

INSTITUTE OF POST HARVEST TECHNOLOGY

ANNUAL REPORT- 2016

Head office:

G-34, Ministry of Agriculture
“Govijana Mandiraya”,
No:80/5, Rajamalwattha Lane
Battaramulla, Sri Lanka.

Research and Development Centre:

Jayanthi Mawatha.
Anuradhapura,
Sri Lanka.

Institute of Post-Harvest Technology
G-34, Ministry of Agriculture,
“Govijana Mandiraya”,
No: 80/5, Rajamalwattha Lane,
Battaramulla.
28 - 02 - 2017

Hon. Minister of Agriculture
Ministry of Agriculture,
“Govijana Mandiraya”,
Battaramulla.

Hon. Minister,

ANNUAL REPORT – 2016

In terms of section 14(2) of the Finance Act No. 38 of 1971, I have the honor to submit to you the Annual Report and the Statement of Accounts of the Institute of Post-Harvest Technology, for the year 2016.

Yours faithfully,

Kavinda Dissanayake
Chairman
Institute of Post-Harvest Technology

01. Acts, Legislation & Corporate Governance

The Institute of Post-Harvest Technology functioning under the purview of Ministry of Agriculture established on 19th June 2000 by the Extraordinary Gazette of the Democratic Socialist Republic of Sri Lanka No. 1137/10 for the purpose of carrying out post-harvest research and development on all agricultural crops. The newly established institute has taken over the functions of the Rice Processing Research and Development Centre (RPRDC) of the Paddy Marketing Board at Anuradhapura, which was set up with FAO/UNDP assistance in 1976. The new Institute has been assigned the functions and responsibilities for carrying out post-harvest research and development on not only rice and grains but also on other field crops, vegetables, fruits, spice crops and cut flowers.

OUR VISION

To be the center of excellence in Postharvest Technology

OUR MISSION

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

The objectives of the Institute as per the mandate given in the Gazette Notification are as follows;

The Institute of Post-Harvest Technology (IPHT), operating under the Ministry of Agriculture, functions as the main institution in Sri Lanka engaged in improving the post-harvest engineering and technology of cereals, pulses, oil seeds, other field crops, fruits, vegetables, spices and other ornamental plants through research, training, extension and other development activities. Broadly the aims and objectives of the institute are as follows:

1. Prevention of postharvest losses occurring in grains, field crops, fruits, vegetables and spice crops and cut flowers 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.
2. 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.
3. 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 increases the nutritional status of the country.
4. 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.
5. Introduce improved postharvest techniques that utilize minimum labour in order to reduce production costs of agricultural commodities.
6. 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.
7. 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. The research and extension team of the institution comprises of engineers, agriculturists, microbiologists and food technologists. An experienced supporting staff backs this team.

