvement, the results of the studies were published in the proceedings of the Sri Lanka Association for the Advancement of Science, Institute of Engineers of Sri Lanka, Symposiums conducted by different universities and international journals. Following research projects were continued from year 2013 and carried out during diferent quarters of the year and completed.

On going reseach projects to 2013 to 2014

- a) Evaluation of silo system for bulk storage of paddy
- b) Evaluation of handing practices and effect of hermatic conditions of coccons for store of pulses and oil seeds
- c) Promotion of dehydration and freezing industry for fruit and vegetables

- d) formulation and popularization of extruded rice based products.
- e) Development of a vegetarian sausage
- f) Enhancement of energy efficiency of Sri Lankan rice milling industry.
- g) Effluent management of rice processing industry
- h) Survey of diet and food habits of people of CKD affected areas.
- i) Evaluation of losses by combine harvesters used for paddy harvesting

New projects on 2014

- a) Evaluation of IPHT pulp extractor for mango, papaya and pineapple.
- b) Evaluation of postharvest life of "Ambul" bananas through application of 1-MCP (Methyl cyclo propane)
- c) Present status of grain storage in major paddy producing areas
- d) Design and Development of finger millet De-stoning machine
- e) Mechanization of chaff removing in paddy soaking.
- f) Performance evaluation of screw type oil expeller for Mee seed and ground nut.
- g) Survey in the identification of mango postharvest related problems in Sri Lanka.

Private funded projects

- a) design development of a low cost grain flour blending equipment*
- b) Bio efficacy of insecticide incorporated bags on storage pest under Sri Lankan conditions*
- c) Quality improvement for shelf life extension of ready to use fruit salad*
- d) Development of a mobile dryer for freshly harvested paddy.*

Technology dissemination

During the year 2014 the IPHT conducted following development projects island-wide for effective dissemination of postharvest technologies developed by the institute. These projects were funded by Trasery.

- a) Conduction awareness program for school canteen owners to popularize rice based products among school children
- b) Development of rice stalls to enhance procurement and consumption of superior quality rice.
- c) Establishment and development of rice mills to produce high quality rice.
- d) Initiation of rice product manufacturing micro-enterprises.
- e) Improvement of rice flour milling industry.
- f) Rural level grain storage for food security.
- g) Development of spice processing plants in Sri Lanka.
- h) Initiation of fruit based products manufacturing micro-enterprises at rural level.
- i) Technology transfer on oil extraction for sesame.
- j) Conducting awareness programs for home science teachers and students on popularization of local foods.
- k) Improvement of shelf life of fruits and modernization of fruit stalls.

Training activities

The training activities of the IPHT are production/ extension oriented, aimed towards updating the knowledge of producers, processors, traders and extension workers, from

both public and private sector agencies, in the field of Postharvest Technology of grains, cereals, root & tubers, fruits and vegetables. However, to a limited extent, research oriented courses were also conducted providing experience in the research methodology for students of universities and other academic institutions. The demand for IPHT's training increased significantly during the year 2014. During the year under report 53 residential training courses including study visits were conducted and 1808 individuals were trained. Eighteen(18) non residential courses were conducted and 1901 individuals were trained. Two hundred and twenty five (245) non residential courses were conducted at field centres and 8915 individuals were trained.

Extension activities

Technology dissemination through field level extension work, which is one of the major activities of the institute, was continued during the year 2014. To ensure effective technology transfer activities to the large number of stakeholders such as farmers collectors of fruits and vegetables ,whole sellers, traders, processors, students and beneficiaries of NGOs, ten (10) Field Centers were established at different district in island wide. Anuradhapura, Ampara, Polonnaruwa, Nuwara Eliya, Kandy, Lunama(Hambantota), Galle, Ambanpola (Kurunegala), Matara and Jaffna are the Field centers established under this program.

The extension activities conducted in Ampara & Monaragala, districts covered by Ampara field center, Hambantota district activities by Lunama field center, Nuwara Eliya & Badulla districts covered by the Nuwara Eliya field center, Kandy district by the Kandy field center, Galle district by Galle field center, Kurunegala and Puttalam districts by Ambanpola field centre, Matara district by Matara field center and field extension activities of other districts including Vauniya, Mannar and Trincomallee Baticoloa , Jaffna and Kilinochchiwere conducted by Jaffna field centre. The extension activities of Anuradhapura and Polonnaruwa districts were conducted through the Field Extension unit of the R&D centre, Anuradhapura and the extension division of the IPHT at Anuradhapura. During the period under review, 8915 farmers, processors, traders and extension workers, both from public and private sector organizations were trained under the IPHT extension program.

Consultancy and advisory services

The IPHT has progressively been sought after for consultancy and advisory services by both public and private sector organizations, as well as the Cooperative sector, which are either directly or indirectly involved in postharvest operations. By providing these services, the institute was successful to provide 122 numbers of information consultancies in establishing several new processing plants, modernizing existing plants and to solve technological problems encountered by rice millers and food processors in their day-to-day operations.

Quality investigations

The Institute played an important role in exercising quality control of agro/food products in the country by analyzing samples received from both private and public sector organizations for their physical and chemical quality. Sixteen (16) samples were analyzed under the period of review.

Publications

During the year 2014 the institute continued to publish extension leaflets and handouts, to publicize the activities and new technologies of the IPHT. In this context, 25680 extension leaflets and handouts were distributed among trainees and stake holders.

Institutional development

Whilst continuing the primary activities of the institute, namely, research, training, extension, consultancy/advisory and other development activities in Post Harvest Technology to achieve its goals and objectives, the 02 numbers of infrastructure facilities for research and development were being improved during the period under review.

Summary

This report is a summary of the activities of the IPHT during the year 2014 and is bound to generate interest in the people who are concerned with the subject of Crop Post Harvest Technology.

2. HIGHLIGHTS OF RESEARCH ACTIVITIES

Research, being the main activity of the IPHT, was directed towards solving technological problems confronting the postharvest industry.

The following are some of the highlights of the research programs conducted by the IPHT during the year 2014

2.1 Completed research projects

2.1.1. Treasury funded projects

2.1.1.1 Postharvest technology of grains and cereals

a) Development and quality evaluation of instant rice noodles (cup noodle)

Noodle is one of the main food item widely consumed throughout the world and their global consumption is second only to bread. The instant noodle market is growing fast in Asian countries and is gaining popularity in the western market. Wheat flour which is usually used for making instant noodles is poor in essential amino acid lysine. A few amount of instant rice noodles available in the Sri Lankan market but there are also not in the form of ready to use cup noodles. Sri Lankan rice self-sufficiency rate was increased within the last five years due to excess paddy production. It is important to introduce rice based novel food items such as instant cup noodle which helps to process excess paddy harvest in Sri

Lanka. Instant cup rice noodles could be a good solution for people with busy lifestyle to have nutritious meal in morning time since product can be prepared within 3 min by adding boiling water only. This study reveals that the product is at acceptable level 4.83 out of 5.00 in sensory evaluations and cooking loss was 10.18%.

b) Development of a rice flour based deep fried cracker and evaluation of its storability

Utilization of rice flour in the commercial food processing industry in Sri Lanka is limited to few products. Therefore the purpose of this research was to develop a deep fried cracker using rice flour as the main ingredient and to evaluate the shelf life stability of the product.

Preliminary studies were carried out to determine the optimum formulation for rice cracker and develop a process for cracker production. A cracker was prepared with high organoleptic acceptability using rice flour (85%), wheat flour (5%), corn flour (10%), carboxymethyl cellulose (1%), salt (2%), pepper (1%), sugar (2%), and coconut oil (5%), as ingredients. The dough which prepared with above mix was sheeted (1cm thickness), steamed (95-98 oC, 45 min), then cooled to room temperature and placed in a refrigerator (5 oC, 10 h.). Then sliced (25 x 12 x 1.5 mm), oven dried (55 oC, 3 h) and deep fried in oil (220 oC, 5 s).

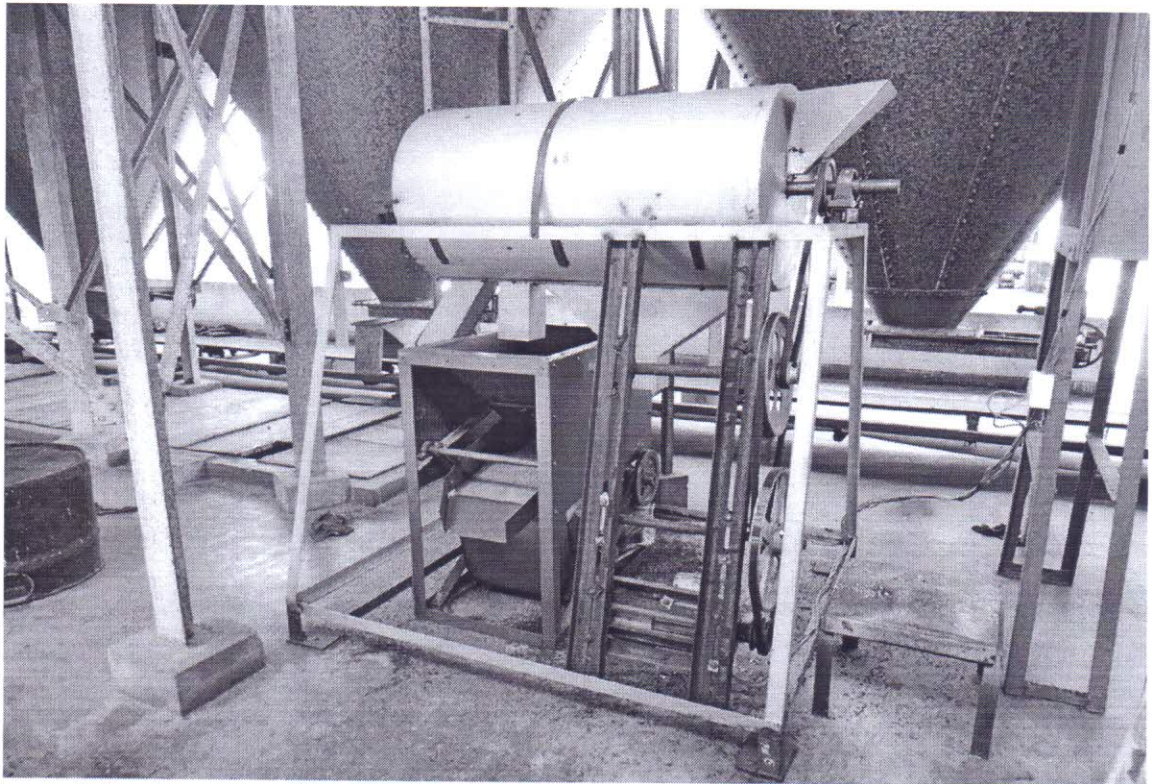
The storability of the product was tested with two types of packaging materials (polypropylene and oriented polypropylene/metalized cast polypropylene laminated bags) under ambient conditions (31±3 oC, 70±5% RH). During storage period physico-chemical, microbiological, and sensory qualities of the samples were evaluated monthly up to three months. Study revealed that deep fried cracker could be formulated using rice flour as the major ingredient and could be stored more than three months in oriented polypropylene/metalized cast polypropylene laminated packaging material without altering the sensory characteristics.

c) Formulation and Popularization of extruded rice based products.

Extrusion cooking was first introduced in food and feed processing in the late 1950's. Since then, the system involved have grown in popularity, efficiency and flexibility. Extrusion cooking technology is most used for cereal and protein processing in the food industry and is closely related to the pet food and feed sectors (Caroline et.al, 2012). Extrusion cooking, as a multi-step, multi-functional and thermal/mechanical process, has permitted a large number of food applications. Effects of extrusion cooking on nutritional quality are ambiguous. Beneficial effects include destruction of anti-nutritional factors, gelatinization

of starch, and increased soluble dietary fiber and reduction of lipid oxidation. On the other hand, Millard reactions between protein and sugars reduce the nutritional value of protein, depending on the raw material types, their composition and process conditions. Heat-labile vitamins may be lost to varying extents, Changes in protein and amino acid profiles, carbohydrates, dietary fiber, vitamins, mineral contents and some non-nutrients healthful components of food may be either beneficial or deleterious (Shivendra, 2006). Popularization of rice based extruded products with different formulations using dehydrated vegetables, sprouted pulses etc., is becoming new approach in Sri Lankan market to cut down the fast food consumption and improve the nutritional and health status of the population.

The selected raw materials, the main ingredient rice flour supplied the essential amount of carbohydrate as an energy source. Germination or malting of legumes improve the availability of mineral reduce the anti-nutritional factors enhance some of the vitamins and improve the overall nutritive value. So red Cowpea fulfill the protein requirement and Also ground nut act as source of polyunsaturated fat. Vegetable powders act as the source of mineral and vitamin. Due to the above component it produces a balance diet ultimately for children and infants. This project aims to production of extracted items from rice and introducing new products into the country.



d) Design and development of finger millet de-stoning machine

Finger millet is one of the most valuable food in human diet in the past as same as at present; because it contains large amount of nutrients. At the same time finger millet has a high demand in the society because most of diabetic patients are recommended to include finger millet in their diets. At present cleaning of finger millet is done manually, however it is rather difficult because it takes more time to separate impurities from the threshed finger millet. In Sri Lanka, several attempt has been made to develop a cleaning machine, However 100% de-stoning could not be achieved. Some others tried to use compartment type paddy rice separator for this purpose. These machines are expensive. This attempt to design and develop finger millet de-stoner combined with scalper cleaner. This machine gives 99.99% of de-stoned finger millet.

e)Mechanization of chaff removing in paddy soaking.

The chaff removal machine was developed to introduce to parboiling section in rice mill. Chaff removal is one of the high labour utilizing work before soaking. After cleaning paddy has been sent to soaking. At that time chaff is floated on water and that chaff has to be remove before soaking. Also, it is required to minimize the sinking of chaff during the cleaning process. In medium, large scale parboiling, the chaff removal process duration is more than five hours. The labourers has to work hardly in water continuously and within very short period they get tired and efficiency of chaff removal would be reduced. Therefore chaff removing will be very delay or some time badly doing. This will results to remain more unnecessary impurities with parboiled paddy. Efficiency of this chaff removal reduce the black grain of parboiled rice.

Therefore, mechanization is required to remove that floating material and it will reduce the labour application on this hard job for long time. Therefore this research focused to design and develop a mechanized chaff removal method for Sri Lankan rice milling industry. In this design top of the cleaning or soaking tank channel was introduce to float the chaff from feeding point to other end that has rotating fan touch with water. The chaff which came to this point is send to the outside from the soaking tank. Three horse power motor was used to rotate the fan.

f) Present status of grain storage in major paddy producing areas.

In Sri Lanka grains and of which paddy is the major agricultural food crop cultivated. A majority of the rural level farming community is involved in paddy cultivation as a livelihood practice. At present, this has drawn much attention in many governmental and non-governmental organizations, which leads to a rapid increase in yield and cultivation of paddy and other grains in the country, which is recognized as a national priority area of development.

However, past studies had revealed that nearly 10 to 13% of grains are lost during postproduction operations due to adoption of improper postharvest techniques. This loss amounts to approximately 420,000 metric tons of paddy annually, and the value of annual loss around Rs.3780 million. A major loss of grain in postharvest system occurs during storage particularly at farm level due to improper and inadequate storage facilities. Previous studies on the assessment of storage grain losses have revealed that approximately 4 to 6% of paddy is lost during storage at farm level (Fernando,1988).However, the need for grain storage arises because harvests are seasonal and rice being the staple food in the country leading to a fairly constant consumer demand throughout the year. A regular supply of food for daily consumption can only be assured and maintained through proper storage. Therefore excess grain has to be preserved in order to use in the off-season to ensure the food security. Improving the storage conditions at on farm and off farm level benefit the farmers, rice processors as well as the consumers by reducing these qualitative and quantitative losses.

But in order to improve the storage conditions at on farm and off farm levels ,present status has to be assessed to identify current problems and needs and other conditions prevailing in the country. Therefore, assessing the present status of the grain storage conditions in the major producing areas is highly essential for safe guarding food security and among national development strategies. In this regard 105 questionnaires on rice mill owners and paddy storage owners in the district of Anuradhapura and Polonnaruwa have been completed.

g) Enhancement of Electrical Energy efficiency of Sri Lankan Rice Mills

Energy is one of the essential yet costly requirements of paddy mills today. Due to escalating energy prices, this sector currently operating in a thin profit margins and this leads to many treats sustainable operation of this industry. Therefore, it is necessary to overcome this problem but only possibility is to enhance the energy performance of the mills. Energy audit is first step towards this journey. Energy audit is the strategy of adjusting and

optimizing energy, using systems and procedures so as to reduce energy requirements per unit of output while holding constant or reducing total costs of producing the output from these systems. Conduct of Energy Audit is essential to determine ways to reduce energy consumption or losses per unit of product output to lower operating costs. Energy Audit is also needed for establishing “bench-mark” (Reference point) for managing energy in the organization or system. Energy audit was conducted in large scale parboiled rice mill to find out basic energy consumption details.

The specific electrical energy consumption (SEEC) varies between 0.40 and 0.10 kWh per 1 kg of parboiled rice. The baseline for specific electrical energy consumption for Rice mill is 0.15 kWh per one kg of Parboiled rice. Specific Thermal Energy Consumption (STEC) is 4472 kJ/ kg of parboiled rice. The average paddy husk consumption for 1000kg of parboiled rice is 350 kg. Hence, Specific Paddy Husk Consumption (SPHC) is 0.35 kg of PH / kg of parboiled rice.

Some reasons for unnecessary electrical consumption are; sudden peak load occur due to rapid on and off of high capacity motors; the panel does not have sub metering facilities; using traditional starter switches; lack of maintenance records; lower power factor. Some points to be improved are; enhance the awareness of employees on the maximum demand variation; introduce separate breakers for key sections along with electricity meters and connect to the sub breakers and record the sectional power consumption daily; use soft starters for heavy machinery; follow manufacturer's maintenance recommendations and keep records of each maintenance; use of capacitor banks for high capacity motors.

2.1.1.2 Postharvest technology of fruits and vegetables

a) Promotion of dehydration and freezing industry for vegetables and fruits.

Dehydration:

The study was conducted to evaluate the effect of different dehydration technologies such as sun drying, solar drying, vacuum drying and freeze for one hour followed by drying in mechanical drier at 55°C and drying using lab scale air oven for dehydration of fruits and vegetables. Bael (*Aegle marmelos*), Palmyra (*Borassus flabellifer*), Sour Soup (*Annona muricata*), Sweet potato (*Ipomoea batata*), Pumpking (*Cucurbita maxima*), and Hibiscus (*Hibiscus rosa-sinensis*) were dehydrated and the proximate composition, chemical and antioxidant properties, microbial quality were evaluated in prepared fruit powders. Different products were formulated such as ready to bake vegetarian cake mix, instant herbal drink,

and instant jelly mix. The products were evaluated for its physical, chemical, microbial and sensory quality characteristics. According to the results obtained, vacuum drying can be recommended as effective drying treatment by protecting chemical characteristics and retention of antioxidant properties of fruit powders. Among three different treatments of instant herbal drink; Beal powder 60g + sugar 40g + ginger powder 2g were able to protect its proximate composition and sensory properties. Among three formulas of instant ready to bake vegetarian cake mixes the treatment containing wheat flour, rice flour, beal powder and pumpkin powder in 10%, 17%, 3%, and 15% respectively was most suitable combination with other minor ingredients could be stored for 90 days without any quality deteriorations. Prepared jelly product using pectin and gelatin as a gelling agents; jelly product prepared from the mix containing 2.36% of gelatin was most preferred by protecting all sensory quality characteristics evaluated.

Freezing:

Some preliminary trials were conducted to evaluate the effect of blast freezing to extend the shelf life of vegetables such as Thibbatu and Jack bulbs. The blanching time temperature, freezing time and temperature, freeze storage conditions were evaluated.

b) Development of dehydrated Murunga leaves fortified nutri-mix

Nutri-mix is an instant food type that can be a good supplement of essential vitamins and minerals which is contributing to recommended daily intake. Murunga leaves and pumpkins are commonly found in almost all areas in Sri Lanka, and they can be used as good replacements for traditional ingredients in nutria-mix without altering their nutritional content. As these crops are underutilized in Sri Lankan context, this study was carried out in order to introduce a new path to get the maximum use.

As treatments, four recipes were prepared changing the percentage of dehydrated murunga leaves powder ($t_1 = 2\%$, $t_2 = 3\%$, $t_3 = 4\%$, $t_4 = 5\%$) and dehydrated pumpkin powder ($t_1 = 18\%$, $t_2 = 17\%$, $t_3 = 16\%$, $t_4 = 15\%$). Then a constant percentage of brown rice (60%) and mung bean (20%) was added to develop the nutri-mix. Sensory evaluation of four samples was conducted using thirty untrained panelists using a five point hedonic scale. The result show that the treatments were significantly different ($p < 0.05$) Treatment 2 (3% murunga powder and 17% pumpkin powder) got the highest median scores for all sensory attributes while treatment 4 (5% murunga powder and 15% pumpkin powder) showed the

lowest median score. Therefore treatment 2 was selected as the best ingredient combination for nuti-mix as it showed significantly higher sensory attributes among the others.

c) Development of Murunga leaves (*Moringa oleifera*) based bread spread

Murunga leaves contain high amount of protein, calcium, magnesium, p, iron, vitamin A, choline, thiamine, vitamin C and valine. This study was carried out to develop a bread spread with dehydrated murunga leaves powder which is considered as an underutilized plant in Sri Lanka. As treatments four recipes were prepared changing the percentage of dehydrated murunga leaves powder (t1=35%, t2=40%, t3=45%, t4= 50%) and dehydrated carrot powder (t1=15%, t2=10%, t3=5%, t4= 0%). Sensory evaluation of four samples was conducted by thirty untrained panelists using a five point hedonic scale. The results were analyzed using complete randomized design in factorial experiments. The best recipe out of all treatments was 45% of murunga leaves 5% of carrot powder 35% of margarine, 8.4% of onion 3% of vinegar 1.2% of mustard 1.2% pepper and 1.2% salt. The selected recipe from the sensory evaluation was stored in two packaging materials (glass bottles, polypropylene cups) and stored at two storage conditions, ambient (28-30 °C, 65%-75 RH %) and refrigerated (7-9 °C, 75-80% RH) for three months period. Moisture content, acidity, pH, rancidity, microbial count and sensory acceptability of the product were determined in one month interval using standard methods. Decrease in acidity, increase in pH and moisture were observed in the sample stored in polypropylene cups at ambient condition after one month and microbial count was higher than the standard limit specified by the Sri Lanka Standards Institution of margarine. Also the same result was observed in the samples stored in polypropylene cups at refrigerated condition after two months. There was significant difference ($P= 0.05$) in moisture content and pH during three months of storage in the samples stored in glass bottles at refrigerated condition and ambient condition while there was no significant difference in titratable acidity at 1st month in the sample stored in glass bottles at refrigerated condition and ambient condition. However, the coliform count was nil in all conditions up to the three months of the storage period. The study revealed that good quality bread spread could be prepared by using dehydrated Murunga leaves powder and can be kept for three months period at ambient and refrigerated condition in glass bottles without quality deterioration.

d) Use of safe packaging for vegetable transportation on main supply chains in Sri Lanka

A study was carried out to determine the technical feasibility of use of safe packaging for cabbage, carrot, beet and luffa which are major vegetables where the harvest is handled in very large quantities. They are excluded from the regulation which vegetables should be transported in safe packages. The study was conducted through four supply chains Dambulla to Colombo, Thambuttegama to Colombo, Nuwaraeliya to Colombo and Jaffna to Dambulla. Plastic crates and polysack bags were used as packaging types. Vegetables transported by farmers were selected randomly at wholesale markets of the starting point, then packed in polysack bags and plastic crates and transported to destinations. Weight loss, colour change, visual quality, firmness, TSS and disease incidence of produce were measured at end points. After two days, these parameters of vegetables transported in both packaging types were measured to determine loss occur at retailer and consumer stages.

At the stating markets damaged up to certain extent of vegetables were observed. Results indicated that mechanical damage was the main cause for postharvest losses of vegetables. The study reveals that postharvest losses of beet transported in polysacks and plastic crates did not show considerable difference. But transport loss of cabbage, carrot and luffa can be reduced using plastic crates. Overall visual quality of vegetables also was better when transporting in plastic crates. Fungal infections were observed at retailer/consumer level for long bean and okra transported in both packages. Loss of produce firmness was significantly higher of vegetables transported in polysacks compared to plastic crates. The use of plastic crates reduced the transport loss of cabbage by 5.8%, carrot by 15.8% and Luffa by 14.7%, and also preserve the quality parameters of vegetables during post production handling.

e) Reduction of postharvest losses in leeks (*Allium porum*) during transportation using wooden bulk packages

Leek (*Allium porum*) is an economically important vegetable which occupies a prominent position among vegetables grown in Sri Lanka. Due to variation in length, presently available packages are not suitable for leeks transportation and reported annual postharvest loss was 15.7%. This study evaluated the suitability of wooden bulk packages for leek transportation from Nuwara Eliya to Dambulla supply chain. The treatments used; T1-75cm x 45cm x25cm with filling height 20cm , T2- 75cm x 45cm x30cm with filling

height 25cm, T3-75cm x 45cm x 25cm with filling height 20cm, T4- 75cm x 45cm x 30cm with filling height 25cm and T5-80cm x 45cm 30cm cover with plastic coated wire on four sides with filling height 25cm. Existing transportation package which wrapped with poly sack and tight with a rope at the middle (T6) was used as control. During transportation in package temperature, RH%, respiration rate and ethylene production were measured in four hours interval .To evaluate the quality of the produce; weight loss %, visual quality rating (VQR), Physical damages, wilting rate, were measured before and after transportation. Among the packaging methods tested, T2- 75cm x 45cm x30cm with filling height 25cm showed better performances by reducing wilting %, physical damage and weight loss (%) while retaining higher in visual quality rating.

f) Assessment of postharvest losses and quality deteriorations of banana fruits during supply chain activities in Sri Lanka

Banana is the most cultivated and consumed fruit crop in Sri Lanka. Due to its perishability and improper postharvest handling practices, postharvest losses of banana during the supply chain activities is very high. Therefore, the research was conducted to assess the postharvest losses of banana at different handling stages and to identify the causes for these losses. This will immensely benefit the postharvest industry in minimizing the postharvest loss as well as preserving the fruit quality.

The study was conducted from Embilipitiya to Colombo which is the main banana supply chain in Sri Lanka. Quantitative losses and quality deterioration of banana fruits at farmer, transporter/whole seller, retailer and consumer stages were studied. The total mechanical damages of banana were 21.82%. Physiological weight loss during the postproduction time was 9.34 %. Overall visual quality from farmer to consumer changed from excellent to poor which limits the usability. Fruit firmness significantly declined by 61.88 N in the supply chain. Use of improper packaging techniques was identified as the main cause of postharvest loss of banana.

g) Evaluation of IPHT pulp Extractor for Mango Papaya & pineapple

The consumption of fruit juices, fruit pulps have multiple benefits. The pulps preserve ensure the continuous availability of each variety of fruit. Consumers do not have the problem of maturing fruit and avoid the loss of fresh fruit that is not consumed immediately. So the extraction of pulp is become an important process at present. A pulp extractor has been introduced by Institute of Post Harvest Technology and it was specially

designed for extraction of pulp from tamarind fruits. The same machine was evaluated to extract pulp from papaya and pineapple and it was succeeded. It was found that the extraction efficiencies were 84.2% and 82.2% for papaya and pine apple respectively. And pulp recoveries were 60.5% and 48.7% for papaya and pine apple respectively. Input capacities of the machine were 527kg/hr and 540kg/hr for papaya and pine apple respectively.



Extraction of pulp from papaya



Extraction of pulp from pineapple

h) Survey in Identification of Mango Postharvest related Problems in Sri Lanka

Mango is the king of fruits in Sri Lanka. It is widely spread all over the island. Since thousand years ago, it is known as very delicious and economically important fruit for Sri Lankans. Recently, it has been growing for commercially and household level. Mango is identified as seasonal, perishable, tropical and climacteric fruit. Many people are earning money by harvesting, selling processing and exporting mangoes. Even though, mango has many values that it has been suffering lot of postharvest problems. Example such fungi and bacterial diseases, stem end rot, harvesting problems, mechanical damages, inappropriate ripening methods and transport losses. These problems may decrease mango fruit quality and market value. Nowadays, we are losing much money due to above problems. So, it is better to identify these problems and how much they are contributing to fruit quality and market value. Therefore, this survey is obviously important to identify postharvest problems and suggest proper solution. Seventy five (75) questionnaires related to information have been completed in this year.

2.1.1.3. Postharvest Technology of other crops

a) Evaluation of an efficient extraction process for Mee oil

Madhuca longifolia, synonym *M. indica*, belonging to the family Sapotaceae, is an important economic tree growing throughout India and it is also grown in Sri Lanka. But, the consumption occurs among only the grown areas such as Kurunagala, Kegale, Kandy etc. In fact People that are used to consume Mee, still use only traditional method called “Paha” for extracting Mee oil using Mee seed. The kernels are 70% of seed by weight, are seed contains two kernels, having 2.5 cm x 1.75 cm size oil content in *latifolia* is 46% and 52% in *longifolia*. In seeds oil content is +35% and protein in 16%.

This research study aims to test a small scale screw type oil expeller for extracting Mee oil. The screw press is basically a helical screw mount on a conical shaft supported by bearing with the shaft rotating in a stationary cylindrical barrel. As the shaft rotates, the screw towards discharge end of the assembly moves the oil seed that is fed through the hopper to the inlet where it is pressed. The mee seed that were to be pressed were put inside the hopper while 4 kW motor continuous to rotate the screw shaft at three different speeds. For this experiment, the popular Chinese origin screw type oil expeller machine with 25 mm pitch of screw shaft, 75x315 mm internal barrel were used. The machine mainly consists of pressing part, adjustment part and transmission part. This machine, common in coconut oil extraction was used to modify for mee oil extraction in custom level and it is previously tested for sesame oil extraction.

b) Survey of diet and food habits of people of CKD affected areas..

Chronic Kidney Disease of unknown etiology (CKD) is one of the major level health issues at national level in Sri Lanka. However, no causative effect had been found out yet and many people are suffering and dying every day due to this illness. The CKD is found in a remarkably restricted area in the north central region. The affected areas include, Medawachchiya, Girandurukotte, Kabithigollawa, Padaviya, Medirigiriya, Dehiaththakandiya and Nikawewa regions. Intake of heavy metals, high level of fluorides in water, diabetes, hypertension and few more had been thought of to be the cause but yet no scientific evidence is present in making these the direct causes.

Dietary patterns and food habits of people are major cause of many diseases and health problems in Sri Lanka. Therefore, this study was needed to assess the diet and food habits as

well as the heavy metal contaminations of these diets of the CKD affected areas as well. Thus this study was focused on assessing the diet and food habits, heavy metal contaminations of the CKD affected areas and presence of any identifiable relationship between CKD and diet and food habits of the affected people.

About 484 questionnaires have been finalized. Knowledge on the food consumption habits of the people living in the areas where renal diseases spread can be obtained through this study.

2.1.2. Private funded Research Projects

a). Bio-Efficacy Insecticide Incorporated Bags on Storage Pest under Sri Lankan conditions.

The study was conducted to evaluate the efficacy of insecticide (deltamethrin) incorporated bags (Zerofly) against the insect attacks during paddy storage under Sri Lankan conditions. The study was conducted at Institute of Post Harvest Technology(IPHT), Anuradhapura and the warehouse of Paddy Marketing Board(PMB). Paddy samples bagged in Zerofly sacks were stacked at both locations and for controls. untreated polysack bags were used. Paddy samples were collected at initial stage and monthly intervals during storage period, and were analyzed for moisture content, weight loss due to insect damages, thousand grain mass, germination percentage, total milling yield and head rice yield. Data was analyzed using Analysis of Variance (ANOVA) by statistical analysis system.

The moisture content of paddy grains fluctuated between 13.3%-14.3% during the storage period but any significant difference was not observed among storage bag types. The level of insect damages in control increased with storage time while the initial level of insect damage of treated bags remained unchanged. Insect damage to grains was significantly higher ($p=0.05$) in untreated bags than to treated bags. The insect damage was reduced by 3.51-4.38% using Zerofly bags during paddy storage. In addition dead insect bodies were found on outer surface of the insecticide incorporated bags but no live or dead insects were found on untreated bag surface during storage time. Mainly rice weevil (*Sitophilus oryza*) and lesser grain borer (*Rhyssopertha dominica*) were found in paddy samples of untreated bags and number of insects increased with time. The germination percentage of grains in treated bags was significantly higher than the control samples. It has reduced from 93% to 82-83% in treated bags. During the six months of storage period TGM did not show any significant difference ($p=0.05$) among different bags and store locations. TMY and HRY resulted significantly lower ($p=0.05$) values of

paddy stored in untreated bags than to Zerofly bags. Use of insecticide incorporated bags can reduce the loss of TMY and HRY of paddy during the storage time. The study revealed that 6 insecticide treated bags are appropriate packaging to protect stored paddy from insect infestations.

b) Development of mobile dryer for freshly harvested paddy.

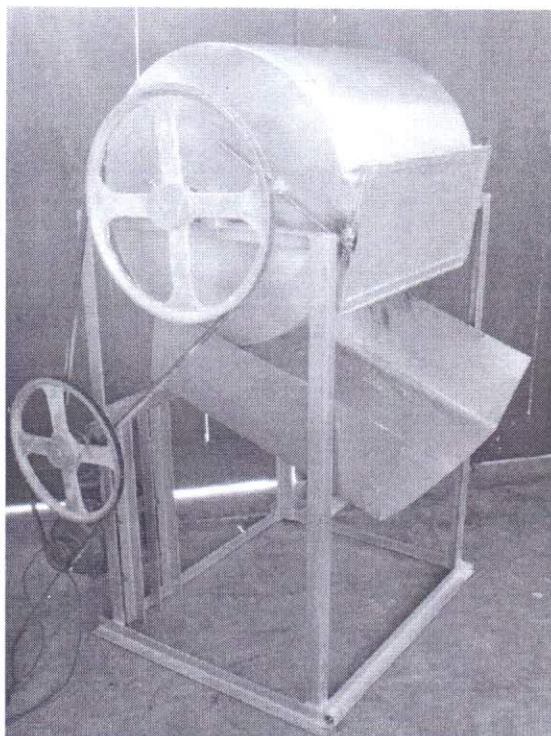
In recent times, due to an increase of usage of large scale mechanical threshers and combine harvesters, moisture content of harvested paddy is high as much 22%. In Past, leaving the panicles of paddy with stalk in the field for 2-3 days just after harvesting was the common practice adopted by farmer in major paddy cultivation areas. This practice helps the farmers to dry paddy to the moisture level for safe storage. At present this practice has passed, as the high capacity mechanical threshers or combine harvesters are used for harvesting and threshing simultaneously.

As a result of this the paddy harvest in everywhere is consisted with high moisture content which affects the many severe crisis in paddy cleaning, storing, and processing as well as the consuming. Mechanical threshers or combine harvesters are also a must for mechanization of paddy sector, in the matter of fact that there should be an efficient and mechanized method available for drying freshly harvested paddy at field level up to an acceptable level of moisture content.

Farmers do not dry paddy due to unavailability of drying facilities at farm level and as a result either they sell or store paddy without drying. Drying freshly harvested paddy is done only by large scale rice mills that they have high capacity dryer at the site. If drying facilities are available at reasonable cost farmer can use these facilities on hiring basis. This project aimed to develop mobile dryer having capacity of 1000kg. This is to encourage the private sector to hire this dryer like combine harvester or mechanical thresher to provide services to farmers at reasonable price as well the farmers to dry their grain before selling and storage. Therefore, it is important to introduce suitable small/medium scale mobile dryer which have capacity of approximately 1000 kg per batch. This is mentioned in the "National Priorities in Postharvest and value addition

Research in Agriculture 2011-2015" under Priority 01 and 02. Fabrication of dryer has been completed.

c). Design and development of a low cost grain flour blending equipment



To reduce the consumption of wheat flour in the country, one of the major solution is to introduce flour mixtures prepared with rice flour and other locally produced grains flour to the market and flour based food processors, since it has a great demand even now. Blending equipment are essential to produce flour mixture with uniformly distributed particles. Flour blending machines are available in the international market. But they are very expensive and those are not in an affordable price to purchase for even medium scale flour producers. Therefore a low cost grains flour blending equipment was designed and developed under this project to introduce for flour producers. Developed grain flour blending equipment was tested with blending rice flour and wheat flour with the ratio of 3:7 which is generally used as a mixture for preparing bread. It was found that the minimum blending time required for giving an uniform mixture was 3 minutes when equipment was operated at 51rpm. Capacity of the equipment was 50 kgs per batch and it was operated by a 3Hp electric motor.

RESEARCH PUBLICATIONS

Local Journals:

1. **Chandrajith.,U.G.,Bandara.,D.M.S.P.,JayathungeK.G.L.R.,Thilakaratne.,B.M.K.S.,**2014,Devedlopment and quality evaluation of instant rice noodles(Cup Noodle),Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp 5-8.
2. **Jayawardene.,H.S.,Thilakaratne.,B.M.K.S.,** 2014, Development of a rice flour based deep fried cracker and evaluation of its storability, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp 9-13.
3. **Thilakaratne.,B.M.K.S.,Arachchi.,M.K.U.,Wimalasiri.,K.M.S.,Wijesinghe.,D.G.N.G.,**2014,Development of dehydrated Murunga leaves fortified Nutri-mix, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp14-18
4. **Thilakaratne.,B.M.K.S.,Gunasekara.,A.A.M.T.,Jayawardene.,N.W.I.A.,Ginigaddara.,G.A.S.,**2014,Development of Murunga leaves(Moringa Oleifera)based bread spread, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp33-41
5. **Swarnasiri.,D.P.C.,**2014, Quality Evaluation of locally produced rice available in the open market of Sri Lanka: A case study 2012, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp42-47
6. **Gunawardhane.,C.R.,WasalaW.M.C.B.,Dissanayake.,C.A.K.,Wijewardene.,R.M.N.A., Chandrajith.,U.G., Thilakaratne.,B.M.K.S.,**2014,Use of packaging for vegetable transportation on main supply chains in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp52-56
7. **Wijewardene.,R.M.N.A.,Senevirathne., G.D.,Jayawardana.,N.W.I.A.,Dissanayake., T.M.R., WasalaW.M.C.B., Thilakaratne.,B.M.K.S.,**2014, Reduction of postharvest losses in leeks(*Allium Porum*)during transportation using wooden bulk packages., Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp57-61
8. **WasalaW.M.C.B.,Gunawardhane.,C.R.,Champa .,W.A.H., Wijewardane.,R.M.N.A., Rathnayake.,R.M.R.N.K., Chandrajith.,U.G., Thilakaratne.,B.M.K.S.,**2014, Assessment of postharvest losses and quality deterioration of banana fruits during supply chain activities in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp62-66
9. **Gunathilake.,D.M.C.C.,Palipane.,K.B.,**2014,Evaluation of big onion size grading machine, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp67-72
10. **Champa .,W.A.H., Rathnayake.,R.M.R.N.K., Thilakaratne.,B. M.K.S.,** 2014,Development of an appropriate methodology for extending shelf life of cassava(*Manihot esculenta* Crantz), Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp73-78
11. **Champa .,W.A.H.,Gill.,M.I.S., Mahajan.,B.V.C.,Arora.,N.K.,Bedi.,S.,** 2014,Preharvest foliar sprays of salicylic acid enhance berry quality of table grapes(*Vitis vinifera* L.)cv.Flame seed less, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp88-92

12. **Rathnayake.,R.M.R.N.K.,WasalaW.M.C.B., Dissanayake.,C.A.K., Gunawardhane.,C.R.,, Chandrajith.,U.G., Thilakaratne., B. M.K.S.,**2014, Effect of sodium bicarbonate and ammonium bicarbonate on anthracnose fruit rot of tomato caused by *Colletotrichum cocodes*, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp93-98
13. **Bandara.,D.M.S.P.,Gunwardene .,C.R.,Didssanayake.,T.M.R., Thilakaratne., B. M.K.S.,Rathnayake.,H.M.A.P.,**The role of pre-geletinization on quality improvement of rice flour,2014 Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp99-103
14. **Dissanayake.,T.M.R.,Bandara.,D.M.S.P.,Rathnayake.,H.M.A.P.,Senanayaka.,D. P.,** 2014,Development of continuous type paddy cooker, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp132-135
15. **Rathnayake.,H.M.A.P.,Dissanayake .,T.M.R.,Bandara.,D.M.S.P., Senanayaka.,D.P.,and Thilakerathne.,B.M.K.S.,**2014 Design Development of an energy efficient vibrated four shifter for rice flour industry, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp136-139
16. **Dissanayake,B.D.M.P.,Jayawardene.,H.S.,and Thilakathne.,B.M.K.S.,Design and Development of a low cost grain flour blending equipment.,**2014 Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp140-145
17. **Senanayaka.,D.P.,Rathnayake.,H.M.A.P.,Bandara.,B.D.M.P., and Dissanayake., T.M.R.,**2014 Development and testing of pedal-cum-motor operated paddy cleaner, . Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp146-150
18. **Rathnayake.,H.M.A.P.,Senanayaka.,D.P.,Bandara.,B.D.M.P.,Bandara.,D.M.S.P. Palipane.,K.B.and Thilakerathne.,B.M.K.S.,**2014,Evaluation of medium scale IPHT maize thresher, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp151-154
19. **Senanayaka.,D.P.,Rathnayake.,H.M.A.P.,Thilakerathne.,B.M.K.S.,Bandara., B.D.M.P., and Dissanayake.,T.M.R.,**Evaluation of rasp bar mill for size reduction of maize. Proceedings of the International Research Symposium on Postharvest Technology,Institute of Post Harvest Technology, Sri Lanka ,pp155-159
20. **Wijewardene.,R.M.N.A.,Jayawardane.,H.S., WasalaW.M.C.B., Thilakaratne., B. M.K.S.,** 2014, Formulation and quality evaluation of instant drink prepared from dehydrated bael(*Aegle marmelos*)fruit powder, Proceedings of International Symposium on Agriculture and Environment, Faculty of Agriculture, University of Ruhunu, 29 th Nov.
21. **Bandara B.D.M.P., Gunawarrdana C.R., Senanayake D.P., Thilakarathne B.M.K.S.,** Design and development of a small scale paddy dryer, Proceedings, International Symposium on Agriculture & Environment (ISAE 2014), University of Ruhuna, Sri Lanka., pp 347-349.
22. **Bandara B.D.M.P., Gunawarrdana C.R., Senanayake D.P., Thilakarathne .M.K.S.,** Development and Evaluation of a Batch type Maize Dryer, Proceedings, International Symposium on Agriculture & Environment (ISAE 2014), University of Ruhuna, Sri Lanka., pp 351-353
23. **Chandrajith U.G., Gunathilake D.M.C.C., Bandara B.D.M.P., Swarnasiri D.P.C.,** Effect of Harvesting Paddy by Combine Harvester on Seed Germination,

3.0 Development projects

The development projects carried out by the IPHT during the year 2014 in order to ensure technology adoption, and their impact on the postharvest industry are described below:

3.1 Development projects under the IPHT funding.

3.1.1. Conduction Owner Program for School Canteen Owners to Popularize Rice based products among School Children

At present in the social system people use their money and strength liable to highly competitive life style and unlimited desires, requirements and hopes. Hence joint family back ground which enjoys an unlimited freedom, changes to nuclear family back ground with has stress and limited freedom. Hence food preparation and habits of food taking as a whole family changes to fast food prepared by outside food outlets. Such fast food mostly prepared by wheat flour and health benefits are poor of them. Mostly the young generation prefer this type of fast food which lacking most of health benefits.

Most of the foods violate the regulations of healthy and food security, and therefore Cardiac diseases, diabetes, Cancer related diseases, gastric problems are common among the people.

At present Sri Lanka health sector faces challenges about 15% of school children are heavier than height and having diabetes, low weight of one infant per six infants born, 13% children are shorter than standard, Low weight of ¼ of children less than 5 years of age and 65% of deaths were due to non-communicable diseases. This falls in health is due to no exercise, mental stress, heavy weight, dietary pattern etc.

By understanding this national issue Ministry of Education has banned to use these food in school canteens. Since our staple food is rice, rice based food products popularization among school children will be one of the solution for these problems. There is a potential for popularization of rice based food product among school canteen owners as the Institute of Post Harvest Technology has developed number of food products in this regard.

Training category	Place/District	Number of trainees
Canteen owners	Anuradhapura	24
Canteen owners	Peradeniya ,Kandy	25
Canteen owners	Konara,Ampara	92
Canteen owners	DOA ,Polonnaruwa	32
Canteen owners	Zonal Education,Ampara	30
Canteen owners	DS school ,Ampara	26
Canteen owners	Puthukudiyurpu,Mulathiv	30
Canteen owners	Megadara school,Galle	106
Canteen owners	Paraduwa School,Matara	79
Canteen owners	Puttalam	26
Canteen owners	Anamaduwa,Puttalam	26
Canteen owners	Vidatha,Kotmalee,Nuwara Eliya	19
Canteen owners	Vidatha,Kotmalee,Nuwara Eliya	25
Total		484

.In total 18 numbers of training programs were conducted and 484 school canteen owners were trained under this project.

3.1.2. Development of rice stalls to enhance procurement and consumption of superior quality rice

There is no standardization for rice in the Sri Lankan Market. According to the consumer preference purchasing of rice can be done. There are different types of rice in the market as well. These rice if it is standardize as special grade, grade one, grade two, grade three, high consumer acceptance and trust can be obtained for rice. This knowledge should be given to producers and sellers of rice. There after they can reach foreign market as well.

Popularization of highly nutritious local rice is carrying out by the Department of Agriculture in these days. There is a big potential market to this paddy converted to the rice. The rural products sold by the road sides has big market demand. Hence, these sales outlets is recognized through this project and giving advices to them to popularize the such local rice products though out the country is the one of the objective of this project.

At present consumer much prefer quality rice. Therefore high quality rice can be sold at high price where as normal rice can be sold at a low price. In the view of the consumer, they can

buy better quality rice at a rational price. Under this project one training programme has been conducted and thirty trainees have been trained at Pansiyagama, Polpithigama in Kurunegala district.

3.1.3.Improvement of the quality of locally produced rice to international standards

Rice quality improvement will become even more important in the future with Sri Lanka, like most other countries, entering into international as well as regional trade agreements and thereby opening its market to the outside world.

A recent survey conducted by the IPHT on quality of locally produced rice available in the open market has revealed that the rice quality produce from most of the rice mills is below the requirements of international standards.

The main factors contributing to reduction in rice quality are presence of high amounts of broken grains, paddy seeds, type admixture, impurities, damaged and discoloured grains and non-uniformity in bran removal.

Taking into consideration the importance of increasing rice recovery levels and improving rice quality in local rice mills, the Institute Post Harvest Technology (IPHT) has embarked on a programme to improve the processing techniques of existing rice mills through following activities:

Identification of deficiencies of the techniques presently adopted in the process line, Conducting a series of training programmes on improved rice processing techniques, Increase the knowledge to machinery selection, proper maintenance of machinery, selection of raw materials, proper storage techniques etc. are the main activities.

As well as assisting the rice millers in the preparation of feasibility reports, Provision of process layout plans, machinery and building requirement, Continuous monitoring the performance of the mills also included in the programme.

Under this programme, in 2014, IPHT has developed 12 rice mills by giving technical advice. 06 numbers of Training courses were Arranged to explain proper process line, installation new machinery like de-stoner or grader, improving parboiling technique and

drying facilities, which are major activities conducted in these rice mills. Baticaloa, Ampara (Damana), Amban Pola (Kurunagala), Hambantota (Lunama), Matara, Punarine, are the main area that have been considered for development. 152 rice millers were trained under this project.

3.1.4 Initiation of Rice Based Products Manufacturing Micro-Enterprises at Rural Areas

This development project was started to popularize and initiate rice based food items such as rice cake, biscuit, bite (Murukku) and rice flake based food items. Consumption of rice based above food items are very low due to lack of knowledge. Technical knowledge was transferred to trainees with practical demonstration under the each training program.

Training programs were conducted at Ipalogama of Anuradhapura District, Thalpapwila, of Matara district, Lunugala of Ampara District, Udayapura of Ampara District, Lindawewa, Nochchiyagama in Anuradhapura District, Kattaiadampan in Mannar District, Delthota in Kandy District, Dankotuwa in Puttalam District, Rikillagaskada in Nuwara Eliya District, Wandinagala in Ampara District, Moragaha pallama in Ampara District, Medirigiriya in Polonnaruwa. 597 beneficiaries were trained under above fourteen (14) programs.

3.1.5. Development of on-farm indoor paddy storage facilities to increase the Farmers income (Rural level grain storage for food security)

The economy of Sri Lanka is mainly depending on agriculture and major crop is rice and it is the staple food. With the purpose of a country which is becoming self-sufficient of food, lot of efforts have been taken to increase the rice production and productivity. Several efforts are fertilizer subsidy, developing the major and minor irrigation schemes, providing high yielding varieties and extension services. Although the rice production has been increased, the present farmer's family income is not satisfactory because high cost of production and low farm gate price during harvesting season. In Sri Lanka, mainly there are two paddy cultivation seasons called yala and maha. In most of paddy cultivating areas, two harvesting seasons in the year are almost same, therefore, during harvesting seasons due to peak production the paddy price remains at very low prices. Also the postharvest losses in paddy storage have been identified 4%-6% quantitatively and considerable quality deteriorations. Due to improper storage practices, losses due to pest, mould growth, rodents and some biochemical reactions severely take place. As one solution, for increasing the income of rice

farmers, storing of paddy for several months can be proposed because during the off seasons market demand for paddy and price are considerably higher. If farmers are trained and encouraged to store paddy with proper practices, they can maintain the quality of produce for long time. Therefore, conducting awareness programs and development of on-farm indoor paddy storage facilities are essential activities so that the rice farmers' can increase their income and to obtain high profit margin from rice cultivation.

Training programs were conducted at Ipalogama in Anuradhapura District, Kotawehara in Polonnaruwa District, Ruhunuliyangasthota in Ambalanthota District, Kahgatagasdigiliya in Anuradhapura District, Pudukuduirippu in Mulativ District, Diwulankadawala in Kurunegala district, Medirigiriya in Polonnaruwa district, Kusumpokuna in Polonnaruwa district, Galnewa in Anuradhapura district, Uhana in Ampara District, Damana in Ampara district, Moragapallama in Ampara district, Ivanaihappukulum in Mannar district and Mullikulum in Mannar district. 10 programs were conducted and 466 persons were trained.

3.1.6. Improvement of rice flour milling industry.

Institute of Post Harvest Technology (IPHT) has been engaging in research, training and other development activities on production of rice flour and contributes to solve problems in rice flour industry by giving all technical supports. The project "Improvement of rice flour Industry" is such main project that IPHT is engaged to achieve above task. Under this project Rice flour processing units are established by encouraging prospective persons to initiate new rice flour processing units and modernize the existing rice flour processing units as they can be able to produce high quality rice flour.

Under above development project 4 trainings on "High Quality Rice Flour Milling Technology" for the rice flour millers and enthusiastic persons were conducted in Kalthota, Gannorura, Nuwara-Eliya and Batticaloa areas. One hundred and fifteen(115) persons were participated. 20 rice flour mills were modernized/established during the period concern.

3.1.7. Introduction of spice processing industry at rural level

In this project in 2014, we could transfer the technology to the entrepreneurs who need to establish this industry and those who need to upgrade their present available industry. During the year 2014, we could cover the different district organizing training programs

such as Gannoruwa in Kandy district, Galenbidunuwewa in Anuradhapura district, IDB-Moratuwa in Colombo District, Thunukkai in Mulative district, Damana in Ampara district, Wandinagala in Ampara district, Mahawala in Ampara district lectures on how to process spice product and how to pack in qualitatively along with the practical demonstration and printed books were carried out. Eight programs and 314 Trainees were trained on spice processing technology. Three (03) numbers of new spice processing units were able to initiate in this year.

3.1.8. Initiation of fruit-based products manufacturing micro enterprises at rural level

Fruit and vegetables play a vital role in human nutrition, especially as sources of vitamins, minerals, dietary fiber and antioxidants and increased consumption of variety of fruits on a daily basis is highly recommended because of associated health benefits. Although, agro climate in Sri Lanka is suitable for a wide range of tropical subtropical and some temperate fruits which have a high market potential, 30-40% of the harvest is lost at the postharvest stage due to improper supply chain and value chain activities. This amount could have been used in reducing poverty, hunger, and malnutrition and also it can be used to increase export earnings of the country. On the other hand, low income level due to lack of knowledge on income generating methods in rural farming sector is another key issue which should be addressed immediately.

In this context, this project aimed to develop appropriate systems for improved handling and processing of fruit produced in rural areas hence, the objective of this project was initiation of income generating agro-based micro enterprises at rural level while improving handling and processing practices of fruits which ultimately leads to minimization of postharvest losses of fruits.

At the first, farming communities were selected in eight districts, namely, Anuradhapura, Polonnaruwa, Kurunegala, Hambanthota, Moneragala, Jaffna, Mannar and Nuwara-Eliya. Eleven training programs were conducted and 397 beneficiaries were trained. Training programs were conducted at Puthukuduiruppu in Mulative district, Duwegodaniyagama in Galle district, Poddiwelaniyagama in Galle district, Anamaduwa, Mahadivulwewa in Puttalam district, Kaduduruwela in Polonnaruwa district, Damana AGA office, Udayapura, Suhadagama in Ampara district, Ginigathena in Nuwaraeliya district, Thunwana palama, Kethsirigama, Moragahapallama in Ampara District and Meesalei in Jaffna district.

3.1.9 Introduction of technologies for establishment of fruit ripening units and modernization of fruit stalls.

The aim of this project is awareness creation among the people who involved in fruit marketing to use of correct and safe methods for fruit ripening and aware them about correct postharvest handling practices. It also facilitates the fruit sellers (traders) to upgrade their fruit stalls according to the correct methodologies.

Under this project, technology was provided to use of correct method to artificial fruit ripening, establishment of fruit ripening units and introduce technologies to modernize fruit stalls.

By conducting the said project, it was able to adoption of people for correct methodologies for fruit ripening, make availability of safe food to consumer, reduction of food related health risks, and ultimately it was affect to reduce food losses. Under this project 5 training programs were conducted to educate the 192 fruit stallers.

3.1.10 Technology transfer on oil extraction for sesame

The extraction of sesame oil from the sesame seed is not a completely automated process in Sri Lanka. Even at the present, it is done by using the traditional method called "Sekku" method and Mee oil extraction is done by traditional method called "Pehe". Hence, our institute evaluated the most common type of extractor available in the market with a view to improving its performance with maximum extraction efficiency achieved by these different oil crops. This method accommodated the expelling different types of oils such as Mee, groundnut, and sesame. We needed to popularize this mechanism as a technology transfer of this project. Therefore, we initiated a development project titled "Technology transfer on oil extraction for sesame". The training programs were conducted in four places such as Vauniya, Omanthe, Pudukuduiruppu, Ampara. There are altogether 90 trainees were participated for four training programs. Thereby, we could identify the different places for establishing processing unit.

3.1.11. Conducting Awareness programs for Home Science Teachers and Students on popularization of local foods

Sri Lanka has an agricultural economy where agriculture plays a major role in income of many people of the country. Favoured by existing climatic conditions, irrigation facilities, land etc. A wide variety of crops are being cultivated in all the districts of the country. Paddy

is the main single crop cultivated in the country and rice is the staple food. Other than paddy many grains and pulses including maize, green gram, black gram, soya, cowpea, Millet etc. are being widely cultivated in the country. All these crops are containing high nutritive values and many health benefits. But since many years back much of foreign food commodities have been imported to the country. A large amount of foreign exchange is spent on them. For example, importing wheat flour. Wheat flour has been an essential component in diet of some groups of people such as the estate sector. Further imported fruits are found to be abundantly in local fruit markets. At present, the country is self-sufficient in paddy as well as maize. And many development programs conducted by the government and many nongovernmental organizations had boosted the production of many crops.

However, simultaneously the farmers are struggling much to attain better market opportunities as well as better profit. On the other hand the consumer is struggling with high retail prices at the market. Further the number of cases reported on non-communicable diseases and health issues related with consumption patterns and food habits are continuously increasing every day. Changing of lifestyles to much with the fast moving world and development also had contributed to this.

Many people neglect the local foods due to ignorance of the health and taste benefits or due to many other reasons. But by increasing the consumption of local foods many benefits can be gained by all farmers, consumers as well as traders. These benefits could be nutritional, health wise economical or even social benefits gained by all.

School children are the back bone of the nation in the future. And many health issues have been reported on schoolchildren due to their dietary habits. Home science is a primary subject that directly deals with culinary sciences, food nutrition and even food habits. There free educating and conducting awareness programs to home science teachers and students in school is a vital event in popularizing consumption of local foods and thereby uplifting the Sri Lankan economy as well as the Sri Lankans.

Training programs were conducted At IPHT in Anuradhapura district, Gannoruwa at Kandy district, Nikaweratiya and Mallawapitiya at Kurunegala District and at Ampara in Ampara district. Eight (08) training programs were conducted and 461 students were trained in this regard.

3.2 Introduction of improved of postharvest techniques

The following improved postharvest techniques were introduced to farmers island wide through field extension programs of the IPHT during the year 2014:

Improved post harvest technology	No.
a. IPHT Pulse dehuller machines to Galle	04
b. IPHT Hand operated maize sheller to Thirappane ,Anuradhapura	02

4.0 TRAINING

The demand for training, especially from private and cooperative sector organizations, was continuously increasing during the period under review. The training courses conducted by the Institute were production/extension oriented, aimed towards technology transfer to personnel engaged in postharvest operations

A large number of farmers and farmwomen were also trained in collaboration with the Department of Agriculture, Provincial Councils, NGOO.

4.1 Details of the training programs conducted:

a) Inplant training

1. Six students from Queensland University of Technology, Brisbane, Australia were trained in Institute of Post-Harvest Technology, Anuradhapura, Sri-Lanka from 20th November 2014 to 19th December 2014.
2. Four Mechanical, Production, Chemical Engineering undergraduates from university of Peradeniya from 01st October 2014 to 30 th January 2015.
2. One in plant trainee from Katunayake Institute of Engineering Technology was trained on workshop technology from 09/09/2014 to 09/03/2015.