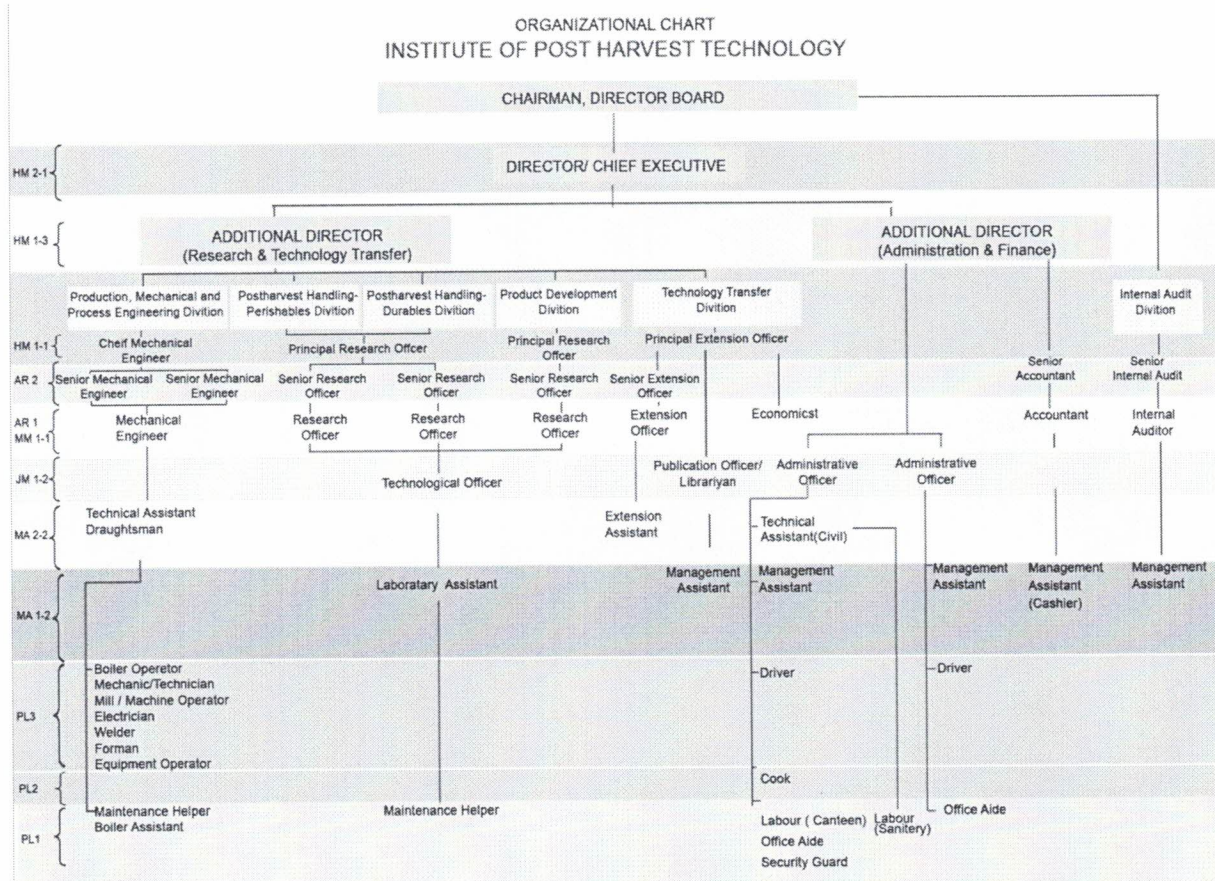
02. Board of Directors and Organization Structure

Name	Position
Prof. K.B. Palipana	Chairman
D.M. Kavinda C. Dissanayake	Chairman
Mr. R.P.A.Ranaweera Patirana	Vice Chairman
Dr. H.M.S. Hinkenda	Member of the Board
Prof. Ranjith Wijewardana	Member of the Board
Mrs. Inoka Lankathilaka	Member of the Board
Lawyer. S.P.Kumara Gunarathna	Member of the Board
Mr. D.B.Sarath	Member of the Board

Audit and management committee

Name	Position
Mrs. Inoka Lankathilake (Chairman)	Deputy Director, Department of Management Service
Mr. R.P.A.Ranaweera Patirana	Vice Chairman, Institute of Post-harvest Technology
Mr. D.B.Sarath	Member of the Board Institute of Post-harvest Technology
Dr. (Mrs).B.M.K.S. Thilakarathne	Director (January 2016 to July 2016) Institute of Post-harvest Technology
Eng. T.M.R. Dissanayake	Acting Director (July 2016 to December 2016) Institute of Post-harvest Technology
Mr.D.P.C.Swarnasiri	Additional Director (R & T T) (January 2016 to February 2016) Institute of Post-harvest Technology
Eng. (Mrs.) D.P. Senanayake	Additional Director (R & T T) (March 2016 to December 2016) Institute of Post-harvest Technology
Mr. R.K.A.P. Ramanayake	Additional Director (Admin. & Finance) Institute of Post-harvest technology
Mr. I.M.N.P.Ilangasinghe	Accountant Institute of Post-harvest technology
Mr. R.M.D. Rathnayake (Convenor)	Internal Auditor Institute of Post-harvest technology
J.A.S. Dhammika Perera (Observer)	Superintendent of Audit Auditor Generals Department

Organization Structure as per the Scheme of Recruitment (SOR) approved



Institute has re-structured its divisions in 2016 as follows and is in the process of re-structuring total organizational structure.