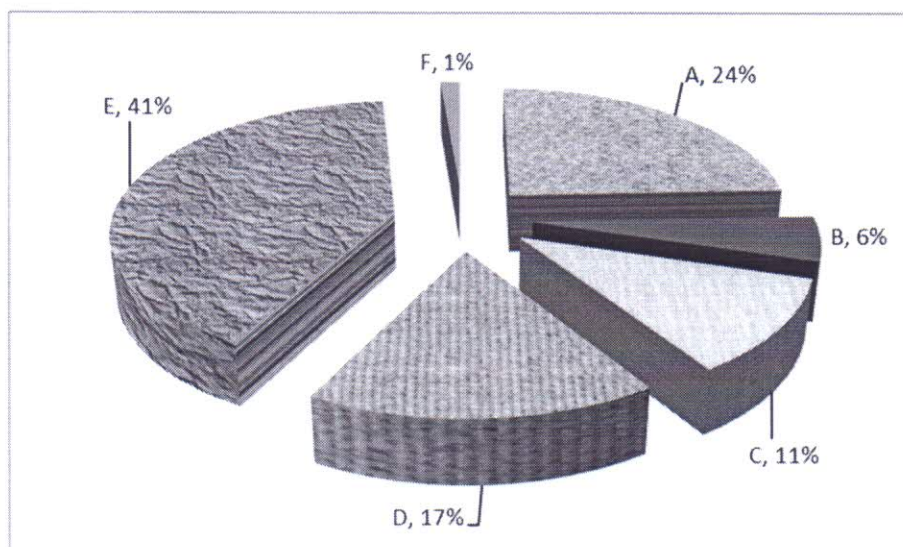
b) Residential training at IPHT, Anuradhapura:

During the year 2014, 53 short-term residential training courses were conducted and 1808 persons were trained in various disciplines of Post Harvest Technology and the details are given in Fig 1.

FIG1: RESIDENTIAL TRAINEES OF IPHT

Total number of trainees- 1808

Total no of training programs -53

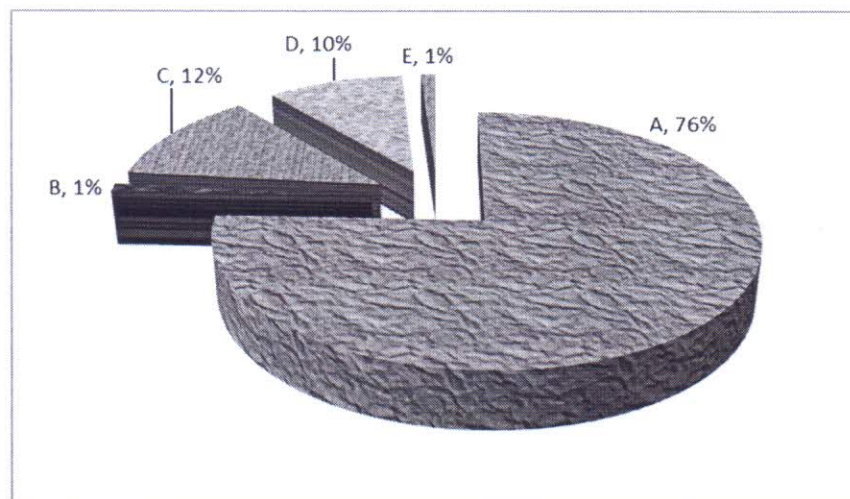


- A. Farmers, farmwomen and members of farmer organizations- 439(24%)
- B. Project beneficiaries and small/medium scale entrepreneurs-98(6%)
- C. Fruit and vegetable growers,Collectors,Traders, Rice and other grain processors-202(11%)
- D. Extension Officers from public, co-operative, private sectors and NGO- 303(17%)
- E. Students from Secondary schools, Universities, Schools of Agriculture and Technical Colleges-742(41%)
- F- Foreigners-24(1%)

c) Non residential training, Field level training / demonstrations

During the year 2014, the 18 non- residential training, field training programs and demonstrations were conducted and 1901 individuals were trained. During the period under review, the institute continued its technology transfer activities through its Field Centers effectively especially in major crop producing areas. The field centers are located in Ampara, Nuwara Eliya, Abanpola (Kurunegala district), Kandy, Lunama (Hambantota District), Anuradhapura, Polonnaruwa Galle, Matara and Jaffna were conducted 245 Training programs and 8915 trainees were trained.

FIG2:NON RESIDENTIAL TRAINEE CATEGORIES_OF IPHT IN THE YEAR 2014
TOTAL NUMBER TRAINED_1901
Total no of training programs -18



Trainee categories:

- A. Farmers, farmwomen and members of farmer organizations -1438(76%)
- B. Project beneficiaries and small/medium scale entrepreneurs -20(1%)
- C. Fruit and vegetable growers,Collectors,Traders, Rice and other grain processors- 235(12%)
- D. Extension Officers from public, co-operative, private sectors and NGOO- 188(10%)
- E. Students from Secondary schools, Universities, Schools of Agriculture and Technical Colleges -20(1%)

4.3 Participation in Exhibitions

The IPHT participated in three exhibitions held island wide during the year 2014 as follows:

- 1.Exhibition organized by Sri Lanka Council for Agricultural Research Policy from 11/08/2014 to 12/08/2014 in Colombo
- 2."Dayata Kirula" Exhibition from 24/02/2014 to 01/03/2014 in Kuliypitiya
- 3."Govi Sathiya" Exhibition from 9/09/2014 to 14/09/2014 at Thelijjawila,Mathara

5. CONSULTANCY AND ADVISORY SERVICES

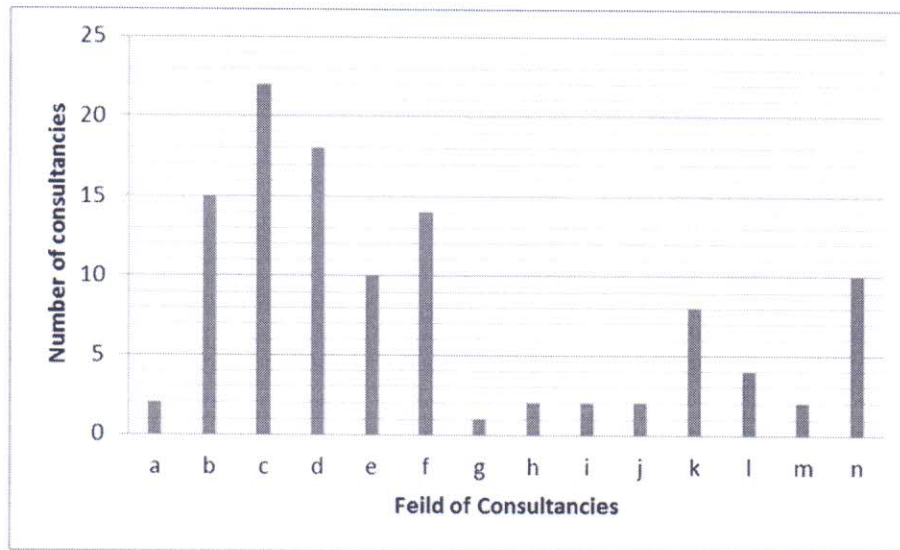
5.1 Number of consultancies carried by IPHT staff

During the year 2014 institute invented new postharvest technologies and those technologies could be send to the entrepreneurs to enhance their technologies accordingly, as a result Hundred and twenty two (122) new investors, private rice millers, mill owners, co-op societies, private traders, NGO's and individuals engaged in different postharvest activities

in the country have sought the assistance of the IPHT to establish new mills, to modernize already existing mills, to establish food processing plants, to establish drying units, to construct new storage structures and to solve technological problems pertaining to other postharvest activities.

The details of consultancies completed by the IPHT during the year 2014 are given in Fig.3.

Figure 3. The details of consultancies completed /information provided during the year 2014



Field of consultancy:

a. Establishment of rice processing plants	02
b. Rehabilitation and modernization of existing rice processing plants	15
c. Rice and other flour processing	22
d. Spice processing	18
e. Drying of chili, fruits and vegetable, spices, grains/herbals	10
f. RPRDC/ IPHT postharvest machinery and equipment	14
g. Rural level rice processing	01
h. Machinery and equipment evaluation	04
i. Processing of fruits and vegetables	02
j. Information on noodle production technology	02
k. Oil processing	08
l. Information on rice percentage	04
m. Valuation of machinery	02
n. Rice processing and parboiling	10
Total number of consultancies	122

Details of importnt consultancies

- a) Information on rice percentage of red Nadu rice variety was supplied to Deputy Director(plan Implementation),District Plan Implementation Office ,Hambantota.
- b) Technical suitability of Dong Yang Paddy Mill for milling of paddy in remote areas was reported to Mr.Saman Kumara,Rainforest Rescue International, 169, Mathara Road, Magalle, Galle on 14 th August 2014.
- c) A valuation report was provided on two rice flour processing machines belong to Palugasdamana Multi- Purpose Corporative Society(Pvt.)Ltd. On 21 st August 2014
- d) Technical support was provided to purchase new rice flour mill to Kalankuttiya rice milling complex belong to National Food Promotion Board on 26 th November 2014.
- e) A list of procumbent of value addition Rice milling machineries and equipment was provided to Provincial Director of Agriculture(NP),Department of Agriculture, Northern Provincial Council, Navalar Road,Jaffna on 08th July 2014
- f) Participated as a member of the committee to discard the old paddy stocks on 20 th August 2014
- g) A technical report on grinder was provided to Mr.P.B.L.Premnath, Director of the provincial Agriculture, North Central Province on 11 th December 2014.
- h) Information on raw rice milling percentage was supplied to Mr.R.S.Wijesekara,Direcor(Extension and training)Extension and Training Centre,Department of Agriculture
- i) Demonstration was carried out on Multi crop dryer,IPHT,to Mr.U.D.S.Weerasooriya from Hamasgahawatha,Pihimbuwa on 05 th February 2014.
- j) Machine specifications for rice flour milling machinery were provided to Deputy Agricultural Director, Provincial Deputy Agricultural Director Office,Monaragala on 19 th February 2014.
- k) Machine specifications for rice flour milling machinery were provided to Cooperative Development Assistant Commissioner,Uwa Provincial Council,Cooperative Development Department,No:199,Keppetipola Road,Badulla on 20 th February 2014
- l) Demonstration was carried out and advices were given on manufacturing of a tray dryer to Mr.W.M.C.K.Egodapitiya from no:90/c,Minigamuwa,Galagedara on 07 th March 2014.
- m) Demonstration of machines and providing advices on finger millet dehusking and Black gram dehulling to Mr. W.G.Jayasooriya Bandara from no:258, Thammannapura, Thambuttegama on 25 th April 2014.
- n) Demonstration on maize gritting machine was carried out to Mr.D.T.Dharmapala Dissanayaka from no:60,Saliyadivulwewa,Eppawala on 24 th June 2014.
- o) Demonstration was carried out and Drawings supplied,Advices provided on rice drying and dryers to Mr.A.H.M.Cassim from,49/1,Arakyyala,Kekunagolla on 19 th August 2014.
- p) Advices on rice parboiling was given to Mr.K.A.Upul Priyantha Gunapala from Kekirawa Junction,Kahatagadigiliya on 10 th September 2014.
- q) Demonstration was carried out and advices, handouts were given on drying of spices To Mr.K.K.S.Wijesinghe, 396/4,Pahala Biyanwela, Kadawatha on 29 th October 2014.
- r) Advices on repair of Carborandum stones of rice mills to Mr.Ismahoon,"Mahaweli Agromech",Industrial place,Thambuttegama on 18 th November 2014
- s) Address list of rice millers was supplied to Mr. N.H.M.S.Narampanawa, from Forest Office,Vavuniya on 21 st November 2014.
- t) 04 rice mills have been modernized. Quality of rice has been increased to the level of export quality by this process and thereby paddy farmers will receive higher price for their products. Efforts will be made to reduce environment pollution as could as possible

- u) Advices given on rice processing to Mr.A.M.D.B.Atthanayake from 508,Alikulawa,Diyabeduma on 13 th February 2014
- v) Advices were provided by demonstrating the rice mill,flour mill and oil mill to Mr.W.A.M.Karunarathne from "Amba Sevana" Wathupalagama,Mahawa on 13 th February 2014.
- w) Advices were provided by demonstrating parboiling equipment to Mr.R.A.D. Priyathissa Bandara from no:7/4, Laksha Uyana,Polonnaruwa on 12 th February 2014.
- x) Advices were provided by demonstrating parboiling equipment to Mr.Upul Sanjeewa from Upul Wehara,Matheruwa on 12 th February 2014.
- y) Advices were provided by demonstrating postharvest machinery to Mr. S.M.A.Senanayake,Handagala,Ralapanawa,Kebithigollawa on 12 th March 20
- z) Advices were provided on postharvest machinery to Mr.A.D.Priyankara Diwulgasnayake from No:31,Kumbuk Anda,Maha Illuppallama on 28 th April 2014.
- aa) Advices on parboiling waste water treatment were provided to Mr.U.E.Koswatta from Kumajai Summilo Ltd.No:1.Gunasekera Lane,Colombo 08 on 10 th June 2014
- bb) Advices on Grinding machines were provided to Mr.I.A.Dissanayaka from 255/2,Ankara 70,South Higurakgoda on 07th July 2014.
- cc) Advices on pepper drying were provided to Mr.Dharshana Donsooriya,Hatagahawattha,Pihimbuwa on 08th July 2014.
- dd) Advices on steamed paddy production were provided to Mr.N.J.Liyanage from Gale kade,Sucharithagama,Anuradhapura on 11th July 2014.
- ee) A list of rice millers was provided to Mr.K.A.Chamindha Pradeep Kumara (Sales promotion officer-W.M.Punchi Banda and sons (pvt.)Ltd.)on 31 st July 2014.
- ff) Advices on rice parboiling tanks were provided to Mr.D.M.C.R.Dissanayake from Halmillakotuwa,Thuththiripitagama,Ipalogama on 012 st August 2014.
- gg) Technical support was provided to purchase new rice flour mill to Kalankuttiya rice milling complex belong to National Food Promotion Board on 26 th November 2014
- hh) 11 rice flour mills have been modernized. Due to this process, quality machines can be used and thereby rice flour pieces will get thinner. This will help to get quality product
- ii) Machine specifications for rice flour milling machinery were provided to Deputy Agricultural Director, Provincial Deputy Agricultural Director Office,Monaragala.
- jj) Machine specifications for rice flour milling machinery were provided to Coopative Development Assistant Commissioner,Uwa Provincial Council,Cooperative Development Department,No:199,Keppetipol;a Road,Badulla on20 th February 2014.
- kk) Demonstration was carried out and Drawings supplied,Advices provided on rice drying and dryers to Mr.A.H.M.Cassim from,49/1,Arakyyala,Kekunagolla on 19 th August 2014.
- ll) A valuation report was provided on two rice flour processing machines belong to Palugasdamana Multi- Purpose Corporative Society(Pvt.)Ltd. on 21 st August 2014
- mm) 09 units of spicy items producing have been started. These units will help the consumers to get spicy items in good quality.
- nn) Advices on establishment of a rice mill were provided to Mr.Ruchira Shamantha; Gunathilake from 149/A,"Sithumina",Dedigawala,Waskaduwa on 03 rd January 2014.
- oo) Advices were provided to develop exsisting rice mill of Mr.W.M.Prassanna Saliya Thilakarathna from Kirindiwattha, Payagala on 03 rd January 2014.
- pp) Demonstration was carried out on Multi crop dryer,IPHT,to Mr.U.D.S.Weerasooriya from Hamasgahawattha,Pihimbuwa on 05 th February 2014
- qq) Demonstraion was carried out on Rice milling machinery and advices were provided on establishment of rice mill to Mr. S.W.Grashan Kristo from 312, Akkara 50, Kimbulapitiya Road, Negambo on 18 th February 2014.
- rr) Advices on rice flour processing were provided to Mrs.D.M.P.Tikirimenike from Potiyagama,Pahalagama,Thambuttegama on 09 th May 2014

- ss) Advices on rice noodle plant was given to Mr. M.ArunaRanasinghe, No:56/58, Kurunegala Road, Narammala on 05 August 2014.
- tt) Advices to develop Rice flour production to Mr.R.H.A.B.Ranasinghe from Dayagama Walagambahuwa, Maradankadawala on 11 th August 2014.
- uu) Advices on Rice parboiling in domestic level was provided to Mrs.D.G.Mallika Wimalawardene from no:498B, Hurulunikawewa, Galenbidunuwewa on 14 th August 2014.
- vv) Spice processing booklet was provided and advices on spice processing was given to Mr.D.L.E.Amarasinghe on 19 th August 2014.
- ww) Technical support was provided to purchase new rice flour mill to Kalankuttiya rice milling complex belong to National Food Promotion Board on 26 th November 2014
- xx) 4 units of production of Sesame oil, kohomba oil and Mee nut oil have been started. These units have created self-employment opportunities
- yy) Advices on rice processing and spice processing were provided to Mr.B.M. Wanasinghe from Ranasinghe stores, MakulPotha on 24 th April 2014
- zz) Advices on spice processing were given to Mr.Prabath Weerasinghe from 3122, Dhahayiyagama Junction, Stage 3, Anuradhapura on 13 th May 2014.
- aaa) Advices provided and demonstration was carried out on spice processing to Mr.L.I.Gonapenuwala, from Chinthana Agro Industries, Nagadeepa Mawatha, Jaffna Junction, Anuradhapura on 05 th August 2014.
- bbb) Advices on rice noodle plant was given to Mr. M.ArunaRanasinghe, No:56/58, Kurunegala Road, Narammala on 05 August 2014.
- ccc) Advices to develop Rice flour production to Mr.R.H.A.B.Ranasinghe from Dayagama Walagambahuwa, Maradankadawala on 11 th August 2014.
- ddd) Advices on Spices and Oil Production to Mr.T.M.J.B.Thennakoon from Suriyagala Mawatha, Kakulugaswewa, Wariyapola on 14 th September 2014.
- eee) Advices were provide on rice milling for his Ph.D.Study to Mr.Nimal Chandra Gunawadanage from Centrl Enviornmental Athority, EIA unit on 10 th October 2014.
- fff) Demonstration was carried out and advices were given on sesame oil extraction to Mr.K.Wanthapalam from Alaikallupottakulam, Omanthai, Vavniya on 15 th October 2014
- ggg) Advices on spices and rice flour processing to Mr.K.D.Manjula Senadeera, from 137, suigas pedesa, Mattegoda, on 10 th December 2014
- hhh) Advices on spices and spice processing machines and oil processing to Mr.A.M.Kumarasinghe, 'Sahan' Sudharshana Mawatha, Srawasthipura on 16 th December 2014
- iii) Advices on spices and spice processing machines and oil processing to Dineth Siriwardene, from Water Resources Board, Korakahawewa, Anuradhapura on 16 th December 2014.
- jjj) Handouts were sent to Mr.S.M.Chamath Yasantha from Delgahaduwa, Dodanduwa on Spice drying by IPHT multi crop dryer on 15 th September 2014.
- Kkk) Handouts and Advices were sent to Mrs.Kamani Priyangani Akmeemana from no.06, Woodland state, Madahapola, Malsiripura on preservation of lime juice, and Presevatives for tomato, Chilli sauce and information on bottle sealer on 15 th September 2014.
- Mmm) Demonstration on rice parboiling equipment was given to Mr.K.A.Upul Priyantha Gunapala from Kekirawa Junction, Kahatagasdigiliya on 10 th September 2014.
- Nnn) Demonstration on maize gritting machine was carried out to Mr.D.T.Dharmapala Dissanayaka from no:60, Saliyadivulwewa, Eppawala on 24 th June 2014

5.2 Analysis of grain samples

Name	Type of sample	No. of samples	Analysis done
Government agent Batticola	Paddy	02	Quality analysis
Aurvedic Hospital Anuradhapura	Gingerly oil	04	Quality analysis
Central Bank	Rice	02	Quality analysis
Government agent Ampara	Rice	03	Quality analysis
Private sector Horowpathana	Maize	03	Quality analysis
Ven.Piyarathna Thero Eppawala	Paddy	02	Quality analysis

6. PUBLICITY/ PUBLICATIONS

6.1 Paper articles/news items

During the period under review, publicity to IPHT activities were given through mass media and the details are as follows:

Articles appeared on the daily news papers

- 1."New methods for storage of soya beans" in the "Dinamina" news paper on 17 th Thursday April 2014 by Mrs Sakunthala Jayasinghe, article prepared by discussing with Dr.D.M.C.C. Gunathilaka, Senior Research Officer, IPHT.
2. "The part of the paddy harvest getting lost during harvesting" in the "Lankadeepa" 04th September 2014, by Mr. Kumara Sri Liyanarachchi by discussing with Dr. D. M. C. C . Gunathilaka, Senior Research Officer, IPHT.
3. "Advancement of Postharvest technology " by the "Dinamina" newspaper on 13 th Friday June 2014 by Mrs Sakunthala Jayasinghe article prepared by discussing with Dr. Swarnashika Thilakerathne, Director, Dr.D.M.C.C. Gunathilaka, Senior Research Officer, and Dr. Champa Wickramarachchi, Senior Research Officer IPHT

6.2 Circulation of IPHT Publications

During the period under review 25680 copies of hand-outs, leaflets and other information bulletin of the IPHT pertaining to Post Harvest Technology improvement published both in Sinhala and English languages were issued to beneficiaries of the institute.

7.0 IPHT Facilities used by other Institutions

The following institutions/organizations were used auditorium and hostel facilities during the year 2014.

Item no	Name of the Institution	Frequency
1)	Regional Development Bank	05times
2)	Principal Secretariat(North Central Province)	08 times
3)	District Secretariat(North Central Province)	01 time
4)	Register Generals Department	01 time
5)	Global Lifestyles(Sri Lanka)-	02 times
6)	Ceylon Transport Board, Rajarata Region, Anuradhapura	01 time
7)	Toastmaster club	01 time
8)	Special Project Ministry	01 time
9)	Sri Lanka Rajarata University	27 times
10)	Institute for Provincial Control	01 time
11)	Nilson Lanka(Pvt.)Ltd.	02 times
12)	Labour Department	01 time
13)	South Asian Clinicals	01 time
14)	Road Passenger Transport Service Authority	02 times

8. IMPROVEMENT OF FACILITIES FOR RESEARCH AND TRAINING/ EXTENSION

- 1) IPHT chemical Laboratory was started to modernize to obtain accreditation facilities.
- 2) Roof of the workshop was started to elevate and completely renovation work was started.

Rs 70 million amount of funds were given by the treasury to renovate and upgrade the lab facilities to analyze heavy materials, residual components and other component of foods. The improvement of the research laboratory up to unprecedented level is a remarkable achievement in year 2014.

9. Flood disaster at IPHT

There was a flood by over flowing Malwathu Oya, The Centre totally under flood about 5 ft. damaging to computers ,motors, generators, machinery etc. The total sum of flood disaster were estimated as Rs. 7,077,918.00 without hostel and store damages.

10. PROFESSIONAL DEVELOPMENT OF IPHT STAFF

The following officers of the Research and Training staff of the IPHT underwent training in the fields pertaining to Post Harvest Technology during the year 2014:

a) *Post-graduate Degree Programme*

- | | |
|---|---|
| 1) Mrs.R.M.R.K. Rathnayake
Research Officer | Ph.D. in Plant sciences
Post Graduate Institute of science(PGIS)
University of Peradeniya
01/05/2012 to 01/05/2015 |
| 2) Mrs. K.G.L.R. Jayathunge
Research Officer | Ph.D. in food Science & Technology
Queen's University, Belfast
United Kingdom. |

b) *Short term programmes*

- | | |
|---|--|
| 1. Dr.B.M.K.S.Thilakarathne
Mr.B.D.M.Bandara | Canton Trade fair, China
10/01/2014 to 14/01/2014 |
| 2. Dr.(Mrs)R.M.N.A Wijewardane | Workshop on Rice Management of Food Borne
Pathogens
20/01/2014 to 24/01/2014 Pakistan |
| 3. Mr.D.P.C.Swarnasiri | Capacity building program equipment and
Technology for Processing and value addition to
Agricultural products at small scale\Rural level.
09/02/2014 to 25/02/2014-India. |
| 4. Mr. W.M.C.B. Wasala | Workshop on Development of cold chainsystems
for perishable agrifoods products.
23/03/2014 to 29/03/2014, New Delhi, India, |
| 5. Mr.H.M.A.P.Rathnayake | Scaling up Rice fortification in Asia 2014
16/09/2014 to 19/09/2014 Bangkok, Thailand |
| 6. Mr.D.P.C.Swarnasiri | Workshop on Innovative postharvest
management tools and Technologies for fruits
and vegetable products
03/11/2014 to 07/11/2014-Republic of China |
| 7. Dr.B.M.K.S.Thilakarathne | Short term training on agricultural research
Management (NAARM)
22/12/2014 to 02/01/2015 Hyderabad, India |

11. STAFF POSITION AS AT 31st DECEMBER 2014

Post	Name
Director	Dr. (Mrs). B.M.K.S. Thilakaratne BSc.Sp.(Agric. Food Sci.& Tech.) Sri Lanka, MSc.(Food Sci.& Tech.), Sri Lanka PhD.(Postharvest Tech. Horticulture), India Dip.in rice sciences(China) Dip.in Post harvest biologyof fruit and veg.(Israel)
Additional Director (R&TT)	Mr. D. P. C. Swarnasiri BSc. (Agric), Sri Lanka Dip. in Agric.(China) MSc. (Agric), Sri Lanka PGDM, Sri Lanka
Additional Director (Admn & Finance)	Mr. R.K.A.P. Ramanayake B.Sc. Management (Sri Lanka), Licentiate Certificate ICA, MIPFDA
Principal Mechanical Engineer	Mrs. D. P. Senanayake B.Sc. Mech. Eng. (Sri Lanka) M. Phil.Chem. Eng (Sri Lanka) AM(IESL)
Senior Mechanical Engineer	Mr.H.M.A.P.Rathnayake B.Sc. Prod.. Eng. (Sri Lanka) M.Tech in Agriculture process Engineering (INDIA) AM(IESL)
Senior Research Officer	Dr. D.M.C.C.Gunathilake BSc.Sp.(Agric.Eng), Sri Lanka MSc. (Agric. Eng.), Sri Lanka PhD. (Process & Food Eng.), India NDT (Agric), Sri Lanka, ASAE (USA)
Senior Research Officer	Mrs. W.A H. Champa BSc. Sp. (Horticulture), Sri Lanka M.Phil (Crop Sci.), Sri Lanka
Research Officer	Mr. W.M.C.B. Wasala B.Sc. Sp. Agric. (Sri Lanka)
Mechanical Engineer	Mr. B.D.M.P. Bandara Dissanayake BSc. (Eng.) Sri Lanka, M.Eng.(Processing & Food Eng.) India, AMIE(Sri Lanka)
Research Officer	Mrs. K.G.L.R. Jayathunge B.Sc. Sp. Agric. (Sri Lanka)

M.Phil. Food Sci.& Tech. (Sri Lanka)

Research Officer

Mrs. R.M.R.N.K. Rathnayake
BSc.Sp. (Botany), Sri Lanka
MSc. (Postharvest Tech. of Fruit & Vegetables),
Sri Lanka

Senior Research Officer

Dr. (Mrs.) R.M.N.A. Wijewardane
BSc. (Agric.) Sri Lanka,
MSc. (Agric.) Sri Lanka,
PhD. (Horticulture postharvest Technology),
India

Research Officer

Mr. C.R. Gunawardane
B.Sc. Special Chemistry (Sri Lanka)

Senior Mechanical Engineer

Mr. T.M.R. Dissanayake
BSc. (Eng.), Sri Lanka
MEng.(India), AMIE (Sri Lanka)

Research Officer

Mrs. H.S. Jayawardane
BSc. (Applied Sci.), Sri Lanka.
MSc. (Food Sci. & Tech.)

Extension Officer

Mr. P.G. Lalith Wasantha
B.Sc. Sp.Agric. (Sri Lanka)

Extension Officer

Mrs. C.A.K. Dissanayake
B.Sc.Sp. Agric. (Sri Lanka)
PGDipl. Agric.(Sri Lanka)

Mechanical Engineer

Mrs. D.M.Srima Priyangika Bandara
B.Sc. Chem. Eng.(Sri Lanka),
MEng Manf. Syst. Eng (Sri Lanka)

Extension Officer

Mr. M.M. Herath
B.Sc Sp. Agric. (Sri Lanka), Dip. in Counselling

Research officer

Mr.U.G.Chandrajith
B.Sc.(Sp.)Botany
MSc.Food Sc.& Tech

Accountant

Mr.I.M.N.P.Ilangasinghe
B.Com(Sp.)

Administrative Officer

Mr Janaka Subasinghe

a) *Post-graduate Degree Programme*

- | | |
|--|---|
| 1) Mrs.R.M.R.K. Rathnayake
Research Officer | Ph.D. in Plant sciences
Post Graduate Institute of science(PGIS)
University of Peradeniya
01/05/2012 to 01/05/2015 |
| 2)Mrs. K.G.L.R. Jayathunge
Research Officer | Ph.D. in food Science & Technology
Queen's University, Belfast
United Kingdom. |

b) *Short term programmes*

- | | |
|--|--|
| 1.Dr.B.M.K.S.Thilakarathne
Mr.B.D.M.Bandara | Canton Trade fair,China
10/01/2014 to 14/01/2014 |
| 2. Dr.(Mrs)R.M.N.A Wijewardane | Workshop on Rice Management of Food Borne
Pathogens
20/01/2014 to 24/01/2014 Pakistan |
| 3.Mr.D.P.C.Swarnasiri | Capacity building program equipment and
Technology for Processing and value addition to
Agricultural products at small scale\Rural level.
09/02/2014 to 25/02/2014-India. |
| 4.Mr.W.M.C.B.Wasala | Workshop on Development of cold chainsystems
for perishable agrifoods products.
23/03/2014 to 29/03/2014,New Delhi,India, |
| 5.Mr.H.M.A.P.Rathnayake | Scaling up Rice fortification in Asia 2014
16/09/2014 to 19/09/2014 Bangkok,Thailand |
| 6.Mr.D.P.C.Swarnasiri | Workshop on Innovative postharvest
management tools and Technologies for fruits
and vegetable products
03/11/2014 to 07/11/2014-Republic of China |
| 7.Dr.B.M.K.S.Thilakarathne | Short term training on agricultural research
Management (NAARM)
22/12/2014 to 02/01/2015 Hydrabad,India |

11. STAFF POSITION AS AT 31st DECEMBER 2014

Post	Name
Director	Dr. (Mrs). B.M.K.S. Thilakaratne BSc.Sp.(Agric. Food Sci.& Tech.) Sri Lanka, MSc.(Food Sci.& Tech.), Sri Lanka PhD.(Postharvest Tech. Horticulture), India Dip.in rice sciences(China) Dip.in Post harvest biologyof fruit and veg.(Israel)
Additional Director (R&TT)	Mr. D. P. C. Swarnasiri BSc. (Agric), Sri Lanka Dip. in Agric.(China) MSc. (Agric), Sri Lanka PGDM, Sri Lanka
Additional Director (Admn & Finance)	Mr. R.K.A.P. Ramanayake B.Sc. Management (Sri Lanka), Licentiate Certificate ICA, MIPFDA
Principal Mechanical Engineer	Mrs. D. P. Senanayake B.Sc. Mech. Eng. (Sri Lanka) M. Phil.Chem. Eng (Sri Lanka) AM(IESL)
Senior Mechanical Engineer	Mr.H.M.A.P.Rathnayake B.Sc. Prod.. Eng. (Sri Lanka) M.Tech in Agriculture process Engineering (INDIA) AM(IESL)
Senior Research Officer	Dr. D.M.C.C.Gunathilake BSc.Sp.(Agric.Eng), Sri Lanka MSc. (Agric. Eng.), Sri Lanka PhD. (Process & Food Eng.), India NDT (Agric), Sri Lanka, ASAE (USA)
Senior Research Officer	Mrs. W.A H. Champa BSc. Sp. (Horticulture), Sri Lanka M.Phil (Crop Sci.), Sri Lanka
Research Officer	Mr. W.M.C.B. Wasala B.Sc. Sp. Agric. (Sri Lanka)
Mechanical Engineer	Mr. B.D.M.P. Bandara Dissanayake BSc. (Eng.) Sri Lanka, M.Eng.(Processing & Food Eng.) India, AMIE(Sri Lanka)
Research Officer	Mrs. K.G.L.R. Jayathunge B.Sc. Sp. Agric. (Sri Lanka)

M.Phil. Food Sci.& Tech. (Sri Lanka)

Research Officer

Mrs. R.M.R.N.K. Rathnayake
BSc.Sp. (Botany), Sri Lanka
MSc. (Postharvest Tech. of Fruit & Vegetables),
Sri Lanka

Senior Research Officer

Dr. (Mrs.) R.M.N.A. Wijewardane
BSc. (Agric.) Sri Lanka,
MSc. (Agric.) Sri Lanka,
PhD. (Horticulture postharvest Technology),
India

Research Officer

Mr. C.R. Gunawardane
B.Sc. Special Chemistry (Sri Lanka)

Senior Mechanical Engineer

Mr. T.M.R. Dissanayake
BSc. (Eng.), Sri Lanka
MEng.(India), AMIE (Sri Lanka)

Research Officer

Mrs. H.S. Jayawardane
BSc. (Applied Sci.), Sri Lanka.
MSc. (Food Sci. & Tech.)

Extension Officer

Mr. P.G. Lalith Wasantha
B.Sc. Sp.Agric. (Sri Lanka)

Extension Officer

Mrs. C.A.K. Dissanayake
B.Sc.Sp. Agric. (Sri Lanka)
PGDipl. Agric.(Sri Lanka)

Mechanical Engineer

Mrs. D.M.Srima Priyangika Bandara
B.Sc. Chem. Eng.(Sri Lanka),
MEng Manf. Syst. Eng (Sri Lanka)

Extension Officer

Mr. M.M. Herath
B.Sc Sp. Agric. (Sri Lanka), Dip. in Counselling

Research officer

Mr.U.G.Chandrajith
B.Sc.(Sp.)Botany
MSc.Food Sc.& Tech

Accountant

Mr.I.M.N.P.Ilangasinghe
B.Com(Sp.)

Administrative Officer

Mr Janaka Subasinghe

Senior Laboratory Technician Mr. P.E.M.R. Palipane

Personal assistant to the Chairman Mrs.H.D.K.D.Wickramasinghe

Supporting staff:

Technical Officer	01
Draughtsman	01
Building Inspector	01
Management Assistant (Steno/ Typist)	01
Management Assistant (Typist (Sinhala / English)	03
Field Officer	03
Laboratory Assistant	03
Management Assistant	08
Hostel Keeper	01
Welder	01
Technician	01
Electrician	01
Mill Operator	02
Boiler Operator	02
Driver	08
Workshop Operator	01
Maintenance Assistant	05
Cook	01
Security Guard	06
Ronio Operator	01
Canteen Labourer	01
Seva Sahayaka	01
Sanitary Labourer	01

Summary of Research work

Name	position	Research/development project	Reference page no of the Annual Report
Dr. (Mrs). B.M.K.S. Thilakaratne	Director	1.Overall administrative work 2. Published research Chandrajith.,U.G.,Bandara.,D.M.S.P.,JayathungeK.G.L.R., Thilakaratne.,B.M.K. S., 2014,Devedlopment and quality evaluation of instant rice noodles(Cup Noodle),Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp 5-8.	6,7,18,19 , 20

		2. Jayawardene., H.S., Thilakaratne., B.M.K.S., 2014, Development of a rice flour based deep fried cracker and evaluation of its storability, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp 9-3. 3. Thilakaratne., B.M.K.S., Arachchi., M. K.U., Wimalasiri., K.M.S., Wijesinghe., D. G.N.G., 2014, Development of dehydrated Murunga leaves fortified Nutri-mix, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp14-18 4. Thilakaratne., B.M.K.S., Gunasekara., A. A.M.T., Jayawardene., N.W.I.A., Ginigaddara., G.A.S., 2014, Development of Murunga leaves (<i>Moringa Oleifera</i>) based bread spread, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp33-41 5. Gunawardhane., C.R., Wasala W.M.C.B., Dissanayake., C.A.K., Wijewardene., R.M.N.A., Chandrajith., U.G., Thilakaratne., B.M.K.S., 2014, Use of packaging for vegetable transportation on main supply chains in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp52-56 6. Wijewardene., R.M.N.A., Senevirathne., G.D., Jayawardana., N.W.I.A., Dissanayake., T.M.R., Wasala W.M.C.B., Thilakaratne., B.M.K.S., 2014, Reduction of postharvest losses in leeks (<i>Allium Porum</i>) during transportation using wooden bulk packages., Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp57-61 7. Wasala W.M.C.B., Gunawardhane., C.R., Champa., W.A.H., Wijewardene., R.M.N.A., Rathnayake., R.M.R.N.K., Chandrajith., U.G., Thilakaratne., B.M.K.S., 2014, Assessment of postharvest losses and quality deterioration of banana fruits during supply chain activities in Sri Lanka, Proceedings of the International	
--	--	--	--

		Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp62-66 8.Champa .,W.A.H., Rathnayake.,R.M.R.N.K., Thilakaratne.,B. M.K.S., 2014,Development of an appropriate methodology for extending shelf life of cassava(<i>Manihot esculenta</i> Crantz), Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp73-78 9. Rathnayake.,R.M.R.N.K., Wasala W.M.C.B., Dissanayake.,C.A.K., Gunawardhane.,C.R., Chandrajith.,U.G., Thilakaratne., B. M.K.S., 2014, Effect of sodium bicarbonate and ammonium bicarbonate on anthracnose fruit rot of tomato caused by <i>Colletotrichum cocodes</i>, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp93-98 10.Bandara.,D.M.S.P.,Gunwardene .,C.R., Dissanayake.,T.M.R., Thilakaratne., B. M.K.S., Rathnayake., H.M.A.P.,The role of pre-geletinization on quality improvement of rice flour,2014 Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp99-103 11. Bandara,B.D.M.P.,Jayawardene.,H.S.,and Thilakathne.,B.M.K.S.,Design and Development of a low cost grain flour blending equipment. Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp140-145 12. 15. Rathnayake.,H.M.A.P.,Dissanayake .,T.M.R.,Bandara.,D.M.S.P., Senanayaka., D.P.,and Thilakerathne.,B.M.K.S.,Design Development of an energy efficient vibrated four shifter for rice flour industry, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp136-139 13. Rathnayake.,H.M.A.P., Senanayaka.,D.P., Bandara., B.D.M.P.,Bandara.,D.M.S.P., Palipane.,K.B. and Thilakerathne.,	
--	--	--	--

		B.M.K.S., Evaluation of medium scale IPHT maize treasher, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp151-154 14.Senanayaka.,D.P.,Rathnayake.,H.M.A.P.,Thilakerathne.,B.M.K.S.,Bandara.,B.D.M.P., and Dissanayake.,T.M.R.,Evaluation of rasp bar mill for size reduction of maize.Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp155-159 15 Wasala.,W.M.C.B.Dissanayake.,C.A.K.,Gunawardene.,CR.,Wijewardene.,R.M.N.A., Gunathilake,D.M.C.C.,Thilakerathne.,B.M.K.S.,2014,Sensibility and boring Ability of rice Weevil(Sitophilus alyzoe)and lesser grain borer(Rhizopertha dominica) for insecticide incorporated Grain Storage Bags,Proceedings of international symposium on Agriculture and Environment,University of Ruhuna,pp51-54 16.Bandara B.D.M.P., Gunawarrdana C.R., Senanayake D.P., Thilakarathne B.M.K.S., Design and development of a small scale paddy dryer, Proceedings, International Symposium on Agriculture & Environment(ISAE 2014), University of Ruhuna, Sri Lanka., pp 347-349. 17.Bandara B.D.M.P., Gunawarrdana C.R., Senanayake D.P., Thilakarathne B.M.K.S., Development and Evaluation of a Batch type Maize Dryer, Proceedings, International Symposium on Agriculture & Environment (ISAE 2014), University of Ruhuna, Sri Lanka., pp 351-353 18.Wasala.,W.M.C.B.,Dissanayake.,C.A.K.,Dharmasena.,D.A.N.,Gunawardene.,C.R.,Dissanayake.,T.M.R, and Thilakarathne.,B.M.K.S., 2014, Postharvest losses, current issues and Demand for Postharvest Technologies for Loss Management in the Main Banana Supply Chains in Sri Lanka, Journal of Postharvest Technology,02(01) 19. Wijewardene.,R.M.N.A.,Jayawardane.,H.S., WasalaW.M.C.B., Thilakarathne., B.M.K.S., 2014,Formulation and quality evaluation of instant drink prepared from	
--	--	---	--

		dehydrated bael(Aegle marmelos)fruit powder,Proceedings of Internatinal Symposium on Agriculture and Environment, Faculty of Agriculture, University of Ruhunu, 29 th Nov.	
Mr. D. P. C. Swarnasiri	Additional Director	a)Overall Research and Technology Transfer activities such as Research ,Training, Extension, Exhibition and Consultancy b)Published reports 1 5. Swarnasiri.,D.P.C.,2014, Quality Evaluation of locally produced rice available in the open market of Sri Lanka: A case study 2012, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp42-47.	6,7,18
Mrs. D. P. Senanayake	Principal Mechanical Enginner	1)Research Project Design and development of finger millet de-stoning machine Published research: 1.Rathnayake.,H.M.A.P., Senanayaka.,D.P., Bandara.,B.D.M.P.,Bandara.,D.M.S.P., Palipane., K.B. and Thilakerathne., B.M.K.S., 2014, of medium scale IPHT maize thresher, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp151-154 2.Senanayaka.,D.P.,Rathnayake.,H.M.A.P., Thilakerathne.,B.M.K.S.,Bandara.,B.D.M.P., and Dissanayake.,T.M.R.,Evaluation of rasp bar mill for size reduction of maize. Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp155-159 3.Dissanayake .,T.M.R., Bandara., D.M.S.P., Rathnayake.,H.M.A.P.,Senanayaka.,D.P.,2014, Development of continuous type paddy cooker, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp132-135 4.Rathnayake.,H.M.A.P.,Dissanayake .,T.M.R., Bandara.,D.M.S.P., Senanayaka.,D.P.,and Thilakerathne.,B.M.K.S.,2014, Design	6,7,19,20

		Development of an energy efficient vibrated four shifter for rice flour industry, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp136-139 5.Senanayaka.,D.P.,Rathnayake.,H.M.A.P., Bandara.,B.D.M.P., and Dissanayake., T.M.R., Development and testing of pedal-cum-motor operated paddy cleaner, . Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp146-150 6.Bandara B.D.M.P., Gunawarrdana C.R., Senanayake D.P., Thilakarathne B.M.K.S., Design and development of a small scale paddy dryer, Proceedings, International Symposium on Agriculture & Environment(ISAE 2014), University of Ruhuna, Sri Lanka., pp 347-349. 7.Bandara B.D.M.P., Gunawarrdana C.R., Senanayake D.P., Thilakarathne B.M.K.S., Development and Evaluation of a Batch type Maize Dryer, Proceedings, International Symposium on Agriculture & Environment (ISAE 2014), University of Ruhuna, Sri Lanka., pp 351-353	
Mr. H.M.A.P. Ratnayake	Senior Mechanical Enginner	a)Research Projects: i) Effluent management of rice processing industry. 2.Development Projects: Establishment and Development of Rice mills to produce High Quality Rice 3.Published reports 1.Rathnayake.,H.M.A.P., Senanayaka.,D.P., Bandara.,B.D.M.P.,Bandara.,D.M.S.P., Palipane., K.B. and Thilakerathne., B.M.K.S., of medium scale IPHT maize treasher, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp151-154 2.Senanayaka.,D.P.,Rathnayake.,H.M.A.P., Thilakerathne.,B.M.K.S.,Bandara.,B.D.M.P., and Dissanayake.,T.M.R.,Evaluation of rasp bar mill for size reduction of maize. Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri	6,7,19,20

		Lanka ,pp155-159 3.Dissanayake .,T.M.R., Bandara., D.M.S.P., Rathnayake.,H.M.A.P.,Senanayaka.,D.P.,2014, Development of continuous type paddy cooker, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp132-135 4.Rathnayake.,H.M.A.P.,Dissanayake .,T.M.R., Bandara.,D.M.S.P., Senanayaka.,D.P.,and Thilakerathne.,B.M.K.S.,2014,Design Development of an energy efficient vibrated four shifter for rice flour industry, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp136-139 5.Senanayaka.,D.P.,Rathnayake.,H.M.A.P. ,Bandara.,B.D.M.P., and Dissanayake., T.M.R., Development and testing of pedal-cum-motor operated paddy cleaner, . Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp146-150 6 13. Bandara.,D.M.S.P.,Gunwardene .,C.R.,Dissanayake.,T.M.R., Thilakarathne., B. M.K.S.,Rathnayake.,H.M.A.P.,The role of pre-geletinization on quality improvement of rice flour,2014 Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp99-103.	
Dr. D.M.C.C.Gunathilake	Senior Research officer	1)Research project i)Evaluation of handling practices and effect of hermetic conditions of cocons for storage of Soyabeans 3)Private funded project: Bio-Efficiency Insecticide Incorporated Bags on Storage Pest under Sri Lankan Conditions 5)Published projects 1.Gunathilake.,D.M.C.C.,Palipane.,K.B.,2014, Evaluation of big onion size grading machine, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp67-72 Wasala.,W.M.C.B.Dissanayake.,C.A.K., Gunawardene.,CR.,Wijewardene.,R.M.N.A.	6,7, 18,19

		2. Gunathilake, D.M.C.C., Thilakerathne., B. M.K.S., 2014, Sensibility and boring Ability of rice Weevil (<i>Sitophilus oryzae</i>) and lesser grain borer (<i>Rhizopertha dominica</i>) for insecticide incorporated Grain Storage Bags, Proceedings of international symposium on Agriculture and Environment, University of Ruhuna, pp51-54	
Dr. (Mrs.) W.A H. Champa	Senior Research officer	5) Published research: 1. Wasala W.M.C.B., Gunawardhane., C.R., Champa., W.A.H., Wijewardene., R.M.N.A., Rathnayake., R.M.R.N.K., Chandrajith., U.G., Thilakaratne., B.M.K.S., 2014, Assessment of postharvest losses and quality deterioration of banana fruits during supply chain activities in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka, pp62-66 2. Champa., W.A.H., Rathnayake., R.M.R.N.K., Thilakaratne., B. M.K.S., 2014, Development of an appropriate methodology for extending shelf life of cassava (<i>Manihot esculenta</i> Crantz), Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka, pp73-78 3. Champa., W.A.H., Gill., M.I.S., Mahajan., B.V.C., Arora., N.K., Bedi., S., 2014, Preharvest foliar sprays of salicylic acid enhance berry quality of table grapes (<i>Vitis vinifera</i> L.) cv. Flame seed less, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka, pp88-92	18,19
Mr. W.M.C.B. Wasala	Research officer	1) Research Project i) Evaluation of silo system for bulk storage of paddy 4) Private funded project: Bio-Efficiency Insecticide Incorporated Bags on Storage Pest under Sri Lankan Conditions b) Published research 1) Wasala., W.M.C.B. Dissanayake., C.A.K., Gunawardhane., C.R., Wijewardene., R.M.N.A.	6,7, 18,19 20

		Gunathilake,D.M.C.C.,Thilakerathne.,B.M.K.S., 2014,Sensitivity and boring ability of rice Weevil(<i>Sitophilus oryzae</i>)and lesser grain borer(<i>Rhizopertha dominica</i>) for insecticide incorporated grain storage bags, Proceedings of international symposium on Agriculture and Environment, University of Ruhuna,pp51-54 2.Gunawardhane.,C.R.,Wasala W.M.C.B., Dissanayake.,C.A.K., Wijewardene.,R.M.N.A., Chandrajith.,U.G., Thilakaratne.,B.M.K.S., 2014,Use of safe packaging for vegetable transportation on main supply chains in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp52-56 3.Wijewardene.,R.M.N.A.,Senevirathne.,G.D.,Jayawardana.,N.W.I.A., Dissanayake.,T.M.R., Wasala W.M.C.B., Thilakaratne.,B.M.K.S.,2014, Reduction of postharvest losses in leeks(<i>Allium porum</i>)during transportation using wooden bulk packages., Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp57-61 4. Wasala.,W.M.C.B.,Dissanayake.,C.A.K., Dharmasena.,D.A.N.,Gunawardene.,C.R.,Dissanayake.,T.M.R,and Thilakaratne.,B.M.K.S., 2014, Postharvest losses, current issues and Demand for Postharvest Technologies for Loss Management in the Main Banana Supply Chains in Sri Lanka, Journal of Postharvest Technology,02(01) 5. Wasala W.M.C.B.,Gunawardhane.,C.R., Champa .,W.A.H., Wijewardene.,R.M.N.A., Rathnayake.,R.M.R.N.K., Chandrajith.,U.G., Thilakaratne.,B.M.K.S.,2014, Assessment of postharvest losses and quality deterioration of banana fruits during supply chain activities in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp62-66 6. Rathnayake.,R.M.R.N.K.,Wasala W.M.C.B	
--	--	---	--

		., Dissanayake.,C.A.K., Gunawardhane.,C.R., Chandrajith.,U.G., Thilakaratne., B. M.K.S.,2014, Effect of sodium bicarbonate and ammonium bicarbonate on anthracnose fruit rot of tomato caused by Colletotrichum cocodes, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp93-98 7. Wijewardene.,R.M.N.A.,Jayawardane.,H. S., Wasala W.M.C.B., Thilakaratne., B. M.K.S., 2014,Formulation and quality evaluation of instant drink prepared from dehydrated bael(<i>Aegle marmelos</i>)fruit powder,Proceedings of Internatinal Symposium on Agriculture and Environment, Faculty of Agriculture, University of Ruhunu, 29 th Nov.	
Mr. B.D.M.P. Bandara Dissanayake	Mechanical Engineer	1)Research project; 1)Evaluation of losses by combine harvesters used for paddy harvesting 2)Development Project Improvement of rice flour milling industry. 3)Private funded project: Development of low cost Sesame peeling machine 5)publish research: 1.Bandara.,B.D.M.P.,Jayawardene.,H.S.,and Thilakathne.,B.M.K.S.,Design and Development of a low cost grain flour blending equipment. Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp140-145 2.Bandara B.D.M.P., Gunawarrdana C.R., Senanayake D.P., Thilakarathne B.M.K.S., Design and development of a small scale paddy dryer, Proceedings, International Symposium on Agriculture & Environment(ISAE 2014), University of Ruhuna, Sri Lanka., pp 347-349. 3.Bandara B.D.M.P., Gunawarrdana C.R., Senanayake D.P., Thilakarathne B.M.K.S., Development and Evaluation of a Batch type Maize Dryer, Proceedings, International Symposium on Agriculture & Environment (ISAE 2014), University of Ruhuna, Sri Lanka., pp 351-353 4.Chandrajith U.G., Gunathilake D.M.C.C., Bandara B.D.M.P., Swarnasiri D.P.C.,	6,7,19,20

		Effect of Harvesting Paddy by Combine Harvester on Seed Germination, Proceedings, International Symposium on Agriculture & Environment (ISAE 2014), University of Ruhuna, Sri Lanka., pp 365-367 5.Rathnayake.,H.M.A.P., Senanayaka.,D.P., Bandara.,B.D.M.P.,Bandara.,D.M.S.P., Palipane., K.B. and Thilakerathne., B.M.K.S., 2014, of medium scale IPHT maize thresher, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp151-154 6.Senanayaka.,D.P.,Rathnayake.,H.M.A.P., Thilakerathne.,B.M.K.S.,Bandara.,B.D.M.P., and Dissanayake.,T.M.R.,Evaluation of rasp bar mill for size reduction of maize. Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp155-159 7.Senanayaka.,D.P.,Rathnayake.,H.M.A.P., Bandara.,B.D.M.P., and Dissanayake., T.M.R., Development and testing of pedal-cum-motor operated paddy cleaner, . Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp146-150	
Mrs. K.G.L.R. Jayathunge	Research officer	On study leave Published research: Chandrajith.,U.G.,Bandara.,D.M.S.P.,JayathungeK.G.L.R.,Thilakarathne.,B.M.K.S.,2014,Development and quality evaluation of instant rice noodles(Cup Noodle),Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp 5-8.	18
Mrs. R.M.R.N.K. Rathnayake	Research officer	On study leave b)Published research ; 1.WasalaW.M.C.B.,Gunawardhane.,C.R.,Champa .,W.A.H., Wijewardene., R.M.N.A., Rathnayake.,R.M.R.N.K., Chandrajith.,U.G., Thilakarathne., B.M.K.S.,2014, Assessment of postharvest losses and quality deterioration of banana fruits during supply chain activities in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp62-66	18,19

		2. Rathnayake.,R.M.R.N.K., Wasala W.M.C .B., Dissanayake.,C.A.K., Gunawardhane.,C.R., Chandrajith.,U.G., Thilakaratne., B. M.K.S.,2014, Effect of sodium bicarbonate and ammonium bicarbonate on anthracnose fruit rot of tomato caused by Colletotrichum cocodes, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp93-98. 3. Champa .,W.A.H., Rathnayake., R.M.R.N.K., Thilakaratne.,B. M.K.S., 2014,Development of an appropriate methodology for extending shelf life of cassava(Manihot esculenta Crantz), Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp73-78.	
Mr. C.R. Gunawardane	Research officer	1)Research project i)Study of feasibility of safe packaging for fruits and vegetables transportation 2)Development project ii) Initiation of fruit-based products manufacturing micro enterprises at rural level b)Published research; 1 Wasala.,W.M.C.B.Dissanayake.,C.A.K., Gunawardene.,CR., Wijewardene.,R.M.N. A., Gunathilake,D.M.C.C.,Thilakerathne.,B.M. K.S.,2014,Sensibility and boring Ability of rice Weevil(Sitophilus alyzoe)and lesser grain borer(Rhizopertha dominica) for insecticide incorporated Grain Storage Bags,Proceedings of international symposium on Agriculture and Environment,University of Ruhuna,pp51-54). 2.Bandara B.D.M.P., Gunawarrdana C.R., Senanayake D.P., Thilakarathne B.M.K.S., Design and development of a small scale paddy dryer, Proceedings, International Symposium on Agriculture & Environment(ISAE 2014), University of Ruhuna, Sri Lanka., pp 347-349. 3.Bandara B.D.M.P., Gunawarrdana C.R., Senanayake D.P., Thilakarathne B.M.K.S., Development and Evaluation of a Batch type Maize Dryer, Proceedings,	6,7,18,6,7, 19,21

		International Symposium on Agriculture & Environment (ISAE 2014), University of Ruhuna, Sri Lanka., pp 351-353 4. Gunawardhane., C.R., Wasala W.M.C.B., Dissanayake., C.A.K., Wijewardene., R.M.N.A., Chandrajith., U.G., Thilakaratne., B.M.K.S., 2014, Use of packaging for vegetable transportation on main supply chains in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp52-56 5. Wasala., W.M.C.B., Dissanayake., C.A.K., Dharmasena., D.A.N., Gunawardene., C.R., Dissanayake., T.M.R., and Thilakaratne., B.M.K.S., 2014, Postharvest losses, current issues and Demand for Postharvest Technologies for Loss Management in the Main Banana Supply Chains in Sri Lanka, Journal of Postharvest Technology, 02(01) 6. Wasala W.M.C.B., Gunawardhane., C.R., Champa ., W.A.H., Wijewardene., R.M.N.A., Rathnayake., R.M.R.N.K., Chandrajith., U.G., Thilakaratne., B.M.K.S., 2014, Assessment of postharvest losses and quality deterioration of banana fruits during supply chain activities in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp62-66 7. Rathnayake., R.M.R.N.K., Wasala W.M.C.B., Dissanayake., C.A.K., Gunawardhane., C.R., Chandrajith., U.G., Thilakaratne., B. M.K.S., 2014, Effect of sodium bicarbonate and ammonium bicarbonate on anthracnose fruit rot of tomato caused by Colletotrichum cocodes, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp93-98 8. 13. Bandara., D.M.S.P., Gunwardene ., C.R., Dissanayake., T.M.R., Thilakaratne., B. M.K.S., Rathnayake., H.M.A.P., The role of pre-geletinization on quality improvement of rice flour, 2014 Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp99-103	
--	--	---	--

Dr. (Mrs.) R.M.N.A. Wijewardane	Senior Research officer	1)Research projects i. Application of Polysaccharide based Composite Film Wax Coating for Shelf Life Extension of Guava (var. Bangkok Giant) ii. Development of polysaccharide-lipid based composite wax formulation to enhance the storage quality of orange 2)Development Project: Improvement of shelf life of fruits and Modernization of fruit stalls 5)Published projects Wasala., W.M.C.B.Dissanayake., C.A. K., Gunawardene., CR., Wijewardene., R. M.N.A., Gunathilake, D.M.C.C., Thilakerathne., B.M.K.S., 2014, Sensibility and boring Ability of rice Weevil (Sitophilus aryzoe) and lesser grain borer (Rhizopertha dominica) for insecticide incorporated Grain Storage Bags, Proceedings of international symposium on Agriculture and Environment, University of Ruhuna, pp51-54 2. Gunawardhane., C.R., Wasala W.M.C.B., Dissanayake., C.A.K., Wijewardene., R.M.N.A.., Chandrajith., U.G., Thilakarathne., B.M.K.S., 2014, Use of packaging for vegetable transportation on main supply chains in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka, pp52-56 3. Wijewardene., R.M.N.A., Senevirathne., G.D., Jayawardana., N.W.I.A., Dissanayake., T.M.R., Wasala W.M.C.B., Thilakarathne., B.M.K.S., 2014, Reduction of postharvest losses in leeks (Allium Porum) during transportation using wooden bulk packages., Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka, pp57-61 4. Wasala W.M.C.B., Gunawardhane., C.R., Champa., W.A.H., Wijewardene., R.M.N.A., Rathnayake., R.M.R.N.K.,	6,7,18,19 20
--	---	---	--------------------------------

		Chandrajith.,U.G., Thilakaratne., B.M.K.S.,2014, Assessment of postharvest losses and quality deterioration of banana fruits during supply chain activities in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp62-66 5. Wijewardene.,R.M.N.A., Jayawardane.,H .S., Wasala W.M.C.B., Thilakaratne., B. M.K.S., 2014, Formulation and quality evaluation of instant drink prepared from dehydrated bael (Aegle marmelos) fruit powder, Proceedings of International Symposium on Agriculture and Environment, Faculty of Agriculture, University of Ruhunu, 29 th Nov.	
Mr. T.M.R. Dissanayake	Senior Mechanical Engineer	1) Research projects: i Enhancement of Electrical Energy efficiency of Sri Lankan Rice Mills 2) Private funded project: a) Development of a mobile dryer for freshly harvested paddy. 5) Published Research: 1. Bandara.,D.M.S.P., Gunwardene .,C.R., Didssanayake.,T.M.R., Thilakaratne., B.M.K.S., Rathnayake.,H.M.A.P., The role of pre-geletinization on quality improvement of rice flour, 2014 Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp99-103 2. Dissanayake .,T.M.R., Bandara.,D.M.S.P., Rathnayake.,H.M.A.P., Senanayaka.,D.P., 2014, Development of continuous type paddy cooker, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp132 3. Rathnayake.,H.M.A.P., Dissanayake .,T.M.R., Bandara.,D.M.S.P., Senanayaka.,D.P., and Thilakerathna., B.M.K.S., 2014, Design Development of an energy efficient vibrated four shifter for rice flour industry, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp136-139	6,7,18,19 20