1. Research division
2. Engineering service division
3. Extension division
4. Laboratory service division
5. Planning and Monitoring division
6. Development Project division
7. Administration division
8. Finance division
9. Internal Audit division
10. Information Technology division

Chairman's Message

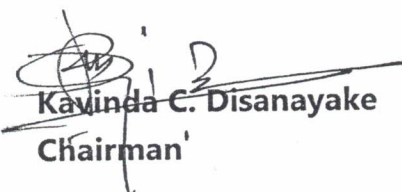
As the functions of Rice Processing and Research Development Institute which had been started in 1976 under Paddy Marketing Board were expanded, this Institute of Post-Harvest Technology was established under the Ministry of Agriculture and Agrarian Services on 19th of June 2000 in terms of the Government Agriculture Act No.11 of 1972, through a gazette notification of the extra ordinary gazette No.1137/10 of the Democratic Socialistic Republic of Sri Lanka.

The first and foremost responsibility of this institute is to create a food security by improving post-harvest technology on paddy/rice, other vegetable crops, fruit crops and spices crops through researches, trainings, project related service and other development activities.

Many research and development projects now are being implemented by this institute based on the needs on this sector in order to create a food security in supply of food items. Further, considering timely need of the sector, the projects like improving supply of mango and value added management, and the management projects on supply of vegetable in Sri Lanka and value addition etc. are undertaken and initiated by this institute.

Moreover, overall objective of these activities is to improve the productivity of the entire production and to improve the economic status of the parties who involved in the relevant sector, through these projects.

Accordingly, in order to achieve these aspirations, here it is notable that our institute has a potential capacity to extend the required contribution towards agricultural sector through development of necessary human and physical resources.


Kavinda C. Disanayake
Chairman

03. Executive Report

RESEARCH

The research programme of the Institute of Post-harvest Technology is directed towards solving technological problems confronting the postharvest industry including both fundamental and applied research, although the latter predominates in the research efforts. During the year 2016 Thirty (30) research projects has been carried out, which consist eleven (11) research projects continued from year 2015 and seventeen(17) research projects initiated in 2016. Besides, Four (04) research projects were conducted as a public-private partnership project and funded by private sector. Two (2) projects were conducted as external funding research under the grant of NSF & NRC and another two (02) projects were conducted as student projects.

Following research projects were continued from year 2015 and carried out in 2016. Some of them were completed during diferent quarters of the year.

On going reseach projects to 2015 to 2016

- a) Extension of postharvest life of 'Ambul' banana through application of 1-MCP (1-Methylcyclopropene).
- b) Design and development of a groundnut decorticator
- c) Cryogenic size reduction of chilli powder
- d) Infra-Red(IR) application of rice processing
- e) Identification of improved post-harvest technologies for onions (*Alluimrubrum* and *Alluim cepa*) cultivated in Sri Lanka
- f) Enhancement of drying efficiency of paddy by incorporating hygroscopic materials
- g) Process development for freeze preservation of local vegetable
- h) Development of technology for cleaning and de-stoning of agricultural commodities
- i) Studies of wine production from locally available fruits
- j) Processing of Cassava Flour and Utilization of flour for Food product development
- k) Estimation of heavy metal contamination in some popular vegetables grown in different districts of Sri Lanka

New projects on 2016

- a) Evaluate the effect of fruit coating on shelf life extension of lime under different storage conditions
- b) Initiation of cold chain studies to reduce postharvest losses in vegetables
- c) Determination of postharvest weight loss and quality deterioration of paddy during on farm storage
- d) Modification and assessment of IPHT maize dryer-discontinued
- e) Optimization of the dehydration process of fruits and vegetables using tray type mechanical dryer
- f) Study on drying of wet paddy under emergency conditions
- g) Control of postharvest diseases of vegetables by organic silicon sources
- h) Effect of processing on total antioxidant capacity and in vitro bio accessibility of vegetable carotenoids
- i) Analysis of nutraceuticles properties and heavy metal accumulation in traditional and improve rice varieties
- j) Quality improvement of spices using ozone sterilization
- k) Induction of fruit ripening by organic methods