		4.Senanayaka.,D.P.,Rathnayake.,H.M.A.P., Bandara.,B.D.M.P., and Dissanayake., T.M.R., Development and testing of pedal-cum-motor operated paddy cleaner, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp146-150 5.Senanayaka.,D.P.,Rathnayake.,H.M.A.P., Thilakerathne.,B.M.K.S.,Bandara.,B.D.M.P. , and Dissanayake.,T.M.R.,Evaluation of rasp bar mill for size reduction of maize. Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp155-159 6.Wijewardene.,R.M.N.A.,Snevirathne., G.D.,Jayawardana.,N.W.I.A., Dissanayake., T.M.R., WasalaW.M.C.B., Thilakarathne.,B.M.K.S., 2014, Reduction of postharvest losses in leeks(<i>Allium Porum</i>)during transportation using wooden bulk packages., Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp57-61 7.Wasala.,W.M.C.B.,Dissanayake.,C.A.K., Dharmasena.,D.A.N.,Gunawardene.,C.R.,Dissanayake.,T.M.R.,and Thilakarathne.,B.M.K.S., 2014, Postharvest losses, current issues and Demand for Postharvest Technologies for Loss Management in the Main Banana Supply Chains in Sri Lanka, Journal of Postharvest Technology,02(01) 8.Bandara.,D.M.S.P.,Gunwardene .,C.R., Didssanayake.,T.M.R., Thilakarathne., B. M.K.S.,Rathnayake.,H.M.A.P.,The role of pre-geletinization on quality improvement of rice flour,2014 Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp99-103	
Mrs. H.S. Jayawardane	Research Officer	1)Research project a)Development of a vegetarian sausage 5)Published Research: 1.Jayawardene.,H.S.,Thilakarathne.,B.M.K.S., 2014, Development of a rice flour based deep fried cracker and evaluation of its storability, Proceedings of the International Research Symposium on Postharvest	6,18,19

		Technology, Institute of Post Harvest Technology, Sri Lanka ,pp 9-13. 2. Wijewardene.,R.M.N.A.,Jayawardane.,H.S., WasalaW.M.C.B., Thilakaratne., B. M.K.S., 2014,Formulation and quality evaluation of instant drink prepared from dehydrated bael(Aegle marmelos)fruit powder,Proceedings of Internatinal Symposium on Agriculture and Environment, Faculty of Agriculture, University of Ruhunu, 29 th Nov. 3. Bandara, B.D.M.P.,Jayawardene.,H.S., and Thilakathne., B.M.K.S., Design and Development of a low cost grain flour blending equipment. Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp140-145	
Mr. P.G. Lalith Wasantha	Extension Officer	1)Research project: Survey in the identification of mango postharvest related problems in Sri Lanka. 2)Development Projects: a)Improvement of shelf life of fruits and modernization of fruit stalls b)Conduction owner program for school canteen owners to popularize rice based products among school children c) initiation of rice products manufacturing micro-enterprises d)Conduction awareness programs for home science teachers and students on popularization of local foods. e)Development of spice processing plants in Sri Lanka f)Initiation of fruit based products manufacturing micro-enterprises at rural level. g)Rural level grain storage for food security.	
Mrs. C.A.K. Dissanayake	Extension Officer	1)Research project: a) Survey in the identification of mango postharvest related problems in Sri Lanka. 2)Development project: a)Improvement of shelf life of fruits and modernization of fruit stalls b)Conduction owner program for school canteen owners to popularize rice based products among school children c) initiation of rice products manufacturing micro-enterprises	6,7,18,19,20

		d)Conduction awareness programs for home science teachers and students on popularization of local foods. e)Development of spice processing plants in Sri Lanka f)Initiation of fruit based products manufacturing micro-enterprises at rural level. g)Rural level grain storage for food security. 5)Published Research: 1.Gunawardhane.,C.R.,WasalaW.M.C.B.,Dissanayake.,C.A.K., Wijewardene.,R.M.N.A., Chandrajith.,U.G., Thilakaratne.,B.M.K.S.,2014,Use of packaging for vegetable transportation on main supply chains in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp52-56 2.Wasala.,W.M.C.B.,Dissanayake.,C.A.K., Dharmasena.,D.A.N.,Gunawardene.,C.R.,Dissanayake.,T.M.R.,and Thilakarathne.,B.M.K.S., 2014, Postharvest losses, current issues and Demand for Postharvest Technologies for Loss Management in the Main Banana Supply Chains in Sri Lanka, Journal of Postharvest Technology,02(01) 3.Rathnayake.,R.M.R.N.K.,WasalaW.M.C.B., Dissanayake.,C.A.K., Gunawardhane.,C.R., Chandrajith.,U.G., Thilakaratne., B. M.K.S.,2014, Effect of sodium bicarbonate and ammonium bicarbonate on anthracnose fruit rot of tomato caused by Colletotrichum cocodes, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp93-983.	
Mrs. D.M.Srima Priyangika Bandara	Mechanical Enginner	1)Research project: Performance evaluation of screw type oil expeller for Mee seed and ground nut 2) Development project Introduction of spice processing industry at rural level 3)Private funded project Performance evaluation of a screw type oil expeller for extraction of sesame oil 5)Published project 1.Chandrajith.,U.G.,Bandara.,D.M.S.P.,JayathungeK.G.L.R.,Thilakaratne.,B.M.K.S.,2014,Devedlopment and quality evaluation of	6,7,19,20

		instant rice noodles(Cup Noodle),Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp 5-8. 2.Bandara.,D.M.S.P.,Gunwardene .,C.R.,Didssanayake.,T.M.R., Thilakerathne., B. M.K.S.,Rathnayake.,H.M.A.P.,The role of pre-geletinization on quality improvement of rice flour,2014 Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp99-103 3.Dissanayake .,T.M.R., Bandara., D.M.S.P., Rathnayake.,H.M.A.P., Senanayaka., D.P., 2014, Development of continuous type paddy cooker, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp132-135 4.Rathnayake.,H.M.A.P.,Dissanayake .,T.M.R.,Bandara.,D.M.S.P., Senanayaka.,D.P., and Thilakerathne.,B.M.K.S.,2014, Design Development of an energy efficient vibrated four shifter for rice flour industry, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp136-139 5. Rathnayake.,H.M.A.P., Senanayaka.,D.P., Bandara.,B.D.M.P.,Bandara.,D.M.S.P., Palipane.,K.B.and Thilakerathne., B.M.K.S., 2014,Evaluation of medium scale IPHT maize treasher, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp151-154	
Mr. M.M. Herath	Extension Officer	1)Research project: a)Survey in the identification of mango postharvest related problems in Sri Lanka. 2)Development Program: a)Improvement of shelf life of fruits and modernization of fruit stalls b)Conduction owner program for school canteen owners to popularize rice based products among school children c) initiation of rice products manufacturing micro-enterprises d)Conduction awareness programs for home science teachers and students on	

		popularization of local foods. e)Development of spice processing plants in Sri Lanka f)Initiation of fruit based products manufacturing micro-enterprises at rural level. g)Rural level grain storage for food security. h)"Dayata Kirula Development projects	
Mr.U.G.Chandrajith	Research officer	1)Research project i)Evaluation of losses by combine harvesters used for paddy harvesting 2)Development Project Initiation of Rice and Rice Based Products Manufacturing Micro Enterprises at Rural Areas 5)Published project: 1.Chandrajith.,U.G.,Bandara.,D.M.S.P.,JayathungeK.G.L.R.,Thilakaratne.,B.M.K.S., 2014,Devedlopment and quality evaluation of instant rice noodles(Cup Noodle),Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp 5-8. 2.Gunawardhane.,C.R.,WasalaW.M.C.B.,Dissanayake.,C.A.K.,Wijewardene.,R.M.N.A., Chandrajith.,U.G., Thilakaratne.,B.M.K.S., 2014,Use of packaging for vegetable transportation on main supply chains in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp52-56 3. WasalaW.M.C.B.,Gunawardhane.,C.R.,Champa .,W.A.H., Wijewardene., R.M.N.A., Rathnayake., R.M.R.N.K., Chandrajith.,U.G., Thilakaratne., B.M.K.S.,2014, Assessment of postharvest losses and quality deterioration of banana fruits during supply chain activities in Sri Lanka, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp62-66 4. Rathnayake.,R.M.R.N.K.,WasalaW.M.C.B., Dissanayake.,C.A.K., Gunawardhane.,C.R., Chandrajith.,U.G., Thilakaratne., B. M.K.S.,2014, Effect of sodium bicarbonate	6,7,18,19

		and ammonium bicarbonate on anthracnose fruit rot of tomato caused by Colletotrichum cocodes, Proceedings of the International Research Symposium on Postharvest Technology, Institute of Post Harvest Technology, Sri Lanka ,pp93-98	
Mr.N.Somakanthan	Extension Officer	2)Development Projects; a)Technology transfer on oil extraction for sesame. b)establishment and Development of Rice mills to produce high quality rice c)Conduction Owner program for School Canteen Owner to Popularize Rice Based Products Among school Children. d)Initiation of rice products manufacturing micro –enterprises e)Development of spice processing plants in Sri Lanka f)Initiation of fruit based products manufacturing micro- enterprises at rural level. g)Rural level grain storage for food security h)Improvement of rice flour milling industry.	

**INSTITUTE OF
POST HARVEST TECHNOLOGY**

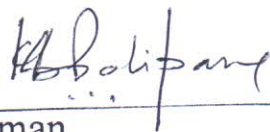
FINANCIAL STATEMENTS

**FOR THE YEAR ENDED
DECEMBER 31, 2014**

The Accounting policies on pages 01 to 02 and Notes on pages 07 to 28 form an integral part of these Financial Statements. The Board of Directors is responsible for the preparation and presentation of these Financial Statements which were approved by the Board of Directors and signed on their behalf.

Sgd

Chairman



Sgd

Director



Prof. K.B. PALIPANE Ph.D. New South Wales
CHAIRMAN
INSTITUTE OF POST HARVEST TECHNOLOGY
RESEARCH AND DEVELOPMENT CENTRE
JAYANTHI MAWATHA,
ANURADHAPURA.

1. Summary of Significant Accounting Policies.

1.1 General Accounting Policies

1.1.1 Compliance with the Sri Lanka Public Sector Accounting Standards.

1.1.2 Taxation

Liability for Income Tax.

1.2 Assets and Basis of their Valuation

1.2.1. Stocks

Stocks have been valued at FIFO Method

Stocks have been valued at the lowest cost or realizable value.

1.2.2 Fixed Assets

The cost of fixed assets is the cost of acquisition or construction together with the incidental expenses therein. The fixed assets are recorded at cost, less accumulated depreciation which is provided for, on the basis specified below.

Depreciation of fixed assets is provided from the preceding year of purchase or construction of assets. Depreciation of written off or disposed off assets are provided in the current year fully. To depreciate assets straight line method is adopted. Fixed assets are accounted when they are recorded in inventory books and fixed asset register.

1.2.3 Depreciation

Depreciation Rates have changed in the year 2004

	Useful life (Years)	Rate % per annum	New Rate % per annum
1. Building	40	2.5%	2.5%
2. Plant, machinery and equipment	13.3	7.5%	7.5%
3. Equipment	10	10%	10%
4. Furniture and Fittings	10	10%	10%
5. Electricity, & Fittings	10	10%	10%
6. Library Books	10	10%	10%
7. Vehicles	5	20%	20%
8. Telephone & Fittings	5		20%
9. Computers	4		25%
10. Agro – Farm	4		25%

In all cases the basis of depreciation is consistent with those of previous year. No depreciation provided for land.

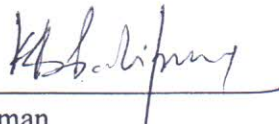
According to the decision of the Board of Directors on 21.1.2005, (Vide Board paper No. 172)

Utilization of capacity of Buildings and plant and machinery for Research and Development purpose and commercial purposes were categorized. Based on that decision depreciation of plant and machinery and buildings have been calculated since 2005.

For the current years depreciation rate of 33% of the total capacity of buildings and 45% of plant and machinery are to be considered. However, based on the actual number of days utilized for commercial purposes depreciation was calculated and the balance capacity was absorbed to Research and Development purposes.

1.3. Liabilities

As per the Gratuity Act. No. 12 of 1983 , Gratuity fund is Rs. 22,032,566.02 up to end of 31.12.2014

Sgd 
Chairman

Sgd 
Director

Sgd 
Accountant

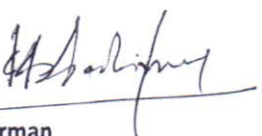
Prof. K.B. PALIPANE Ph.D. New South Wales
CHAIRMAN
INSTITUTE OF POST HARVEST TECHNOLOGY
RESEARCH AND DEVELOPMENT CENTRE
JAYANTHI MAWATHA,
ANURADHAPURA.

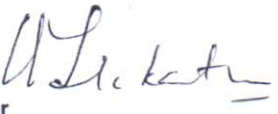
INSTITUTE OF POST HARVEST TECHNOLOGY

STATEMENT OF FINANCIAL POSITION AS AT DECEMBER 31, 2014

	Notes	2014 RS.	2013 RS.
ASSETS			
Current Assets			
Cash and cash equivalents	2	2,882,015.95	8,606,877.99
Receivables	3	5,173,157.39	4,217,267.12
Inventories	4	1,487,663.00	2,387,749.45
Prepayments	5	1,830,450.91	640,907.20
Other current assets	6	675.00	22,708.75
		11,373,962.25	15,875,510.51
Non-current assets			
Investments	7	50,000,000.00	50,000,000.00
Infrastructure, plant and equipment	8	15,171,765.84	15,041,538.47
Land and buildings	9	64,058,161.70	66,679,763.54
Intangible assets	10	7,840.00	7,840.00
Other non-current assets	11	9,903,499.07	10,699,342.96
		139,141,266.61	142,428,484.97
Total assets		150,515,228.86	158,303,995.48
LIABILITIES			
Current liabilities			
Payables	12	28,250,859.72	24,407,871.84
Employee benefits	13	22,032,566.02	18,670,156.53
		50,283,425.74	43,078,028.37
Non-current liabilities			
		-	-
Total liabilities		50,283,425.74	43,078,028.37
NET ASSETS/EQUITY		100,231,803.12	115,225,967.11

Prof. K.B. PALIPANE Ph.D. New South Wales
CHAIRMAN
 INSTITUTE OF POST HARVEST TECHNOLOGY
 RESEARCH AND DEVELOPMENT CENTRE
 JAYANTHI MAWATHA,
 ANURADHAPURA.

Sgd 
 Chairman

Sgd 
 Director

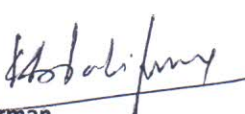
Sgd 
 Accountant

363

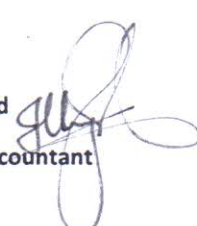
INSTITUTE OF POST HARVEST TECHNOLOGY

STATEMENT OF FINANCIAL PERFORMANCE FOR THE YEAR ENDED DECEMBER 31, 2014

		2014	2013
	Notes	RS.	RS.
REVENUE			
Transfers from general treasury	14	66,260,000.00	58,859,049.00
Transfers from other agencies	15	6,535,757.10	1,456,882.90
Other revenue	16	9,901,821.04	10,556,408.99
Total Revenue		82,697,578.14	70,872,340.89
EXPENSES			
Wages, salaries and employee benefits	17	61,038,189.68	53,015,408.01
Supplies and consumables used	18	12,370,178.03	15,497,292.09
Depreciation and amortization expense	19	9,132,063.24	8,924,733.45
Other expenses	20	17,611,032.13	9,967,427.02
Finance costs	21	35,100.70	34,807.40
Total expenses		100,186,563.78	87,439,667.97
Surplus/(deficit) for the period		(17,488,985.64)	(16,567,327.08)

Sgd 
Chairman

Sgd 
Director

Sgd 
Accountant

Prof. K.B. PALIPANE Ph.D. New South Wales
CHAIRMAN
INSTITUTE OF POST HARVEST TECHNOLOGY
RESEARCH AND DEVELOPMENT CENTRE
JAYANTHI MAWATHA,
ANURADHAPURA.

MAWATHA,
ADHAPURA.

INSTITUTE OF POST HARVEST TECHNOLOGY

STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED DECEMBER 31, 2014

Attributable to owners of the controlling entity										
				Notes	Initiate capital	Gov.grant	Foreign loan	Funds from Gen. Trea.	Accumulated surpluses/(deficitts)	Total net assets
					Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Balance at December 31, 2013 B/F					69,907,594.42	8,368,214.00	72,750,229.02	30,509,250.00	(63,814,498.68)	117,720,788.76
Change in net assets for 2014										-
Surplus / (Deficit) for the period									(17,488,985.64)	(17,488,985.64)
Balance at December 31, 2014 C/F					69,907,594.42	8,368,214.00	72,750,229.02	30,509,250.00	(81,303,484.32)	100,231,803.12

Sgd
Chairman

Sgd
Director

Sgd
Accountant

Prof. K.B. PALIPANE Ph.D. New South Wales
CHAIRMAN
INSTITUTE OF POST HARVEST TECHNOLOGY
RESEARCH AND DEVELOPMENT CENTRE
JAYANTHI MAWATHA,
ANURADHAPURA.

364

INSTITUTE OF POST HARVEST TECHNOLOGY

CASH FLOW STATEMENT FOR THE YEAR ENDED DECEMBER 31, 2014

		2014	2013
	Notes	RS.	RS.
CASH FLOWS FROM OPERATING ACTIVITIES			
Surplus /(Deficit)		(17,488,985.64)	(16,567,327.08)
Non - Cash Movements			
Depreciation		9,132,063.24	8,937,954.97
Effect through adjustments to the previous year	22	(177,075.12)	195,560.56
Interest Income		(5,124,463.42)	(7,596,981.48)
Interest Expenses			578,943.73
Increase/(Decrease) in payables	23	7,205,397.37	4,769,828.55
(Increase)/Decrease in other current assets	24	(1,929,011.26)	(510,989.37)
Net cash flows from operating activities		(8,382,074.83)	(10,193,010.12)
CASH FLOWS FROM INVESTING ACTIVITIES			
Purchase of plant, and equipment		(3,968,792.00)	(863,623.75)
(Increase)/Decrease non current assets	25	795,843.89	1,805,374.14
Net interest Received		5,124,463.42	7,018,037.75
Net cash from investing activities		1,951,515.31	7,959,788.14
CASH FLOWS FROM FINANCING ACTIVITIES			
Proceeds from borrowings		-	-
Repayment of borrowings		-	-
Net cash flows from financing activities		-	-
Net increase/(decrease) in cash equivalents		(6,430,559.52)	(2,233,221.98)
Cash and cash equivalents at beginning of period	26	2,658,047.62	4,891,269.60
Cash and cash equivalents at end of period	27	(3,772,511.90)	2,658,047.62

Sgd
Chairman

Prof. K.B. PALIPANE Ph.D. New South Wales
CHAIRMAN
INSTITUTE OF POST HARVEST TECHNOLOGY
RESEARCH AND DEVELOPMENT CENTRE
JAYANTHI MAWATHA,
ANURADHAPURA.

Sgd
Director

Sgd
Accountant

Notes	Year Ended 31 st December 2014 (Rs.)	Year Ended 31 st December 2013 (Rs.)
2 Cash & Cash equivalents		
Bank of Ceylon - Torinton	(74,312,238.61)	1,632,359.10
People's Bank -Anuradhapura	70,534,726.71	1,020,688.52
Patty Cash	5,000.00	5,000.00
National Saving Bank 1- 0005- 04-9129-2-Anuradhapura	2,614,099.84	2,497,425.41
National Saving Bank 1- 0001- 07-32087-Kollupitiya	4,040,428.01	3,451,404.96
	<u>2,882,015.95</u>	<u>8,606,877.99</u>
3 Receivables		
Debtors Control Account	506,027.50	1,249,535.35
Accrued Income	4,667,129.89	2,967,731.77
	<u>5,173,157.39</u>	<u>4,217,267.12</u>
3.1 Debtors Control Account		
Rice	-	100,183.75
By-product	-	6,069.50
Others	504,808.50	1,142,063.10
Sale -stole	1,219.00	1,219.00
	<u>506,027.50</u>	<u>1,249,535.35</u>
3.2 Accrued Income		
Genaral	1,231,516.52	2,887,436.40
Regional Economic Advancement Project 1 -Matale	49,354.70	49,354.70
Sri Lanka Council forAgricultural Research Policy	30,940.67	30,940.67
Rcievables for other field crops	3,355,318.00	
	<u>4,667,129.89</u>	<u>2,967,731.77</u>
4 Inventries		
Noodles	31,277.40	321,297.54
Rice Mill -Rice	1,606.50	1,606.50
Stores -Paddy	34,119.62	43,511.42
Research projects	287,508.00	415,468.00
Machinery - Raw material	8,031.00	70,369.25
Machinery	978,745.00	519,745.00
Diesel - Factory	111,434.48	111,434.48
- Generator	34,941.00	34,941.00
Packing material - Noodles	-	869,376.26
	<u>1,487,663.00</u>	<u>2,387,749.45</u>
5 Prepayments		
Festival	107,500.00	141,594.03
Traveling	122,566.80	121,318.41
Half monthly	-	150.00
Interring Advance -General R&D	85,187.46	158,885.16
Interring Advance -General - Head Office	-	17,106.60
Special Salary Advane	-	201,853.00
Prepayments for Renovation of work shop	1,515,196.65	
	<u>1,830,450.91</u>	<u>640,907.20</u>

Notes		Year Ended 31 st December 2014 (Rs.)	Year Ended 31 st December 2013 (Rs.)
6 Other current assets			
Services		675.00	675.00
Other		-	22,033.75
		<u>675.00</u>	<u>22,708.75</u>
7 Investments - Deposits			
National Saving Bank 2- 0001- 20-90520 -Kollupitiya		10,000,000.00	10,000,000.00
National Saving Bank 2- 0001- 21-28152 -Kollupitiya		10,000,000.00	10,000,000.00
National Saving Bank 2- 0001- 21-28195 -Kollupitiya		10,000,000.00	10,000,000.00
National Saving Bank 2- 0001- 21-28187 -Kollupitiya		10,000,000.00	10,000,000.00
National Saving Bank 2- 0001-21-28179 -Kollupitiya		10,000,000.00	10,000,000.00
		<u>50,000,000.00</u>	<u>50,000,000.00</u>
8 Infrastructure, plant and equipment (8.1)		<u>15,171,765.84</u>	<u>15,041,538.47</u>
9 Land and building (9.1)		<u>64,058,161.70</u>	<u>66,679,763.54</u>
10 Patent Certificate for the production of "Rice Based Instant Soup Cube", inovated by Mrs Hemanthika Jayawardhana.			
11 Other Non - Current Assets			
Workers Loan		4,865,692.09	5,662,242.73
Workers Loan -Special		539,540.09	538,833.34
Work in Progress - Office Building		4,498,266.89	4,498,266.89
		<u>9,903,499.07</u>	<u>10,699,342.96</u>
Current Liabilities			
12 Payables			
Advances	12.1	1,237,039.76	947,345.62
Accrued Expenses	12.2	12,015,428.75	5,464,374.01
Deposits	12.3	121,820.00	461,939.00
Retention	12.4	761,060.17	3,322,988.22
Creditors Control Account	12.5	13,997,964.99	14,211,224.99
Reciepts in advance-Deyata kirula	12.6	117,546.05	
		<u>28,250,859.72</u>	<u>24,407,871.84</u>
12.1 Advances			
Suspense Account - Salary		-	2,819.58
Suspense Account - General		1,223,496.36	944,526.04
Specail Salary Advance		5,650.00	
Advance- General		7,893.40	
		<u>1,237,039.76</u>	<u>947,345.62</u>
12.2 Accrued Expenses			
Accrued Tax for Interest		122,640.36	161,478.72
Accrued Expenses - R & D		7,370,123.28	5,291,929.85
Accrued Expenses - Head office		23,535.11	10,835.44
Head Office creditor		130.00	130.00
Accrued Expenses-Other field crops		4,499,000.00	
		<u>12,015,428.75</u>	<u>5,464,374.01</u>

Notes	Year Ended 31 st December 2014 (Rs.)	Year Ended 31 st December 2013 (Rs.)
12.3 Deposits		
Contract Supplies	-	5,665.00
Tender - R&D	121,820.00	176,420.00
Tender - Head Office	-	279,854.00
	<u>121,820.00</u>	<u>461,939.00</u>
12.4 Retention		
Contract Works	282,505.78	2,773,480.65
Unpaid - salary	265,832.39	275,716.20
Unpaid - salary - Head office	200.00	200.00
Unpaid - wages	-	16,067.57
Cancelled cheques	73,250.00	118,251.80
Regional Economic Advancement Project 2 -Matale	139,272.00	139,272.00
	<u>761,060.17</u>	<u>3,322,988.22</u>
12.5 Creditors Control Account		
Other creditors	539,135.00	802,295.00
12.5.1 Plastic crates-Fund	9,251,445.95	9,201,545.95
Paboling Vassals-Fund	4,207,384.04	4,207,384.04
	<u>13,997,964.99</u>	<u>14,211,224.99</u>
12.5.1 Plastic crates-Fund		
Balance as at 01.01.2014	9,201,545.95	12,675,600.00
paid to ministry	-	4,527,624.05
	<u>9,201,545.95</u>	<u>8,147,975.95</u>
Plastic crates sales	49,900.00	1,053,570.00
	<u>9,251,445.95</u>	<u>9,201,545.95</u>
12.6 Reciepts in Advance		
Reciepts in advance - Deyata kirula	117,546.05	
	<u>117,546.05</u>	
13 Employee benefits		
Gratuity fund	22,032,566.02	18,670,156.53
	<u>22,032,566.02</u>	<u>18,670,156.53</u>

		Year Ended 31 st December 2014 (Rs.)	Year Ended 31 st December 2013 (Rs.)
14 Funds Received from General Treasury - Recurrent			
Income and expenditure Account		<u>66,260,000.00</u>	<u>58,859,049.00</u>
15 Funds Received from Other Agencies			
Daytakirula		1,036,939.10	1,456,882.90
Other field crops		5,355,318.00	
Private research project		<u>143,500.00</u>	
		<u>6,535,757.10</u>	<u>1,456,882.90</u>
16 Other Revenue			
Rice Sales Profit		-	(89,747.30)
Machinery Sales	16.2	257,861.75	63,859.98
Hostel Income	16.3	1,663,707.54	1,183,943.59
Training Program	16.4	521,376.43	758,346.00
Auditorium fees		442,850.00	244,275.00
House Rent		430,716.66	371,358.34
General Income		423,680.41	350,079.39
Consultancy fees	16.5	742,769.01	427,327.95
Sale of Publications		97,565.00	67,990.00
No Pay		101,535.82	26,400.73
farm		2,690.00	10,385.00
Vehicle damage Charges		-	10,917.31
Rice icecream sale	16.6	82,730.00	68,044.00
Interest Income	16.7	5,124,463.42	7,018,037.75
Charges -Agreement		3,000.00	4,800.00
Paddy Milling		-	40,391.25
Rice floor sales		<u>6,875.00</u>	
		<u>9,901,821.04</u>	<u>10,556,408.99</u>

16.2 Machinery Manufacturing Trading**Profit & Loss Account****Machinery Sales**

Machinery Sales Parboiling Vessels

404,000.00

Machinery Sales

0.00

bottle sealer

Other Machinery Sales

3,200.00

407,200.00

Machinery Cost Sales

Raw Material Balance as at 1.1.2014

70,369.25

Add: Purchases Raw material

87,000.00

157,369.25

For Research

157,369.25

Raw Materials Balance as at 31.12.2014

8,031.00

Machinery Manufacturing Cost C/F

149,338.25

Machinery Balance as at 1.1.2014

519,745.00

Machinery Manufacturing Cost B/F

149,338.25

669,083.25

Add: Purchases of Machineries

459,000.00

1,128,083.25

Machinery Balance as at 31.12.2014

978,745.00

Production Cost -Sale of Machinery

149,338.25

149,338.25

Profit

257,861.75

Note**Rs****Rs****16.3 Hostel Income**

Income

2,996,921.85

Expenditure

1,333,214.31

1,663,707.54

16.4 Training Program

Income

1,302,148.13

Expenditure

780,771.70

521,376.43

16.5 Consultancy fees

Income

1,029,189.00

Expenditure

286,419.99

742,769.01

16.6 Rice Icecream Sale

Income

118,040.00

Expenditure

35,310.00

82,730.00

	Rs	Rs
16.7 Interest Income		
National Saving Bank 1- 0005- 04-9129-2-Anuradhapura	127,235.35	
National Saving Bank 1- 0001- 07-32087-Kollupitiya	89,228.84	
National Saving Bank 2- 0001- 20-90520 -Kollupitiya	933,561.63	
National Saving Bank 2- 0001- 21-28152 -Kollupitiya	1,032,739.73	
National Saving Bank 2- 0001- 21-28195 -Kollupitiya	1,032,739.73	
National Saving Bank 2- 0001- 21-28187 -Kollupitiya	1,032,739.73	
National Saving Bank 2- 0001-21-28179 -Kollupitiya	1,032,739.73	5,280,984.74
With Holding Tax		
National Saving Bank 1- 0005- 04-9129-2-Anuradhapura	-	
National Saving Bank 1- 0001- 07-32087-Kollupitiya	6,205.79	
National Saving Bank 2- 0001- 20-90520 -Kollupitiya	74,684.92	
National Saving Bank 2- 0001- 21-28152 -Kollupitiya	82,619.18	
National Saving Bank 2- 0001- 21-28195 -Kollupitiya	82,619.18	
National Saving Bank 2- 0001- 21-28187 -Kollupitiya	82,619.18	
National Saving Bank 2- 0001-21-28179 -Kollupitiya	82,619.18	411,367.43
Banks Net Interest Income		4,869,617.31
Interest Income Other		
Special advance Interest	8,234.48	
Distress Loan Interest	221,668.77	
Special Loan Interest	24,942.86	254,846.11
		5,124,463.42

	Note	Head Office Rs	Research and Development Centre Rs	Year Ended 31 st December 2014 Rs	Year Ended 31 st December 2013 Rs
EXPENSES					
17 Wages,salaries and employee benefits					
Salaries & Wages-monthly paid staff		3,193,612.69	42,939,274.53	46,132,887.22	36,792,111.18
Daily paid staff		-	1,337,457.72	1,337,457.72	3,808,020.27
E.P.F.		344,012.58	4,889,234.93	5,233,247.51	3,795,199.73
E.T.F.		87,368.59	1,220,444.90	1,307,813.49	942,375.75
Overtime and Holiday Pay		-	1,770,467.37	1,770,467.37	1,412,586.16
Other allowance		-	531,750.00	531,750.00	488,711.94
Incentives		-	260,010.88	260,010.88	200,363.55
Gratuity		-	4,464,555.49	4,464,555.49	5,576,039.43
		<u>3,624,993.86</u>	<u>57,413,195.82</u>	<u>61,038,189.68</u>	<u>53,015,408.01</u>
18 Supplies and consumables used					
Printing and Stationery		22,102.98	668,008.25	690,111.23	530,552.40
Office Requisites, Sundry expenses		84,993.28	1,265,337.50	1,350,330.78	1,063,570.33
Consumable for Research projects		-	318,698.27	318,698.27	249,944.52
Running expenses of Hostel and kitchen		-	305,022.75	305,022.75	300,806.00
Research Projects		-	913,536.39	913,536.39	929,994.04
Running expenses vehicles		1,080,635.70	2,605,716.12	3,686,351.82	3,247,345.13
Vehicles maintenance		863,896.03	1,709,186.26	2,573,082.29	2,048,961.87
Buildings and Structures		550.00	2,136,055.80	2,136,605.80	6,636,563.30
Buildings and Structures-Special		-	-	-	0.00
Machinery Maintanance		11,300.00	385,138.70	396,438.70	489,554.50
Farm Research Expenses		-	-	-	0.00
		<u>2,063,477.99</u>	<u>10,306,700.04</u>	<u>12,370,178.03</u>	<u>15,497,292.09</u>

Notes

Year Ended
31 st December
2014 (Rs.)

Year Ended
31 st December
2013 (Rs.)

19 Depreciation

19.1

9,132,063.24

8,924,733.45

19.1 Depreciation

Building

1,636,870.41

Plant, machinery and equipment

1,959,970.29

Rice Based Products

- Building

1,015,902.18

Equipment

473,007.35

Furniture and Fittings

568,758.39

Electricity & Fittings

25,466.30

Library Books

60,801.00

Computers

386,554.50

Telephone & Fittings

35,612.82

Vehicles

2,969,120.00

9,132,063.24

20 Other Expenses

Traveling expenses-Domestic

23,493.50

1,060,753.72

1,084,247.22

1,051,571.19

Traveling expenses-Foreign

350,579.50

328,210.57

678,790.07

355,457.74

Staff tea

23,787.00

534,770.00

558,557.00

626,126.75

Periodicals, journals and news papers

62,665.00

37,870.00

100,535.00

90,321.50

Seminars

-

69,689.50

69,689.50

26,002.00

Training Programs

52,932.00

685,121.77

738,053.77

612,759.95

Entertainment

-

275,542.08

275,542.08

337,261.36

Contract Labour

-

156,050.00

156,050.00

27,550.00

Welfare

-

-

-

0.00

Insurance and licenses

206,007.12

600,078.05

806,085.17

462,842.78

Telecommunication

198,928.95

834,637.99

1,033,566.94

867,107.06

Postal charges

907.00

96,701.00

97,608.00

75,072.00

Electricity

-

1,251,922.23

1,251,922.23

1,241,728.59

Water,

-

931,701.87

931,701.87

654,392.17

Rent

-

234,552.45

234,552.45

216,204.00

Rates and Taxes

-

285,715.56

285,715.56

345,822.48

Exhibition

9,287.33

927,332.74

936,620.07

948,800.63

Publication

-

-

-

150,818.92

Human Resources Development	-	260,300.00	260,300.00	161,080.00
Audit fees	-	282,760.00	282,760.00	250,000.00
Farm Expenses	-	-	-	9,625.00
Deyata Kirula	-	1,036,939.10	1,036,939.10	1,456,882.90
Research Symopsium	20.1	168,031.90	168,031.90	0.00
Other field crops		5,355,318.00	5,355,318.00	
Loss on noodles sales		260,538.14	260,538.14	
Loss on stock due to flood	20.2	1,007,908.06	1,007,908.06	
		<u>928,587.40</u>	<u>16,682,444.73</u>	<u>9,967,427.02</u>
20.1 Expenditure for Research Symposium		1,688,005.25		
Reciepts for Research Symposium		1,519,973.35		
21 Finance Costs		-	35,100.70	34,807.40
		<u>35,100.70</u>	<u>35,100.70</u>	<u>34,807.40</u>

374

Notes		Year Ended	
		31 st December 2014 (Rs.)	31 st December 2013 (Rs.)
22	Defferance of inactive balance set off	149,661.80	
	Balance of previous year adjustments	27,413.32	
		<u>177,075.12</u>	
23	Payables		
	Advances	1,237,039.76	947,345.62
	Accrued Expenses	12,015,428.75	5,464,374.01
	Deposits	121,820.00	461,939.00
	Retention	761,060.17	3,322,988.22
	Creditors Control Account	13,997,964.99	14,211,224.99
	Reciepts in advance	117,546.05	
	Gratuity fund	22,032,566.02	18,670,156.53
		<u>50,283,425.74</u>	<u>43,078,028.37</u>
	Balance as at 1.1.2014	43,078,028.37	38,308,199.82
	Less : Balance as at 31.12.2014	50,283,425.74	43,078,028.37
	Increase / Decrease Liabilities	<u>(7,205,397.37)</u>	<u>(4,769,828.55)</u>
23.1	Advances		
	Suspense Account Salary	-	2,819.58
	Suspense Account - General	1,223,496.36	944,526.04
	Special Salary advance	5,650.00	0.00
	Advance general	7,893.40	
		<u>1,237,039.76</u>	<u>947,345.62</u>
23.2	Accrued Expenses		
	Accrued Tax for Interest	122,640.36	161,478.72
	Accrued Expenses - R & D	7,370,123.28	5,291,929.85
	Accrued Expenses - Head office	23,535.11	10,835.44
	Head Office creditor	130.00	130.00
	Accrued Expenses - other field crops	4,499,000.00	
		<u>12,015,428.75</u>	<u>5,464,374.01</u>
23.3	Deposits		
	Contract Supplies	-	5,665.00
	Tender - R&D	121,820.00	176,420.00
	Tender - Head Office	-	279,854.00
		<u>121,820.00</u>	<u>461,939.00</u>
23.4	Retention		
	Contract Works	282,505.78	2,773,480.65
	Unpaid - salary	265,832.39	275,716.20
	Unpaid - salary - Head office	200.00	200.00
	Unpaid - wages	-	16,067.57
	Cancelled cheques	73,250.00	118,251.80
	Regional Economic Advancement Project 2 -Matale	139,272.00	139,272.00
		<u>761,060.17</u>	<u>3,322,988.22</u>
23.5	Creditors Control Account		
	Other creditors	539,135.00	802,295.00
	Plastic crates-Fund	9,251,445.95	9,201,545.95
	Paboling Vasals-Fund	4,207,384.04	4,207,384.04
		<u>13,997,964.99</u>	<u>14,211,224.99</u>
23.6	Reciepts in advance		
	Reciepts in advance - deyata kirula	117,546.05	
		<u>117,546.05</u>	
23.7	Gratuity fund	<u>22,032,566.02</u>	<u>18,670,156.53</u>

Notes		Year Ended 31 st December 2014 (Rs.)	Year Ended 31 st December 2013 (Rs.)
24 Current Assets			
Stocks	24.1	1,487,663.00	2,387,749.45
Advances	24.2	1,830,450.91	640,907.20
Deposits	24.3	675.00	22,708.75
Debtors Control Account	24.4	506,027.50	1,249,535.35
Accrued Income	24.5	4,667,129.89	2,967,731.77
Savings	24.6	6,654,527.85	5,948,830.37
		<u>15,146,474.15</u>	<u>13,217,462.89</u>
Balance as at 1.1.2014		13,217,462.89	12,706,473.52
Less : Balance as at 31.12.2014		<u>15,146,474.15</u>	<u>13,217,462.89</u>
Increase / Decrease Current Assets		<u>(1,929,011.26)</u>	<u>(510,989.37)</u>
24.1 Current Assets			
Stocks			
Noodles		31,277.40	321,297.54
Rice Mill -Rice		1,606.50	1,606.50
Stores -Paddy		34,119.62	43,511.42
Research projects		287,508.00	415,468.00
Machinery - Raw material		8,031.00	70,369.25
Machinery		978,745.00	519,745.00
Diesel - Factory		111,434.48	111,434.48
- Generator		34,941.00	34,941.00
Packing material - Noodles		-	869,376.26
		<u>1,487,663.00</u>	<u>2,387,749.45</u>
24.2 Prepayments			
Festival		107,500.00	141,594.03
Traveling		122,566.80	121,318.41
Half monthly		-	150.00
Interring Advance -General R&D		85,187.46	158,885.16
Interring Advance -General - Head Office		-	17,106.60
Special Salary advance		-	0.00
Prepayments for Renovation of work shop		1,515,196.65	201,853.00
		<u>1,830,450.91</u>	<u>640,907.20</u>
24.3 Deposits			
Services		675.00	675.00
Other		-	22,033.75
		<u>675.00</u>	<u>22,708.75</u>
24.4 Debtors Control Account			
Rice		-	100,183.75
By-product		-	6,069.50
Others		504,808.50	1,142,063.10
Sale -stole		1,219.00	1,219.00
		<u>506,027.50</u>	<u>1,249,535.35</u>
24.5 Accrued Income			
Geranial		1,231,516.52	2,887,436.40
Regional Economic Advancement Project 1 -Matale		49,354.70	49,354.70
Sri Lanka Council forAgricultural Research Policy		30,940.67	30,940.67
Recievables for other field crops		3,355,318.00	
		<u>4,667,129.89</u>	<u>2,967,731.77</u>
24.6 Savings			
National Saving Bank 1- 0005- 04-9129-2-Anuradhapura		2,614,099.84	2,497,425.41
National Saving Bank 1- 0001- 07-32087-Kollupitiya		4,040,428.01	3,451,404.96
		<u>6,654,527.85</u>	<u>5,948,830.37</u>

Notes	Balance as at 31.12. 2014 (Rs.)	Balance as at 31.12. 2013 (Rs.)
25 Investment		
Deposits		
National Saving Bank 2- 0001- 20-90520 -Kollupitiya	10,000,000.00	10,000,000.00
National Saving Bank 2- 0001- 21-28152 -Kollupitiya	10,000,000.00	10,000,000.00
National Saving Bank 2- 0001- 21-28195 -Kollupitiya	10,000,000.00	10,000,000.00
National Saving Bank 2- 0001- 21-28187 -Kollupitiya	10,000,000.00	10,000,000.00
National Saving Bank 2- 0001-21-28179 -Kollupitiya	10,000,000.00	10,000,000.00
	<u>50,000,000.00</u>	<u>50,000,000.00</u>
Other Non - Current Assets		
Workers Loan	4,865,692.09	5,662,242.73
Workers Loan -Special	539,540.09	538,833.34
Work in Progress - Office Building	4,498,266.89	4,498,266.89
	<u>9,903,499.07</u>	<u>10,699,342.96</u>
Total Non - Current Assets	<u>59,903,499.07</u>	<u>60,699,342.96</u>
 Balance as at 1.1.2014	60,699,342.96	62,504,717.10
Less : Balance as at 31.12.2014	59,903,499.07	60,699,342.96
Increase / Decrease Non Current Assets	<u>795,843.89</u>	<u>1,805,374.14</u>
26 Cash & Cash equivalents at the beginning of period		
Cash at Bank		
Bank of Ceylon - Torinton	1,632,359.10	4,703,885.18
People's Bank -Anuradhapura	1,020,688.52	182,384.42
Patty Cash	5,000.00	5,000.00
Cash & Cash equivalents as at 01.01.2014	<u>2,658,047.62</u>	<u>4,891,269.60</u>
 27 Cash & Cash equivalents at the ending of period		
Cash at Bank		
Bank of Ceylon - Torinton	(74,312,238.61)	1,632,359.10
People's Bank -Anuradhapura	70,534,726.71	1,020,688.52
Patty Cash	5,000.00	5,000.00
Cash & Cash equivalents as at 31.12.2014	<u>(3,772,511.90)</u>	<u>2,658,047.62</u>
 28 Note - That plastic crates given to farmers traders and collectors at 50% subsidy for promote packaging methods to transportation reduction to Post Harvest Losses in Fruits and Vegetables		
That stock not yet given to them		
Plastic crate stock 2014.12.31 at Cost	<u>3,475,041.80</u>	
 29 Note		
29.1 Following deductions have been made when computing the operational profit		
Gratuity		
29.2 E.P.F. - Employee Contributes 10% Employer Contributes 12%		
29.3 E.T.F. Employer Contributes 3%		

30 Notes

Payment of income tax has not been included in cash payment
However with holding tax has been deducted from the interest
received on fixed deposits and savings. We have
submitted income tax reports to the in Land Revenue.

31 Assets transferred from the Paddy Marketing Board to the I.P.H.T. on
25 th October 2006. However, the Accounts shown in book values of
the P.M.B. transferred Assets . The transferred Assets are being
revalued

32 One of our building Contractors Ms K.D Ebert & Sons Holding (pvt) Limited
have signed two agreements to contract building at Anuradhapura office
They have done some extra work un authored the agreement.
After stopping payment for the un authored extra work. They have sent two
letter of demand on 28 th November 2006 demanding to pay Rs 30,806,979.10 .
One being Rs 5,329,344.62 as payment of extra work and the other
Rs 5,477,634.48. Total payment 10,806,979.10 and their loss and damages
Rs 20,000,000.00 the total amount Rs 30,806,979.10 requesting to pay
whiting 14 days if not action will be taken
But we have not responded the request neither they have not filed
action against us according to the letter of demand

33 The initiate Capitals of the INSTITUTE OF POST HARVEST
TECHNOLOGY shown Rs 500,000,000.00

34 The institute has received from the treasury on capital expenditure
from 2000 to 2014 Rs. 30,509,250.00

Institute was damaged due to flood on 20th december and estimated loss is

35 Rs.6,287,804.00. Stock losses were accounted.(Note 20.2)

36 According to the general treasury approval inactive debit and credit balances were adjusted.

Note

8 & 9 PROPERTY, PLANT & EQUIPMENT

	Building		Plant, Machinery & Equipment		Equipment	Furniture & Fittings	Electricity & Fittings	Library Books	Computers	Telephone & Fittings	Vehicles	Agro - Farm	Total
Descriptions	Laboratory Workshop Mill Rs	Rice Based Products Food Plants Rs	Office, Laboratory Workshop Mill Rs	Rice Based Products Food Plants Rs	Office, Laboratory Workshop Mill Rs	Office, Laboratory Workshop Mill Rs	Office, Laboratory Workshop Mill Rs	Office, Rs	Office, Rs	Office, Rs	Office, Rs	Office, Rs	Rs
COST													
Balance as at 1.1.2014	65,442,846.25	40,636,087.00	41,164,742.47	29,110,000.00	5,218,063.77	10,278,734.07	1,370,770.37	1,481,078.55	6,171,501.06	451,366.16	28,505,413.82	1,253,934.22	231,084,537.74
Adjustment	31,970.00		3,146,893.00		210,500.00	0.00	0.00	0.00	130,000.00	0.00	0.00		3,519,363.00
Additions	0.00	0.00	889,885.00	0.00	1,865,569.00	591,996.50	8,810.00	0.00	586,650.00	25,881.50	0.00	0.00	3,968,792.00
Disposal													
Balance as at 31.12.2014	65,474,816.25	40,636,087.00	45,201,520.47	29,110,000.00	7,294,132.77	10,870,730.57	1,379,580.37	1,481,078.55	6,888,151.06	477,247.66	28,505,413.82	1,253,934.22	238,572,692.74
DEPRECIATION													
Balance as at 1.1.2014	16,033,419.69	23,365,750.03	36,161,330.37	29,109,999.00	3,929,160.25	8,317,868.50	1,218,939.61	1,246,518.19	5,783,509.06	375,644.99	22,567,161.82	1,253,934.22	149,363,235.73
Adjustment	799.25	0.00	686,016.98	0.00	63,150.00	0.00	0.00	0.00	97,500.00	0.00	0.00	0.00	847,466.23
Charges for the Year	1,636,870.41	1,015,902.18	1,959,970.29	0.00	473,007.36	568,758.39	25,466.30	60,801.00	386,554.50	35,612.82	2,969,120.00	0.00	9,132,063.24
Depreciation on Disposals													
Balance as at 31.12.2014	17,671,089.35	24,381,652.21	38,807,317.64	29,109,999.00	4,465,317.61	8,886,626.89	1,244,405.91	1,307,319.19	6,267,563.56	411,257.81	25,536,281.82	1,253,934.22	159,342,765.20
WRITTEN DOWN VALUE													
Balance as at 31.12.2014	47,803,726.90	16,254,434.80	6,394,202.83	1.00	2,828,815.16	1,984,103.68	135,174.46	173,759.36	620,587.50	65,989.85	2,969,132.00	0.00	79,229,927.54
Balance as at 1.1.2014	49,409,426.56	17,270,336.97	5,003,412.10	1.00	1,288,903.52	1,960,865.57	151,830.76	234,560.36	387,992.00	75,721.17	5,938,252.00	0.00	81,721,302.01

Note	Depreciation	Rates
	Building	2.5%
	Plant, Machinery & Equipment	7.5%
	Equipment	10%
	Furniture & Fittings	10%
	Electricity & Fittings	10%
	Telephone & Fittings	10%
	Library Books	10%
	Vehicles	20%
	Telephone	20%
	Computers	25%
	Agro - Farm	25%

379

Descriptions	No	Balance as at 1.1.2014	Adjustment to Opening Balance	Disposed	Additions During the Year	Balance as at 31.12.2014	Aggregated Depreciation as at 1.1.2014	Adjustment to Opening Balance	Disposed	Depreciation for the Year	Aggregated Depreciation as at 31.12.2014	Balance as at 31.12.2014	Balance as at 31.12.2013
		Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs
Buildings													
Office ,Laboratory Workshop & Mill		5,249,014.85				5,249,014.85	4,855,338.72			131,225.37	4,986,564.08	262,450.77	393,676.13
Boundary wall		1,791,685.65				1,791,685.65	409,169.85	0.00		44,792.14	453,961.99	1,337,723.66	1,382,515.80
P.V.C Fence		3,032,578.28				3,032,578.28	379,072.30			75,814.46	454,886.76	2,577,691.52	2,653,505.98
Bachelor Quarters	1	959,227.75				959,227.75	335,729.67			23,980.69	359,710.36	599,517.39	623,498.08
Workshop Extension	1	1,933,992.81				1,933,992.81	471,873.10			48,349.82	520,222.92	1,413,769.89	1,462,119.71
Cycle Hut	1	116,054.52				116,054.52	29,013.59			2,901.35	31,914.94	84,139.58	87,040.93
Twin Quarters	8	10,734,760.80				10,734,760.80	1,993,147.92			268,369.02	2,261,516.94	8,473,243.86	8,741,612.88
Room-Partician	1	50,150.00				50,150.00	15,045.00			1,253.75	16,298.75	33,851.25	35,105.00
Twin Quarters Water Tanks	8	484,288.30				484,288.30	108,491.67			12,107.21	120,598.88	363,689.42	375,796.63
Water Tanks	10	334,126.00				334,126.00	52,657.34			8,353.15	61,010.49	273,115.51	281,468.66
Room-Partician -Extinction office	1	97,155.00				97,155.00	21,859.92			2,428.88	24,288.80	72,866.21	75,295.08
Vehicle Garage	1	345,205.60				345,205.60	77,671.26			8,630.14	86,301.40	258,904.21	267,534.35
Office ,Laboratory & Hostal		37,632,639.96				37,632,639.96	6,917,784.77			940,816.00	7,858,600.77	29,774,039.18	30,714,855.19
Stage		402,260.00				402,260.00	80,452.00			10,056.50	90,508.50	311,751.50	321,808.00
Cantina		689,103.60				689,103.60	137,820.73			17,227.60	155,048.33	534,055.27	551,282.87
Road Development		550,093.60				550,093.60	96,266.38			13,752.34	110,018.72	440,074.88	453,827.22
Gate		378,251.18				378,251.18	18,912.56			9,456.28	28,368.84	349,882.34	359,338.62
Gurd room		638,128.35				638,128.35	31,906.42			15,953.21	47,859.63	590,268.72	606,221.93
Garage	2	24,130.00	31,970.00			56,100.00	1,206.50	799.25		1,402.50	3,408.25	52,691.75	22,923.50
Sub Total		65,442,846.25	31,970.00	0.00	0.00	65,474,816.25	16,033,419.69	799.25	0.00	1,636,870.41	17,671,089.35	47,803,726.90	49,409,426.56
Buildings													
Rice Based Food Products Plant		40,636,087.00				40,636,087.00	23,365,750.03			1,015,902.18	24,381,652.21	16,254,434.80	17,270,336.97
Sub Total		40,636,087.00	0.00	0.00	0.00	40,636,087.00	23,365,750.03	0.00	0.00	1,015,902.18	24,381,652.21	16,254,434.80	17,270,336.97
Plant, machinery & Equipment													
Office ,Laboratory Workshop & Mill		12,507,979.26				12,507,979.26	12,507,979.26				12,507,979.26	0.00	0.00
Copy Printer	1	437,625.00				437,625.00	437,625.00				437,625.00	0.00	0.00
Paper Cutter	1	22,000.00				22,000.00	22,000.00				22,000.00	0.00	0.00
Typewriter (English)	2	82,756.00				82,756.00	73,457.64			3,675.45	77,133.09	5,622.91	9,298.36
Gas Welding Set	1	37,500.00				37,500.00	37,500.00				37,500.00	0.00	0.00
Spot Welding plant	1	200,000.00				200,000.00	195,000.00			5,000.00	200,000.00	0.00	5,000.00
Grass cutter	1	76,500.00				76,500.00	76,500.00				76,500.00	0.00	0.00
Laboratory waterde-ionizer	1	192,404.44				192,404.44	192,404.44				192,404.44	0.00	0.00
Auto clave	1	774,675.00				774,675.00	774,675.00				774,675.00	0.00	0.00
UV- lamp	1	70,279.11				70,279.11	70,279.11				70,279.11	0.00	0.00
Facsimile machine	6	177,373.75				177,373.75	104,786.61			8,915.53	113,702.14	63,671.61	72,587.14
Multimedia Projector	2	702,375.00				702,375.00	489,515.68			34,959.38	524,475.06	177,899.94	212,859.32
Photocopy machine	6	720,500.00			103,040.00	823,540.00	563,625.00			45,578.00	609,203.00	214,337.00	156,875.00
Emboss Seal	1	28,125.00				28,125.00	27,421.92			703.13	28,125.05	-0.05	703.08
Refrigerator	1	49,504.00				49,504.00	48,266.40			1,237.60	49,504.00	0.00	1,237.60
Bread cutter	1	57,500.00				57,500.00	56,062.50			1,437.50	57,500.00	0.00	1,437.50
Vacuum Sealer	1	180,000.00				180,000.00	175,500.00			4,500.00	180,000.00	0.00	4,500.00
Colour soarting machine	1	5,736,788.83				5,736,788.83	6,593,369.00			143,419.72	5,736,788.72	0.11	143,419.83
Uprighter Freezer	2	75,000.00				75,000.00	73,125.00			1,875.00	75,000.00	0.00	1,875.00
Refrigerator	5	167,900.01				167,900.01	146,940.00			6,432.50	153,372.50	14,527.51	20,960.01
Freezer	3	79,000.00			47,405.00	126,405.00	77,025.00			5,530.38	82,555.38	43,849.62	1,975.00
Typewriter (Sinhala)	3	78,813.00				78,813.00	76,842.71			1,970.33	78,813.04	-0.04	1,970.29
Mycro soil Hot air oven	1	75,960.00				75,960.00	68,364.00			5,697.00	74,061.00	1,899.00	7,596.00
Universal oven	1	184,500.00				184,500.00	166,050.00			13,837.50	179,887.50	4,612.50	18,450.00
Laboratory Oven	2	342,000.00				342,000.00	307,800.00			25,650.00	333,450.00	8,550.00	34,200.00
Rotary Evaporator	3	559,776.00				559,776.00	503,798.40			41,983.20	545,781.60	13,994.40	55,977.60
P.H. meter - hand held	4	187,264.00				187,264.00	168,537.60			14,044.80	182,582.40	4,681.60	18,726.40
- Bench Top	3	181,518.00				181,518.00	163,366.20			13,613.85	176,980.05	4,537.95	18,151.80
Gass Analyser	1	4,250,400.00				4,250,400.00	3,187,800.00			318,780.00	3,506,580.00	743,820.00	1,062,600.00
Balance C/F		28,236,016.40	0.00	0.00	150,445.00	28,386,461.40	26,385,616.47	0.00	0.00	698,840.87	27,084,457.34	1,302,004.06	1,850,399.93

Descriptions	No	Balance as at 1.1.2014 Rs	Adjustment to Opening Balance Rs	Disposed Rs	Additions During the Year Rs	Balance as at 31.12.2014 Rs	Aggregated Depreciation as at 1.1.2014 Rs	Adjustment to Opening Balance Rs	Disposed Rs	Depreciation for the Year Rs	Aggregated Depreciation as at 31.12.2014 Rs	Balance as at 31.12.2014 Rs	Balance as at 31.12.2013 Rs
Balance B/F		28,236,016.40	0.00	0.00	150,445.00	28,386,461.40	26,385,616.47	0.00	0.00	698,840.87	27,084,457.34	1,302,004.06	1,850,399.93
Heating mantles - 500ml	6	183,816.00				183,816.00	165,434.35			13,786.20	179,220.55	4,595.45	18,381.65
Heating mantles -1000ml	6	193,248.00				193,248.00	173,923.20			14,493.60	188,416.80	4,831.20	19,324.80
Heating mantles - 2000ml	3	131,088.00				131,088.00	117,979.20			9,831.60	127,810.80	3,277.20	13,108.80
Soxhlet Extraction set - 1000ml	6	156,600.00				156,600.00	140,940.00			11,745.00	152,685.00	3,915.00	15,660.00
Soxhlet Extraction set - 2000ml	3	105,750.00				105,750.00	95,175.00			7,931.25	103,106.25	2,643.75	10,575.00
Laboratory Balance	7	1,967,760.00				1,967,760.00	1,770,984.00			147,582.00	1,918,566.00	49,194.00	196,776.00
Colour meter	1	105,750.00				105,750.00	95,175.00			7,931.25	103,106.25	2,643.75	10,575.00
Bush cutter	1	41,970.00				41,970.00	37,773.00			3,147.75	40,920.75	1,049.25	4,197.00
Welding transformer	1	204,975.00				204,975.00	184,477.54			15,373.13	199,850.67	5,124.33	20,497.46
Rice Polishing machine	1	660,697.42				660,697.42	594,627.69			49,552.31	644,180.00	16,517.42	66,069.73
Computer pendriver	1	9,900.00				9,900.00	8,910.00			742.50	9,652.50	247.50	990.00
Pentrometer	2	62,100.00				62,100.00	55,890.00			4,657.50	60,547.50	1,552.50	6,210.00
Laboratory waterbath with racks	1	89,200.00				89,200.00	80,280.00			6,690.00	86,970.00	2,230.00	8,920.00
Stereop zoom microscope	1	88,000.00				88,000.00	79,200.00			6,600.00	85,800.00	2,200.00	8,800.00
Microscope with Photography & Display	1	164,007.00				164,007.00	147,606.34			12,300.53	159,906.87	4,100.14	16,400.66
Microscope	1	104,700.00				104,700.00	94,230.00			7,852.50	102,082.50	2,617.50	10,470.00
Colony Counter	1	76,800.00				76,800.00	69,120.00			5,760.00	74,880.00	1,920.00	7,680.00
Brookfield	1	258,199.20				258,199.20	232,379.26			19,364.94	251,744.20	6,455.00	25,819.94
Turbidity Meter	1	78,935.00				78,935.00	65,121.39			5,920.13	71,041.52	7,893.49	13,813.61
Calibration kit set	1	17,220.00				17,220.00	14,206.50			1,291.50	15,498.00	1,722.00	3,013.50
Sample cuvettes	1	4,990.00				4,990.00	4,116.75			374.25	4,491.00	499.00	873.25
Shaker	1	220,050.00				220,050.00	181,541.25			16,503.75	198,045.00	22,005.00	38,508.75
Moisture Balance	2	527,046.00				527,046.00	434,812.95			39,528.45	474,341.40	52,704.60	92,233.05
Cooled Incubator	1	146,070.00				146,070.00	120,507.75			10,955.25	131,463.00	14,607.00	25,562.25
Automatic Kjeldhal Apparator	1	686,070.00				686,070.00	566,007.75			51,455.25	617,463.00	68,607.00	120,062.25
Melting Point Apparator	1	198,562.50				198,562.50	163,814.09			14,892.19	178,706.28	19,856.22	34,748.41
Dryer	1	250,000.00				250,000.00	206,250.00			18,750.00	225,000.00	25,000.00	43,750.00
Deep Dryer	1	13,290.00				13,290.00	1,993.50	0.00		996.75	2,990.25	10,299.75	11,296.50
Drive Gear Motor	1	245,240.00				245,240.00	183,930.00			18,393.00	202,323.00	42,917.00	61,310.00
REAP - Stark moisture detector receiver	1	32,256.00				32,256.00	24,192.00			2,419.20	26,611.20	5,644.80	8,064.00
Sieve Shaker	1	685,400.00				685,400.00	359,835.00			51,405.00	411,240.00	274,160.00	325,565.00
Rubber Roll Sheller	1	255,500.00				255,500.00	134,137.50			19,162.50	153,300.00	102,200.00	121,362.50
Fume Cupboard	1	500,319.00				500,319.00	262,667.52			37,523.93	300,191.45	200,127.56	237,651.48
Abrasive flour mill	1	242,300.00				242,300.00	109,035.00			18,172.50	127,207.50	115,092.50	133,265.00
power hack saw	1	423,652.17				423,652.17	158,869.56			31,773.91	190,643.47	233,008.70	264,782.61
vibro meter	2	124,000.00				124,000.00	18,600.00			9,300.00	27,900.00	96,100.00	105,400.00
Submersible Aeriated pump	1		146,893.00			146,893.00		11,016.98		11,016.98	22,033.95	124,859.05	0.00
Muffle Furnace	1		750,000.00			750,000.00		168,750.00		56,250.00	225,000.00	525,000.00	0.00
Dietary Fiber Extractor Unit	1		1,500,000.00			1,500,000.00		337,500.00		112,500.00	450,000.00	1,050,000.00	0.00
Moisture Balance	5		750,000.00			750,000.00		168,750.00		56,250.00	225,000.00	525,000.00	0.00
Rice Destoner	1				54,000.00	54,000.00				4,050.00	4,050.00	49,950.00	0.00
Air Blast Freezer	1				685,440.00	685,440.00				51,408.00	51,408.00	634,032.00	0.00
Whiteness meter	2	86,400.00				86,400.00	71,280.00			6,480.00	77,760.00	8,640.00	15,120.00
Welding plant	1	41,650.00				41,650.00	34,361.25			3,123.75	37,485.00	4,165.00	7,288.75
Digital Thermometer	2	18,924.00				18,924.00	15,612.30			1,419.30	17,031.60	1,892.40	3,311.70
Dial Thermometer	2	12,000.00				12,000.00	9,900.00			900.00	10,800.00	1,200.00	2,100.00
Turbine ventilation	1	16,800.00				16,800.00	13,860.00			1,260.00	15,120.00	1,680.00	2,940.00
Thermometers	4	352,500.00				352,500.00	277,875.00			26,437.50	304,312.50	48,187.50	74,625.00
Moisture meter	6	146,000.96				146,000.96	65,850.31			10,950.05	76,800.31	69,200.65	80,150.71
Amplify meter	1	6,275.00				6,275.00	5,176.90			470.63	5,647.53	627.47	1,098.10
Rice Flour Machine	1	100,623.00				100,623.00	83,013.98			7,546.73	90,560.71	10,062.30	17,609.02
Glass Polisher	1	377,187.50				377,187.50	311,179.66			28,289.06	339,468.72	37,718.78	66,007.84
Gass Analyser	1	650,800.00				650,800.00	488,100.00			48,810.00	536,910.00	113,890.00	162,700.00
Digital fruit firmness tester	1	228,800.00				228,800.00	171,600.00			17,160.00	188,760.00	40,040.00	57,200.00
Dial Thermometer & Probes	1,16	220,800.00				220,800.00	165,600.00			16,560.00	182,160.00	38,640.00	55,200.00
Water Analys meter	1	261,625.00				261,625.00	176,596.86			19,621.88	196,218.74	65,406.27	85,028.14
Solar Dryer	1	405,122.56				405,122.56	273,457.69			30,384.19	303,841.88	101,280.68	131,664.87
Pest Control	1	131,372.15				131,372.15	88,676.14			9,852.91	98,529.05	32,843.10	42,696.01
Rice flaking Machine	1	616,384.61				616,384.61	369,830.78			46,228.85	416,059.63	200,324.98	246,553.83
Sub Total		41,164,742.47	3,146,893.00	0.00	889,885.00	45,201,520.47	36,161,330.37	686,016.98	0.00	1,959,970.29	38,807,317.64	6,394,202.83	5,003,412.10
Rice Based Food Products Plant		29,110,000.00				29,110,000.00	29,109,999.00				29,109,999.00	1.00	1.00
Sub Total		29,110,000.00	0.00	0.00	0.00	29,110,000.00	29,109,999.00	0.00	0.00	0.00	29,109,999.00	1.00	1.00

Descriptions	No	Balance as at 1.1.2014	Adjustment to Opening Balance	Disposed	Additions During the Year	Balance as at 31.12.2014	Aggregated Depreciation as at 1.1.2014	Adjustment to Opening Balance	Disposed	Depreciation for the Year	Aggregated Depreciation as at 31.12.2014	Balance as at 31.12.2014	Balance as at 31.12.2013
		Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs
Equipments													
Office Laboratory Workshop & Mill		51,377.84				51,377.84	51,377.84				51,377.84	0.00	0.00
Stores		2,600.00				2,600.00	2,600.00				2,600.00	0.00	0.00
Weighing machine	4	2,550.00				2,550.00	2,550.00				2,550.00	0.00	0.00
Moisture meter	84	237,676.56				237,676.56	237,676.56				237,676.56	0.00	0.00
Stainless Steel Vessel Plantas	10,10	8,550.00				8,550.00	8,360.00			190.00	8,550.00	0.00	190.00
Kitchen knife, Spoons, Chopping Board	6,25,3	9,092.00			3,975.00	13,067.00	8,892.00			597.50	9,489.50	3,577.50	200.00
Dial Thermometer	6	8,100.00				8,100.00	8,100.00				8,100.00	0.00	0.00
National Gas cooker	8	17,000.00			33,750.00	50,750.00	17,000.00			3,375.00	20,375.00	30,375.00	0.00
Bottle Sealer	1	2,250.00				2,250.00	2,250.00				2,250.00	0.00	0.00
Poly Sealer	2	4,395.00				4,395.00	4,145.50			249.50	4,395.00	0.00	249.50
Plastic Vessel	11	3,760.00				3,760.00	3,760.00				3,760.00	0.00	0.00
Electric Kettle -	4	13,540.00			1,650.00	15,190.00	8,810.00			1,230.00	10,040.00	5,150.00	4,730.00
Electric Heater	1				540.00	540.00				54.00	54.00	486.00	0.00
Electric Co. Scraper	1				16,950.00	16,950.00				1,695.00	1,695.00	15,255.00	0.00
Electric Hand Mixer	2				4,400.00	4,400.00				440.00	440.00	3,960.00	0.00
Food Processign machine	1	117,450.00				117,450.00	117,450.00				117,450.00	0.00	0.00
Food Processer	2	25,000.00				25,000.00	25,000.00				25,000.00	0.00	0.00
Deep fryer	2	19,000.00				19,000.00	19,000.00				19,000.00	0.00	0.00
Electric Oven	4	31,790.00				31,790.00	28,346.00			1,584.00	29,930.00	1,860.00	3,444.00
Kitchen Grinder	2	4,392.00				4,392.00	4,392.00				4,392.00	0.00	0.00
Kitchen Beeter	2	3,240.00				3,240.00	3,240.00				3,240.00	0.00	0.00
Cooking pot / Pans	3	3,600.00			11,850.00	15,450.00	3,600.00			1,185.00	4,785.00	10,665.00	0.00
Cutlery set	8	5,472.00				5,472.00	5,472.00				5,472.00	0.00	0.00
Kenwood Food Processer	1	36,300.00				36,300.00	36,300.00				36,300.00	0.00	0.00
Gas Silinder & House and others	2	30,448.00				30,448.00	30,448.00				30,448.00	0.00	0.00
Gas Cookers with tube	8,7	37,400.00				37,400.00	22,925.00			3,140.00	26,065.00	11,335.00	14,475.00
Microvave Oven	2	23,800.01				23,800.01	23,800.00				23,800.00	0.00	0.00
Pressure Cooker	2	6,350.00				6,350.00	6,350.00				6,350.00	0.00	0.00
Caste Recorder	1	3,720.00				3,720.00	3,720.00				3,720.00	0.00	0.00
Gas Silinders	5	17,299.00				17,299.00	17,299.00				17,299.00	0.00	0.00
Burner	1	3,850.00				3,850.00	3,850.00				3,850.00	0.00	0.00
Moisture Meter	1	25,875.00				25,875.00	25,875.00				25,875.00	0.00	0.00
Emergency light with table lamp	1	4,000.00				4,000.00	4,000.00				4,000.00	0.00	0.00
Codiang machine	1	10,811.25				10,811.25	10,811.25				10,811.25	0.00	0.00
Calculator	27	25,182.50			7,025.00	32,207.50	16,887.51			1,857.50	18,745.01	13,462.49	8,294.99
Digital Multimeter & power controler	1	44,050.00				44,050.00	44,050.00				44,050.00	0.00	0.00
Time machine - small	1	34,000.00				34,000.00	34,000.00				34,000.00	0.00	0.00
- large	2	84,000.00				84,000.00	84,000.00				84,000.00	0.00	0.00
Cellular Phone	1	26,700.00				26,700.00	26,700.00				26,700.00	0.00	0.00
Stapler	4	4,954.00				4,954.00	4,954.00				4,954.00	0.00	0.00
Wall clock	10	11,149.00			1,725.00	12,874.00	5,273.50			1,246.00	6,519.50	6,354.50	5,875.50
Digital clock	1	7,340.00				7,340.00	3,670.00			734.00	4,404.00	2,936.00	3,670.00
Puncher	10	2,225.00			550.00	2,775.00	1,074.50			219.50	1,294.00	1,481.00	1,150.50
Oasis quat sntzer	1	6,727.50				6,727.50	6,727.50				6,727.50	0.00	0.00
Micro - Chior	1	6,750.00				6,750.00	6,750.00				6,750.00	0.00	0.00
Digital Themeter	4	112,769.50				112,769.50	77,565.70			8,800.95	86,366.65	26,402.85	35,203.80
Immersion probe	2	7,510.00				7,510.00	7,510.00				7,510.00	0.00	0.00
Spear temperature probes	2	10,124.00				10,124.00	10,124.00				10,124.00	0.00	0.00
Thermometers - General 10 - 360	3	1,950.00				1,950.00	1,950.00				1,950.00	0.00	0.00
Thermometers - General 10 - 250	3	1,950.00				1,950.00	1,950.00				1,950.00	0.00	0.00
Thermometers - General 10 - 110	3	1,665.00				1,665.00	1,665.00				1,665.00	0.00	0.00
Thermomerers	2				117,810.00	117,810.00				11,781.00	11,781.00	106,029.00	0.00
Thermometers - Murcury enclosed scale	1	5,900.00				5,900.00	5,900.00				5,900.00	0.00	0.00
Drill Machine	1	40,750.00				40,750.00	28,525.00			4,075.00	32,600.00	8,150.00	12,225.00
Cutoff Machine	1	64,032.49				64,032.49	44,822.76			6,403.25	51,226.01	12,806.48	19,209.73
Air Babal Selear	1	14,500.00				14,500.00	10,150.00			1,450.00	11,600.00	2,900.00	4,350.00
Blenders	5	20,699.00			17,950.00	38,649.00	9,089.70			3,864.90	12,954.60	25,694.40	11,609.30
Pricing Machine	1	1,950.00				1,950.00	1,365.00			195.00	1,560.00	390.00	585.00
Balance C/F		1,307,566.65	0.00	0.00	218,175.00	1,525,741.65	1,182,104.32	0.00	0.00	54,367.10	1,236,471.42	289,270.22	125,462.32

Descriptions	No	Balance as at 1.1.2014	Adjustment to Opening Balance	Disposed	Additions During the Year	Balance as at 31.12.2014	Aggregated Depreciation as at 1.1.2014	Adjustment to Opening Balance	Disposed	Depreciation for the Year	Aggregated Depreciation as at 31.12.2014	Balance as at 31.12.2014	Balance as at 31.12.2013
		Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs
Equipments													
Balance C/F		1,307,566.65	0.00	0.00	218,175.00	1,525,741.65	1,182,104.32	0.00	0.00	54,367.10	1,236,471.42	289,270.22	125,462.32
Timer Programable	3	8,370.00				8,370.00	8,370.00				8,370.00	0.00	0.00
Water distill plant	1	29,700.00				29,700.00	29,700.00				29,700.00	0.00	0.00
Refractometer Fan	2	74,870.00				74,870.00	74,870.00				74,870.00	0.00	0.00
Ebiliometer with Roplaement Thermometer	1	54,900.00				54,900.00	54,900.00				54,900.00	0.00	0.00
Bunsan burner	6	2,700.00				2,700.00	2,700.00				2,700.00	0.00	0.00
Electric Bunsan burner	1	43,353.60				43,353.60	43,353.60				43,353.60	0.00	0.00
Heidolpeh	1	69,669.60				69,669.60	69,669.60				69,669.60	0.00	0.00
Allpeeh 7645 rectangular	3	40,924.80				40,924.80	40,924.80				40,924.80	0.00	0.00
Allpeeh 7550 rectangular	10	101,376.00				101,376.00	101,376.00				101,376.00	0.00	0.00
Duplo Spare Drum of	1	104,500.00				104,500.00	104,500.00				104,500.00	0.00	0.00
Food Dehydrator	1	1,494.99				1,494.99	1,494.99				1,494.99	0.00	0.00
Airconditioners	18	1,345,890.41				1,345,890.41	1,067,033.40			72,935.66	1,139,969.06	205,921.35	278,857.02
Hot Plate	2	60,876.00				60,876.00	60,876.00				60,876.00	0.00	0.00
Cooking pot / Pans		4,750.00				4,750.00	4,750.00				4,750.00	0.00	0.00
Water Filtor	9	37,650.00				37,650.00	30,610.00			3,520.00	34,130.00	3,520.00	7,040.00
T V buster	1	2,971.00				2,971.00	2,971.00				2,971.00	0.00	0.00
Sealers	2	5,990.00				5,990.00	4,613.00			459.00	5,072.00	918.00	1,377.00
Calculator	3	4,783.00				4,783.00	4,783.00				4,783.00	0.00	0.00
Micro Phone stand	1	1,525.00				1,525.00	1,525.00				1,525.00	0.00	0.00
Micro Phone	1	510.00				510.00	510.00				510.00	0.00	0.00
Thermometer	3	25,499.97				25,499.97	25,499.96				25,499.96	0.01	0.00
Chromatography columns	1	39,620.00				39,620.00	39,620.00				39,620.00	0.00	0.00
Staining Trough Glass	1	1,980.00				1,980.00	1,980.00				1,980.00	0.00	0.00
Mouse	1	650.00				650.00	650.00				650.00	0.00	0.00
Lamp	1	1,794.00				1,794.00	1,794.00				1,794.00	0.00	0.00
Magi Boards	6	12,820.00				12,820.00	7,154.00			973.00	8,127.00	4,693.00	5,666.00
Over head Projector	4	107,410.00				107,410.00	91,085.75			7,187.50	98,273.25	9,136.75	16,324.25
LED Projectors	2				260,000.00	260,000.00				26,000.00	26,000.00	234,000.00	0.00
Cash Box	3	6,500.00				6,500.00	3,365.00			515.00	3,880.00	2,620.00	3,135.00
Tape	1	575.00				575.00	575.00				575.00	0.00	0.00
Water Pump	6	204,205.00				204,205.00	134,943.00			17,660.50	152,603.50	51,601.50	69,262.00
Vaccum cleaner	1	7,700.00				7,700.00	7,700.00				7,700.00	0.00	0.00
Wall Fans	5	17,700.00				17,700.00	13,640.00			580.00	14,220.00	3,480.00	4,060.00
Fans	6	45,740.00				45,740.00	20,632.00			4,574.00	25,206.00	20,534.00	25,108.00
Stapelers	11	15,800.00			840.00	16,640.00	7,260.00			1,664.00	8,924.00	7,716.00	8,540.00
Tape Recoder	5	33,440.00				33,440.00	9,347.00			2,999.00	12,346.00	21,094.00	24,093.00
finger print machine	2	125,000.00				125,000.00	12,500.00			12,500.00	25,000.00	100,000.00	112,500.00
F.M. Modulator	1	1,250.00				1,250.00	125.00			125.00	250.00	1,000.00	1,125.00
Kee Box	1	2,500.00				2,500.00	2,500.00				2,500.00	0.00	0.00
CARP- Blender	1	15,093.75				15,093.75	15,093.72				15,093.71	0.04	0.03
Pressure Cooker	1	3,633.00				3,633.00	3,633.00				3,633.00	0.00	0.00
Kitchen Scalar	1	475.00				475.00	427.50			47.50	475.00	0.00	47.50
Hand mixcher	3	7,225.00				7,225.00	5,742.50			722.50	6,465.00	760.00	1,482.50
Over head Projector Screen	1	4,600.00				4,600.00	4,140.00			460.00	4,600.00	0.00	460.00
Hand Light	2	2,900.00				2,900.00	2,320.00			290.00	2,610.00	290.00	580.00
Grass Cutter	5	76,990.00				76,990.00	33,048.00			7,699.00	40,747.00	36,243.00	43,942.00
Rice Flour Product Machine	1	11,582.00				11,582.00	9,265.60			1,158.20	10,423.79	1,158.21	2,316.40
Incubator	1	172,360.00				172,360.00	172,360.00				172,360.00	0.00	0.00
Weighing machine	2	66,000.00				66,000.00	45,852.51			6,600.00	52,452.51	13,547.49	20,147.49
Rice Cookers	3	21,600.00				21,600.00	10,950.00			2,160.00	13,110.00	8,490.00	10,650.00
Datestamp	3	6,670.00			1,400.00	8,070.00	4,669.00			807.00	5,476.00	2,594.00	2,001.00
Balance C/F		4,343,683.77	0.00	0.00	480,415.00	4,824,098.77	3,579,507.25	0.00	0.00	226,003.96	3,805,511.19	1,018,587.58	764,176.51

Descriptions	No	Balance as at 1.1.2014	Adjustment to Opening Balance	Disposed	Additions During the Year	Balance as at 31.12.2014	Aggregated Depreciation as at 1.1.2014	Adjustment to Opening Balance	Disposed	Depreciation for the Year	Aggregated Depreciation as at 31.12.2014	Balance as at 31.12.2014	Balance as at 31.12.2013
		Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs
Equipments Balance C/F		4,343,683.77	0.00	0.00	480,415.00	4,824,098.77	3,579,507.25	0.00	0.00	226,003.96	3,805,511.19	1,018,587.58	764,176.51
Floor Polisher	1	21,826.00				21,826.00	13,095.60			2,182.60	15,278.20	6,547.80	8,730.40
Buffer set with spoon	2	98,120.00				98,120.00	58,872.00			9,812.00	68,684.00	29,436.00	39,248.00
Balance	2	5,480.00				5,480.00	2,751.00			548.00	3,299.00	2,181.00	2,729.00
Ventilator	1	17,000.00				17,000.00	10,200.00			1,700.00	11,900.00	5,100.00	6,800.00
Exhaust fan	1	12,000.00				12,000.00	7,200.00			1,200.00	8,400.00	3,600.00	4,800.00
Rechargable Toach	4	2,375.00			9,100.00	11,475.00	1,425.00			1,147.50	2,572.50	8,902.50	950.00
Juck	2	980.00				980.00	588.00			98.00	686.00	294.00	392.00
Tray	1	990.00				990.00	594.00			99.00	693.00	297.00	396.00
Tee cups	18	4,600.00				4,600.00	1,510.00			460.00	1,970.00	2,630.00	3,090.00
Spoon	2	110.00				110.00	66.00			11.00	77.00	33.00	44.00
Sound system	2	160,000.00			172,190.00	332,190.00	96,000.00			33,219.00	129,219.00	202,971.00	64,000.00
Sticks printer	1	12,500.00				12,500.00	6,000.00			1,250.00	7,250.00	5,250.00	6,500.00
poli celear	1	37,100.00				37,100.00	14,840.00			3,710.00	18,550.00	18,550.00	22,260.00
Flour mixture	1	2,500.00				2,500.00	750.00			250.00	1,000.00	1,500.00	1,750.00
mixture	1	50,736.00				50,736.00	15,220.80			5,073.60	20,294.40	30,441.60	35,515.20
stinihopper machine	1	2,300.00				2,300.00	690.00			230.00	920.00	1,380.00	1,610.00
table hand grinder	1	12,550.00				12,550.00	3,765.00			1,255.00	5,020.00	7,530.00	8,785.00
scaaner	2	23,000.00				23,000.00	3,850.00			2,300.00	6,150.00	16,850.00	19,150.00
digital cammera with memory chip	5	52,530.00			111,000.00	163,530.00	9,316.00			16,353.00	25,669.00	137,861.00	43,214.00
Vedio Cammera Items	5	33,200.00				33,200.00	6,640.00			3,320.00	9,960.00	23,240.00	26,560.00
Vedio Camera	1		200,000.00			200,000.00		60,000.00		20,000.00	80,000.00	120,000.00	0.00
Laminating Machine	1		5,000.00			5,000.00		1,500.00		500.00	2,000.00	3,000.00	0.00
Paper Sheder Machine	1		5,500.00			5,500.00		1,650.00		550.00	2,200.00	3,300.00	0.00
spray	2	10,500.00			1,900.00	12,400.00	2,100.00			1,240.00	3,340.00	9,060.00	8,400.00
farm equipment	7	10,770.00				10,770.00	2,154.00			1,077.00	3,231.00	7,539.00	8,616.00
seasor	5	465.00			300.00	765.00	93.00			76.50	169.50	595.50	372.00
extention cords	6	5,300.00			6,815.00	12,115.00	1,060.00			1,211.50	2,271.50	9,843.50	4,240.00
brix hydrometer	1	3,360.00				3,360.00	1,344.00			336.00	1,680.00	1,680.00	2,016.00
charger torch	2	3,800.00				3,800.00	1,520.00			380.00	1,900.00	1,900.00	2,280.00
shifter	1	46,000.00				46,000.00	13,800.00			4,600.00	18,400.00	27,600.00	32,200.00
Icecream machien Power gurd	2	189,950.00			220,000.00	409,950.00	37,990.00			40,995.00	78,985.00	330,965.00	151,960.00
string hoppers machine	1	250.00				250.00	25.00			25.00	50.00	200.00	225.00
themo flask	1	2,780.00				2,780.00	278.00			278.00	556.00	2,224.00	2,502.00
Wall Mount Screen	2				31,000.00	31,000.00				3,100.00	3,100.00	27,900.00	0.00
Air Rifle	1				25,000.00	25,000.00				2,500.00	2,500.00	22,500.00	0.00
Humidity Meter	1				77,000.00	77,000.00				7,700.00	7,700.00	69,300.00	0.00
Laser Pointer	2				3,700.00	3,700.00				370.00	370.00	3,330.00	0.00
Water Activity Meter	1				472,500.00	472,500.00				47,250.00	47,250.00	425,250.00	0.00
Stainless steel Stuffer (Sausage)	1				137,500.00	137,500.00				13,750.00	13,750.00	123,750.00	0.00
Television	1				52,999.00	52,999.00				5,299.90	5,299.90	47,699.10	0.00
TV Antena	1				1,750.00	1,750.00				175.00	175.00	1,575.00	0.00
Thermocouple prob	20				62,400.00	62,400.00				6,240.00	6,240.00	56,160.00	0.00
Promote Packaging Methods Project											0.00	0.00	0.00
Electrical Equipment		51,308.00				51,308.00	35,915.60			5,130.80	41,046.42	10,261.58	15,392.40
Balance		5,218,063.77	210,500.00	0.00	1,865,569.00	7,294,132.77	3,929,160.25	63,150.00	0.00	473,007.36	4,465,317.61	2,828,815.16	1,288,903.52

Descriptions	No	Balance as at 1.1.2014	Adjustment to Opening Balance	Disposed	Additions During the Year	Balance as at 31.12.2014	Aggregated Depreciation as at 1.1.2014	Adjustment to Opening Balance	Disposed	Depreciation for the Year	Aggregated Depreciation as at 31.12.2014	Balance as at 31.12.2014	Balance as at 31.12.2013
		Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs
Furniture & Fittings													
Office Laboratory Workshop & Mill		3,912,102.58				3,912,102.58	3,912,102.58				3,912,102.58	0.00	0.00
Office Equipment - Conference Table	1	42,000.00				42,000.00	42,000.00				42,000.00	0.00	0.00
Office Equipment - Conference Chairs	25	118,750.00				118,750.00	118,750.00				118,750.00	0.00	0.00
At 1400 writing table	2	15,149.91				15,149.91	15,149.91				15,149.91	0.00	0.00
At 135 Side returns	2	11,362.44				11,362.44	11,362.44				11,362.44	0.00	0.00
At S2 drawers	2	7,574.97				7,574.97	7,574.97				7,574.97	0.00	0.00
500 TGA chairs	2	15,926.85				15,926.85	15,926.85				15,926.85	0.00	0.00
6404 EA V/chairs	4	13,207.62				13,207.62	13,207.62				13,207.62	0.00	0.00
Utility writing table	2	15,981.23				15,981.23	15,981.23				15,981.23	0.00	0.00
Utility armchairs	2	4,721.73				4,721.73	4,721.73				4,721.73	0.00	0.00
Utility chairs W/outarms	4	9,080.25				9,080.25	9,080.25				9,080.25	0.00	0.00
Standard Steel cupboard	1	6,658.78				6,658.78	6,658.78				6,658.78	0.00	0.00
Filling cabinet - for drawers	3	22,950.00				22,950.00	22,950.00				22,950.00	0.00	0.00
Filling cabinet	8	65,558.64				65,558.64	65,558.64			3,286.00	59,874.62	5,684.02	8,970.02
Side unit 30*20*13 with brown tap	1	4,347.98				4,347.98	4,347.98				4,347.98	0.00	0.00
Cash Box - Standard	1	1,289.19				1,289.19	1,289.19				1,289.19	0.00	0.00
Table Fans	5	24,540.00				24,540.00	22,062.00			1,239.00	23,301.00	1,239.00	2,478.00
Computer table	2	20,200.00				20,200.00	20,200.00				20,200.00	0.00	0.00
Cupboards	6	59,860.00				59,860.00	37,715.00			4,674.00	42,389.00	17,471.00	22,145.00
Aluminium Cupboards	1	30,000.00				30,000.00	15,000.00			3,000.00	18,000.00	12,000.00	15,000.00
Tables	31	235,791.25				235,791.25	220,373.03			8,259.13	228,632.16	7,159.09	15,418.22
Steel Table	9	96,670.00				96,670.00	94,048.00			2,622.00	96,670.00	0.00	2,622.00
Cupboards	1	14,500.00				14,500.00	14,500.00				14,500.00	0.00	0.00
Steel filling cabinet	11	88,618.82				88,618.82	77,975.52			5,321.64	83,297.16	5,321.66	10,643.30
Steel writing tables	7	46,850.00				46,850.00	46,850.00				46,850.00	0.00	0.00
Wooden tables	5	17,500.00				17,500.00	17,500.00				17,500.00	0.00	0.00
Computer table	18	117,400.00				117,400.00	90,392.40			5,635.00	96,027.40	21,372.60	27,007.60
Laboratory - Tables	2	8,000.00				8,000.00	8,000.00				8,000.00	0.00	0.00
- Stools	18	14,910.00				14,910.00	12,878.00			1,016.00	13,894.00	1,016.00	2,032.00
Conference - Chairs	46	99,418.00				99,418.00	99,418.00				99,418.00	0.00	0.00
Library Cupboards	2	24,829.06				24,829.06	24,829.06				24,829.06	0.00	0.00
Tender Box	1	2,125.00				2,125.00	2,125.00				2,125.00	0.00	0.00
Filling rack	2	9,850.00				9,850.00	9,850.00				9,850.00	0.00	0.00
Dining Table	1	3,000.00				3,000.00	3,000.00				3,000.00	0.00	0.00
Tea Table	1	1,500.00				1,500.00	1,500.00				1,500.00	0.00	0.00
Chairs	27	85,188.25				85,188.25	57,341.97			6,248.83	63,590.80	21,597.45	27,846.28
Arm Chair	10	35,120.00				35,120.00	20,396.00			3,312.00	23,708.00	11,412.00	14,724.00
Plastic Chairs	138	87,991.00				87,991.00	64,609.80			7,749.10	72,358.90	15,632.10	23,381.20
Steel chairs	4	13,814.00				13,814.00	13,814.00				13,814.00	0.00	0.00
Typing Tables	2	9,980.00				9,980.00	9,980.00				9,980.00	0.00	0.00
Conference - Tables	1	29,200.00				29,200.00	29,200.00				29,200.00	0.00	0.00
- Chairs	10	77,900.00				77,900.00	77,900.00				77,900.00	0.00	0.00
Steel Cupboard	7	52,950.00				52,950.00	52,950.00				52,950.00	0.00	0.00
Racks	7	22,625.00			22,850.00	45,475.00	20,875.00			4,035.00	24,910.00	20,565.00	1,750.00
Stand Fans	5	21,650.00				21,650.00	20,900.00			750.00	21,650.00	0.00	750.00
Metress	69	142,622.00			86,128.00	228,750.00	124,841.60			13,057.90	137,899.50	90,850.50	17,780.40
Stools	2	5,050.00				5,050.00	3,770.00			160.00	3,930.00	1,120.00	1,280.00
Pillows	14	2,750.00				2,750.00	1,814.00			234.00	2,048.00	702.00	936.00
Nets	2	1,500.00				1,500.00	1,500.00				1,500.00	0.00	0.00
Beds	4	23,150.00				23,150.00	18,650.00			1,355.00	20,005.00	3,145.00	4,500.00
mage boards	2	3,850.00				3,850.00	1,925.00			385.00	2,310.00	1,540.00	1,925.00
Mahogani Bads	4	83,200.00				83,200.00	49,920.00			8,320.00	58,240.00	24,960.00	33,280.00
Beds	18				213,920.00	213,920.00				21,392.00	21,392.00	192,528.00	0.00
Mahogani Cupboard	1	64,000.00				64,000.00	38,400.00			6,400.00	44,800.00	19,200.00	25,600.00
Sub Total		5,944,764.55	0.00	0.00	322,898.00	6,267,662.55	5,684,695.53	0.00	0.00	108,451.60	5,793,147.13	474,515.42	260,069.02

Descriptions	No	Balance as at 1.1.2014 Rs	Adjustment to Opening Balance Rs	Disposed Rs	Additions During the Year Rs	Balance as at 31.12.2014 Rs	Aggregated Depreciation as at 1.1.2014 Rs	Adjustment to Opening Balance Rs	Disposed Rs	Depreciation for the Year Rs	Aggregated Depreciation as at 31.12.2014 Rs	Balance as at 31.12.2014 Rs	Balance as at 31.12.2013 Rs
Furniture & Fittings Balance C/F		5,944,764.55	0.00	0.00	322,898.00	6,267,662.55	3,684,695.53	0.00	0.00	108,451.60	5,793,147.13	474,515.42	260,069.02
Filling cabinet	18	260,205.00			33,040.00	293,245.00	148,934.50			29,324.50	178,259.00	114,986.00	111,270.50
Kitchen cupboards	1	203,320.00				203,320.00	142,324.00			20,332.00	162,656.00	40,664.00	60,996.00
Computer tables	10	65,556.00			9,900.00	75,456.00	28,361.10			7,545.60	35,906.70	39,549.29	37,194.90
Plastic chairs	40	25,960.00				25,960.00	17,262.00			2,596.00	19,858.00	6,102.00	8,698.00
Computer chairs	7	29,505.20			11,300.00	40,805.20	15,042.59			4,080.52	19,123.11	21,682.08	14,462.61
Chairs	88	338,973.00				338,973.00	237,281.10			33,897.30	271,178.40	67,794.60	101,691.90
Executive chairs	31	185,742.13			57,915.00	243,657.13	123,869.40			24,365.71	148,235.10	95,422.02	61,872.73
Auditorium chairs	140	986,125.00				986,125.00	690,287.50			98,612.50	788,900.00	197,225.00	295,837.50
Tables	36	510,903.36				510,903.36	331,474.70			51,090.34	382,565.04	128,338.32	179,428.66
Reading tables	8	97,472.41				97,472.41	48,736.20			9,747.24	58,483.44	38,988.97	48,736.21
Clark table	7	54,900.00				54,900.00	27,450.00			5,490.00	32,940.00	21,960.00	27,450.00
Mira table	2	13,200.00				13,200.00	6,600.00			1,320.00	7,920.00	5,280.00	6,600.00
Dining tables	3	57,960.00				57,960.00	40,572.00			5,796.00	46,368.00	11,592.00	17,388.00
Head table	1	87,400.00				87,400.00	61,180.00			8,740.00	69,920.00	17,480.00	26,220.00
Board room table	1	149,500.00				149,500.00	104,650.00			14,950.00	119,600.00	29,900.00	44,850.00
OHP Stands	3	60,030.00				60,030.00	42,021.00			6,003.00	48,024.00	12,006.00	18,009.00
Podium	1	19,435.00				19,435.00	13,604.50			1,943.50	15,548.00	3,887.00	5,830.50
Beads	12	103,500.00				103,500.00	72,450.00			10,350.00	82,800.00	20,700.00	31,050.00
Book racks	2	38,640.00				38,640.00	27,048.00			3,864.00	30,912.00	7,728.00	11,592.00
Sofa Set	1	129,892.50				129,892.50	63,533.50			12,989.25	76,522.75	53,369.75	66,359.00
Sofa set stool	1	6,500.00				6,500.00	3,900.00			650.00	4,550.00	1,950.00	2,600.00
Noties board	1	23,300.00				23,300.00	13,980.00			2,330.00	16,310.00	6,990.00	9,320.00
Fin board	2	29,160.00				29,160.00	17,496.00			2,916.00	20,412.00	8,748.00	11,664.00
reading chair	32	140,492.80				140,492.80	70,246.42			14,049.28	84,295.70	56,197.10	70,246.38
Office chair	12	38,400.00				38,400.00	19,200.00			3,840.00	23,040.00	15,360.00	19,200.00
Dressing table	5	15,580.00			40,320.00	55,900.00	9,348.00			5,590.00	14,938.00	40,962.00	6,232.00
High back chairs	7	56,267.75				56,267.75	22,507.13			5,626.78	28,133.92	28,133.84	33,760.62
Ex- Tables	5	79,395.75				79,395.75	22,166.56			7,939.58	30,106.14	49,289.62	57,229.19
Side tables	2	17,280.00				17,280.00	6,912.00			1,728.00	8,640.00	8,640.00	10,368.00
Movable cabinet	2	16,200.00				16,200.00	6,480.00			1,620.00	8,100.00	8,100.00	9,720.00
moveble cabinet for UPS CPU	2	5,940.00				5,940.00	2,376.00			594.00	2,970.00	2,970.00	3,564.00
Ex- high back chairs	2	19,620.00				19,620.00	7,848.00			1,962.00	9,810.00	9,810.00	11,772.00
Ex - law back chairs	7	58,850.00				58,850.00	13,142.00			5,885.00	24,027.00	34,823.00	40,708.00
off- cupboards	4	13,800.00			36,547.50	50,347.50	5,520.00			5,034.75	10,554.75	39,792.75	8,280.00
Filling cabinet -4 draw	1	17,500.00				17,500.00	7,000.00			1,750.00	8,750.00	8,750.00	10,500.00
Wrating tables	3	39,900.00				39,900.00	10,210.00			3,990.00	14,200.00	25,700.00	29,690.00
Cabinet	1	15,950.00				15,950.00	3,190.00			1,595.00	4,785.00	11,165.00	12,760.00
glass pade	1	4,050.00				4,050.00	405.00			405.00	810.00	3,240.00	3,645.00
catalog box	1	3,655.22				3,655.22	1,827.57			365.50	2,193.07	1,462.16	1,827.65
Exhbtion hut	1	92,180.00				92,180.00	36,872.00			9,218.00	46,090.00	46,090.00	55,308.00
Book racks	4	80,326.40				80,326.40	40,163.20			8,032.64	48,195.84	32,130.56	40,163.20
display racks	4	89,152.00				89,152.00	44,576.00			8,915.20	53,491.20	35,660.80	44,576.00
Taval racks	23	43,750.00			16,576.00	60,326.00	15,875.00			6,032.60	21,907.60	38,418.40	27,875.00
Exhbtion board	1	8,500.00				8,500.00	4,250.00			850.00	5,100.00	3,400.00	4,250.00
Curtens	1				14,000.00	14,000.00				1,400.00	1,400.00	12,600.00	0.00
Verenda Chairs	10				49,500.00	49,500.00				4,950.00	4,950.00	44,550.00	0.00
Sub Total		10,278,734.07	0.00	0.00	591,996.50	10,870,730.57	8,317,868.50	0.00	0.00	568,758.39	8,886,626.89	1,984,103.68	1,960,865.57

Descriptions	No	Balance as at 1.1.2014	Adjustment to Opening Balance	Disposed	Additions During the Year	Balance as at 31.12.2014	Aggregated Depreciation as at 1.1.2014	Adjustment to Opening Balance	Disposed	Depreciation for the Year	Aggregated Depreciation as at 31.12.2014	Balance as at 31.12.2014	Balance as at 31.12.2013
		Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs	Rs
Electric & Other Fittings													
Office Laboratory Workshop & Mill		522,917.41				522,917.41	522,917.41				522,917.41	0.00	0.00
Sink & fittings	4	21,050.00				21,050.00	15,170.00			980.00	16,150.00	4,900.00	5,880.00
Scien	1	67,000.00				67,000.00	67,000.00				67,000.00	0.00	0.00
Ceiling fan	11	50,240.00				50,240.00	24,507.00			4,219.00	28,726.00	21,514.00	25,733.00
Name Board	9	200,600.00				200,600.00	150,365.00			7,860.00	158,225.00	42,375.00	50,235.00
power casing	1	2,750.00				2,750.00	275.00			275.00	550.00	2,200.00	2,475.00
Cartan - Colombo office		112,512.96				112,512.96	45,005.19			11,251.30	56,256.50	56,256.46	67,507.76
Electrical fittings for Generator		393,700.00				393,700.00	393,700.00				393,700.00	0.00	0.00
House Meter	1				8,250.00	8,250.00				825.00	825.00	7,425.00	0.00
Mega Heater	1				560.00	560.00				56.00	56.00	504.00	0.00
Sub total		1,370,770.37	0.00	0.00	8,810.00	1,379,580.37	1,218,939.61	0.00	0.00	25,466.30	1,244,405.91	135,174.46	151,830.76
Books													
Library		1,481,078.55				1,481,078.55	1,246,518.19			60,801.00	1,307,319.19	173,759.36	234,560.36
Sub Total		1,481,078.55	0.00	0.00	0.00	1,481,078.55	1,246,518.19	0.00	0.00	60,801.00	1,307,319.19	173,759.36	234,560.36
Computer													
Note Book Computer	14	1,347,251.75	130,000.00		329,000.00	1,806,251.75	1,242,751.75	97,500.00		171,250.00	1,511,501.75	294,750.00	104,500.00
Computer U.P.S.	53	347,157.44			19,350.00	366,507.44	281,102.94			34,742.00	315,844.94	50,662.50	66,054.50
DVD Writer	7	42,950.00				42,950.00	27,500.00			6,112.50	33,612.50	9,337.50	15,450.00
Computer Monitors	15	154,500.00			37,500.00	192,000.00	88,575.00			35,462.50	124,037.50	67,962.50	65,925.00
Computer	2				98,900.00	98,900.00				24,725.00	24,725.00	74,175.00	0.00
Computer Bag	2				6,400.00	6,400.00				1,600.00	1,600.00	4,800.00	0.00
Computer & Printers	26,32	3,642,118.12				3,642,118.12	3,558,868.12			60,937.50	3,619,805.62	22,312.50	83,250.00
Computer Software-Thibus	2	39,768.75				39,768.75	39,768.75				39,768.75	0.00	0.00
Computer Modem	1	20,790.00				20,790.00	20,790.00				20,790.00	0.00	0.00
Flash memory	43	142,815.00				142,815.00	112,802.50			16,375.00	129,177.50	13,637.50	30,012.50
Pen drives	11				21,300.00	21,300.00				5,325.00	5,325.00	15,975.00	0.00
Internet card	1				1,500.00	1,500.00				375.00	375.00	1,125.00	0.00
USB hub	1				1,500.00	1,500.00				375.00	375.00	1,125.00	0.00
hard disk	3	29,250.00				29,250.00	18,375.00			6,000.00	24,375.00	4,875.00	10,875.00
Dual core processor	2	16,500.00				16,500.00	6,375.00			4,125.00	10,500.00	6,000.00	10,125.00
speaker set	4	5,400.00				5,400.00	3,600.00			1,350.00	4,950.00	450.00	1,800.00
Plotter with computer	1	383,000.00				383,000.00	383,000.00				383,000.00	0.00	0.00
Laser Printers	8				71,200.00	71,200.00				17,800.00	17,800.00	53,400.00	0.00
Sub Total		6,171,501.06	130,000.00	0.00	586,650.00	6,888,151.06	5,783,509.06	97,500.00	0.00	386,554.50	6,267,563.56	620,587.50	387,992.00
Telephone & Fittings													
Telephone	15	114,428.61			3,061.50	117,490.11	95,183.45			8,970.82	104,154.27	13,335.84	19,245.17
Intercom Phone	22	155,957.55			5,660.00	161,617.55	148,423.55			3,550.00	151,973.54	9,644.01	7,534.00
mobial phone	8	91,830.00			6,600.00	98,430.00	59,194.00			12,866.00	72,060.00	26,370.00	32,636.00
Mobial internet system	2	20,790.00				20,790.00	19,074.00			858.00	19,932.00	858.00	1,716.00
net work switch	1	1,800.00				1,800.00	720.00			360.00	1,080.00	720.00	1,080.00
inter net network	9	66,560.00			9,060.00	75,620.00	53,050.00			8,708.00	61,758.00	13,862.00	13,510.00
Dialog Dongle	1				1,500.00	1,500.00				300.00	300.00	1,200.00	0.00
Sub Total		451,366.16	0.00	0.00	25,881.50	477,247.66	375,644.99	0.00	0.00	35,612.82	411,257.81	65,989.85	75,721.17
Vehicles													
Jeeps	2	410,667.72				410,667.72	410,665.72				410,665.72	2.00	2.00
Van	2	9,589,850.00				9,589,850.00	5,949,849.00			1,820,000.00	7,769,849.00	1,820,001.00	3,640,001.00
Lorry	2	464,554.67				464,554.67	464,552.67				464,552.67	2.00	2.00
Cycle	1	1,250.00				1,250.00	1,250.00				1,250.00	0.00	0.00
Cycle	2	13,900.00				13,900.00	13,900.00				13,900.00	0.00	0.00
Motor Cycle	7	440,060.15				440,060.15	440,060.15				440,060.15	0.00	0.00
Double Cab, 4 WD	2	4,725,000.00				4,725,000.00	4,724,998.00				4,724,998.00	2.00	2.00
Double Cab, 4 WD	3	8,457,725.00				8,457,725.00	6,159,483.00			1,149,120.00	7,308,603.00	1,149,122.00	2,298,242.00
Motor Car	1	1,450,000.00				1,450,000.00	1,449,999.00				1,449,999.00	1.00	1.00
Jeeps	1	2,800,000.00				2,800,000.00	2,800,000.00				2,800,000.00	0.00	0.00
Gas conation	1	98,225.00				98,225.00	98,225.00				98,225.00	0.00	0.00
Land Rower	1	42,731.28				42,731.28	42,730.28				42,730.28	1.00	1.00
Kubota tractor	1	11,450.00				11,450.00	11,449.00				11,449.00	1.00	1.00
Sub Total		28,505,413.82	0.00	0.00	0.00	28,505,413.82	22,567,161.82	0.00	0.00	2,969,120.00	25,536,281.82	2,969,132.00	5,938,252.00
Agro-Farm													
Farm- Garden		302,948.93				302,948.93	302,948.92				302,948.92	0.00	0.00
Farm- Garden -Water System		542,829.55				542,829.55	542,829.56				542,829.56	0.00	0.00
Farm		408,155.74				408,155.74	408,155.74				408,155.74	0.00	0.00
Sub Total		1,253,934.22	0.00	0.00	0.00	1,253,934.22	1,253,934.22	0.00	0.00	0.00	1,253,934.22	0.00	0.00



388

විගණකාධිපති දෙපාර්තමේන්තුව
கணக்காய்வாளர் தலைமை அதிபதி திணைக்களம்
AUDITOR GENERAL'S DEPARTMENT



මගේ අංකය
எனது இல.
My No.

NC/AP/E/IPHT/01/14/02

ඔබේ අංකය
உமது இல.
Your No.

දිනය
திகதி
Date

03 December 2015

The Chairman,

Institute of Post-Harvest Technology.

Report of the Auditor General on the Financial Statements of the Institute of Post-Harvest Technology for the year ended 31 December 2014 in terms of Section 14(2) (C) of the Finance Act, No. 38 of 1971.

The audit of financial statements of the Institute of Post-Harvest Technology for the year ended 31 December 2014 comprising the statement of financial position as at 31 December 2014 and the statement of financial performance, statement of changes in equity and cash flow statement for the year then ended and a summary of significant accounting policies and other explanatory information was carried out under my direction in pursuance of provisions in Article 154(1) of the Constitution of the Democratic Socialist Republic of Sri Lanka read in conjunction with Section 13 (1) of the Finance Act, No. 38 of 1971. My comments and observations which I consider should be published with the Annual Report of the Institute in terms of Section 14 (2) (c) of the Finance Act appear in this report. A detailed report in terms of Section 13 (7) (a) of the Finance Act, was issued to the Chairman of the Institute on 12 August 2015.

1.2 Management's Responsibility for the Financial Statements

The management is responsible for the preparation and fair presentation of these financial statements in accordance with Sri Lanka Public Sector Accounting Standards and for such internal control as the management determines is necessary to enable the preparation of financial statements that are free from material misstatements whether due to fraud or error.



1.3 Auditor's Responsibility

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Sri Lanka Auditing Standards consistent with International Standards of Supreme Audit Institutions (ISSAI 1000-1810). Those Standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatements of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Institute's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Institute's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of financial statements. Sub-sections (3) and (4) of Section 13 of the Finance Act, No. 38 of 1971 give discretionary powers to the Auditor General to determine the scope and extent of the audit.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

1.4 Basis for Qualified Opinion

My opinion is qualified based on the matters described in paragraph 2.2 of this report.

Financial Statements

2.1 Qualified Opinion

In my opinion, except of the matters described in paragraph 2.2 of this report the financial statements give a true and fair view of the financial position of Institute of Post-Harvest Technology as at 31 December 2014 and its financial performance and cash flows for the year then ended in accordance with Sri Lanka Public Sector Accounting Standards.

2.2 Comments on Financial Statements.

2.2.1 Going Concern of the Institute

As the Institute had incurred losses continuously since the year 2011, an increase in the accumulated loss, and a decrease in the net assets can be observed in accordance with the following particulars. Accordingly, it appears that further continuation of the Institute without a financial assistance of the Government, is questionable.

Year	2011	2012	2013	2014
	-----	-----	-----	-----
	Rs.	Rs.	Rs.	Rs.
Loss	(7,480,881)	(4,893,838)	(16,567,327)	(17,488,986)
Net Assets	145,129,332	131,597,734	115,225,967	100,231,803

2.2.2 Accounting Deficiencies

The following observations are made.

- (a) The value of laboratory equipment valued at Rs. 47,395,575 obtained on credit basis during the year under review, had not been accounted.

- (b) Expenses of Rs. 4,498,267 incurred on the repairs of buildings in the year prior to the year under review, had been shown as work in progress under non-current assets instead of being adjusted retrospectively.
- (c) Capital grants amounting to Rs. 70,401,000 received from the Treasury in the year under review, had not been brought to accounts. Instead, it had been shown as unidentified receipts in the bank reconciliation statement by the end of the year.

2.2.3 Unexplained Differences

The following observations are made.

- (a) According to the financial statements as at 31 December of the year under review, the employee loan balance amounted to Rs.539,540, whereas it was Rs.482,917 according to the debtors' schedules. Thus, a difference of Rs. 56,623 was observed.
- (b) Even though the Income from the lecture halls fees amounting to Rs. 442,850 had been shown in the statement of financial performance, it was Rs. 548,450 according to the subsidiary registers, thus observing a difference of Rs. 105,600.

2.3 Accounts Receivable and Payable

The following observations are made.

- (a) Action had not been taken either to recover or settle 06 debit balances totaling Rs. 417,036 and 10 credit balances totaling Rs. 8,414,980 that had remained due over a long period.
- (b) Action had not been taken to recover a value of Rs. 93,500 in regard of 175 plastic crates granted on credit basis to the National Food Promotions Board, and the Agricultural Crops Research Development Board in Mahailuppallama.

2.4 Non-compliance with Laws, Rules, Regulations and Management Decisions

Even though the recommendation of the Department of National Planning, and the approval of the Cabinet of Ministers should have been sought for the projects over Rs. 20 million in terms of National Budget Circular No. 138 of 04 April 2008, a sum of Rs. 63,932,281 had been paid for the laboratory renovation project.

2.5 Transactions not Supported by Adequate Authority

The following observations are made.

- (a) Fuel allowance amounting to Rs. 121,000 had been paid in 10 instances to a Coordinating Secretary of the Minister of Agriculture for investigations and observations of the Institute of Post-Harvest Technology in the year under review without proper approval. However, none of the reports on the observations made by the said officer had been presented to the management of the Institute. Furthermore, the Board of Directors had not approved the aforesaid appointment, and such a post had not been created in the approved cadre.
- (b) Contrary to the objectives of the Institute, expenses totaling Rs. 193,150 had been incurred on various activities relating to welfare without approval of the Board of Directors.
- (c) Without obtaining the approval of the Treasury, stocks damaged by floods totaling Rs. 1,007,908 had been written off.
- (d) Contrary to Paragraph 02 of the Management Services Circular No. 5/2014 dated 21 November 2014, a sum of Rs. 260,010 had been paid as bonus for the year 2014 without obtaining the approval of the Treasury.

3. Financial Review

3.1 Financial Result

According to the financial statements presented, the operations of the Institute for the year ended 31 December 2014 had resulted in a deficit of Rs.17,488,986 as compared with the corresponding deficit of Rs.16,567,327 for the preceding year, thus indicating a deterioration of Rs.921,659 in the financial results. The increase in the deficit for the year under review had mainly been caused by the increase in the provision for depreciation on the fixed assets by a sum of Rs. 207,330, and writing off of a sum of Rs. 1,007,908 in view of the damages caused by floods.

3.2 Management of Investments

As investments amounting to Rs. 12,748,000 existed as fixed deposits during the period from 2012 to 2014, had been withdrawn and obtained capital assets therefrom, investments of the Institute, had diminished and the income from the investments had deprived of.

4. Operating Review

4.1 Performance

The following observations are made.

- (a) A number of 7,937 plastic crates worth Rs. 3,475,042 that had been purchased 8 years ago under the program to promote the plastic crates in order to mitigate the post-harvest damages caused during the transportation of fruits and vegetables, had remained undistributed even by the end of the year under review.
- (b) Under development projects for the year 2012, four mobile stalls worth Rs. 350,000 that had been manufactured under the program to distribute equipment among the beneficiaries with a contribution of 50 per cent from them, had remained at the stores without being distributed even by the end of the year under review, and action had not been taken to distribute those equipment among suitable beneficiaries.

- (c) Twenty Ricecream machines worth Rs. 4,200,000 had been obtained with a view to improving the production of subsidiary crops including rice under the subsidiary crops program of the year under review. Those machines remained idle in the Institute without being distributed even by 30 June 2015 due to failure in identifying the suitable beneficiaries.
- (d) Even though the Institute should implement research projects that are suitable to the field, easily executable, and meet the market demand, agricultural and post-harvest filed together with the corporation of research officers, the staff engaged in promotional activities, and the relevant beneficiary groups in a manner that paves the way for identification of research projects, preparation of research proposals and making it possible to achieve the mission and objectives of the Institute, the productivity of the projects implemented by the Institute remained low.
- (e) Most of the machinery out of 31 invented by the Institute of Post-Harvest Technology since its inception incurring hefty costs under various research projects, remain only in the exhibition level. Actions had not been adequately taken to promote and introduce those machinery and technologies to the market. An expense of Rs. 3,871,862 had been incurred for promotional services during the year under review including sums of Rs. 1,742,236 and 2,129,626 paid as salaries to 03 project officers, and field officers and other employees working at 09 field centers respectively. However, priority had not been given to the activities relating to the dissemination of results of the researches conducted by the Institute.
- (f) In accordance with the Action Plan of the Institute, development projects are implemented under 06 fields, and a sum of Rs. 738,054 had been spent on the training programs of those projects in the year under review. However, the Institute had not maintained a data system for the other development projects except for rice, and productions based on rice.

4.2 Under-utilization of Funds

A sum totaling Rs. 13,458,830 including sums of Rs. 4,207,384 earned from the sale of barrels used for steaming paddy, and Rs. 9,251,446 earned from sale of plastic crates under the program to promote the plastic crates in order to mitigate the post-harvest damages caused during the transportation of fruits and vegetables, had been retained in fixed deposits even by 30 June 2015 without being utilized for the promotion of relevant programs.

4.3 Idle and Under-utilized Assets

The following observations are made.

- (a) The recommendations made by the committee on 08 July 2013 appointed relating to the disposal of the noodle manufacturing machines operated in the noodles manufacturing factory of the Institute, had stated that 02 boilers in the noodle factory that require higher maintenance costs , a drier and a generator be disposed appropriately. However, even after 02 years, the recommendations of the committee had not been executed by 30 July 2015.
- (b) Even though 06 motor vehicles valued at Rs.931,453 belonging to the Institute had been lying idle over periods ranging from 04 to 12 years, action had not been taken for the disposal of those motor vehicles.

4.4 Uneconomic Transactions

A sum of Rs. 44,530 had been incurred on taxies for short-distance travels during the year under review despite the 08 pool vehicles in running condition existed in the Institute.

4.5 Weaknesses in Contract Administration

The following observations are made in connection with the purchase of equipment worth Rs. 61,686,875 for the laboratory of the Institute during the year under review.

- (a) In accordance with guideline 4.4.2 (b) of the Procurement Guidelines , bids presented by the bidders for each equipment should be evaluated. However, when purchases were made under 2 categories namely Lot No. 01 and Lot No. 2 relating to 14 types

of equipment and services, the bidders who had not presented bids for all of the equipment under each lot, had been rejected without any justification.

- (b) Although 346 technical specifications stated in the tender documents should have been evaluated in the tender process for purchasing 10 machinery, only 60 had been evaluated. Despite the lowest bidder had fulfilled the technical specifications that had been evaluated, tender had been awarded to an other bidder by unfairly excluding the said specifications. Hence, a loss of Rs. 16,607,116 had incurred.

4.6 Personnel Administration

Two employees had been recruited on casual basis for the posts of Roneo machine operator and personal assistant that had not been approved posts in the cadre of the Institute, and a sum of Rs. 364,036 had been paid as salaries and allowances in the year under review.

5. Accountability and Good Governance

5.1 Presentation of Financial Statements

In accordance with Section 03 of the Public Finance Circular, No. PF/PE 21 dated 24 May 2002, financial statements should be presented to the Auditor General within 60 days after the close of the financial year. However, the Institute had presented the financial statements for the year under review on 02 July 2015.

5.2 Procurement Plan

Purchases valued at Rs. 540,830 had been made outside the Procurement Plan prepared for the year under review.

5.3 Budgetary Control

The following observations are made.

Variances ranging from 42 per cent to 187 per cent were observed between the budget and the actual expenditure of the year under review, and as such the budget had not been made use of as an effective instrument of management control.

6. Systems and Controls

Deficiencies in systems and controls observed during the course of audit were brought to the notice of the Chairman of the Institute from time to time. Special attention is needed in respect of the following areas of control.

- (a) Collection of Revenue
- (b) Budgetary Control
- (c) Personnel Management
- (d) Implementation of Research and Development Projects
- (e) Control of Vehicles



H.M. Gamini Wijesinghe

Auditor General

Secretary,
Ministry of Agriculture,
Govijana Mandiraya,
No.80/05
Rajamalwatta Road,
Battaramulla.

Explanations on the actions taken to rectify the deficiencies indicated in audit queries
and audit reports - Annual Report for year 2014
Institute of Post-Harvest Technology

This refers to the matters in audit report.

1. 2.2.1

Instructions have been given to rectify the indicated deficiencies, in the final accounts of the impending year.

2. 2.4

Instructions have been given to take action in a proper manner in future, in accordance with the laws, regulations and management decisions.

3. 2.5

Instructions have been given not to make any disbursement on welfare in future contradicting to the objectives of the institute.

Instructions have been given not to pay bonus in contradiction to the relevant circular and without treasury approval.

4. 4.1

Performance

Instructions have been given to distribute the remaining plastic crates which were purchased to reduce post-harvest losses.

In the meantime, instructions have been given to distribute the ice-creams in stocks quickly and facilitate the beneficiaries with mobile stalls which are to be provided for them.

5. 4.5 **Deficiencies in Contract Administration**

Instructions have been given to provide clear explanations regarding the audit queries on the equipment belonged to the laboratories of the institute and to explain the actual situations to audit.

6. **Cadre**

Instructions have been given to take immediate action to fill the vacancies in the approved cadre.

Dr. B.M.K.S. Thilakaratne,
Executive Director,
Institute of Post-Harvest Technology,
Anuradhapura.