External funding Research project (Granted by NSF and NRC)

- a) Studies on fruit phenology, per-harvest foliar treatments on fruit quality and enhancement of postharvest life of lime (*Citrus aurantifolia* Swingle) (Funds received by NSF)
- b) Development of postharvest treatments and storage strategies for enhancement of postharvest life of lime (*Citrus aurantifolia* Swingle)(National Research Council Funded Project) Grant No. 15-154(Fund not received)

Private funded projects

- a) Evaluation of continuous paddy parboiling equipment (online cooker) for its performance (Funds not received)
- b) Study on quality deterioration in TJC mango and application of control measures (Funds not received)
- c) Processing and quality evaluation of chili sauce develop using local chili variety with higher pungency (funds received by Pamini International (Pvt.) Ltd)
- d) Development and optimization of medium scale rice flour noodles process(Funds not received)

Student project

- a) Determination of Heavy metals (As, Pb, Cd) in selected three vegetable varieties in Anuradhapura District by using Atomic Absorption Spectrometry (AAS). Department of Food Science and Technology , Faculty of Applied Sciences, Sabaragamuwa University of Sri Lanka
- b) Levels of Cadmium, Arsenic and Lead in selected vegetables and water samples in Medawachchiya and Ipalogama divisional secretariats, Anuradhapura district of Sri Lanka. Department of Animal and Food Science, Faculty of Agriculture, Rajarata University of Sri Lanka

DEVELOPMENT PROJECTS

IPHT conducted three development projects island-wide during 2016 for effective dissemination of proper postharvest technologies developed by the institute. These three projects were funded by the Ministry of Agriculture under food security programme.

- a) Improvement of supply and value chain management practices of mango in Sri Lanka
- b) Training of trainers on postharvest loss reduction of agricultural food crops in major agricultural institutions in Sri Lanka
- c) Induction of fruit ripening by organic method

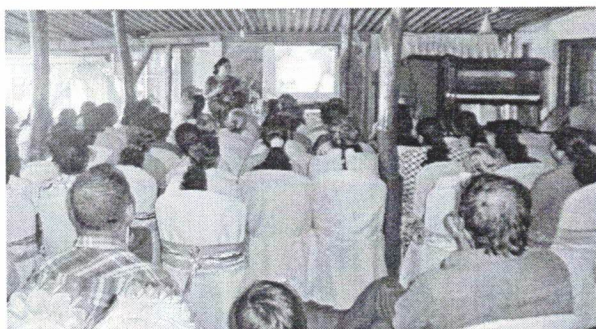
The financial progress of “Improvement of supply and value chain management practices of mango in Sri Lanka”, “Training of trainers on postharvest loss reduction of agricultural food crops in major agricultural institutions in Sri Lanka” and “Induction of fruit ripening by organic method” is of 93.15%, 99.76% and 93 % respectively and that of physical progress is 100%, 100% and 43% respectively.

Apart from above three development project “Rural level income generation/enhance the income of beneficiaries selected (Addressing climatic change impacts on marginalized agriculture communities living in Mahaweli river basin of Sri Lanka)” was conducted by IPHT under the funds of Minister of Mahaweli Development in year 2016.



TRAINING

The demand for IPHT's training has been continuously increasing during the past. The institute conducts production/extension oriented residential and non-residential training programs for producers, processors, traders and workers, students from universities and other educational institutions in the field of Postharvest Technology of grains, cereals, root & tubers, fruits and vegetables. During the year under report forty eight (48) residential training courses including study visits were conducted and 1714 individuals were trained. Two hundred and seventy three (273) non residential courses were conducted at field centres and 5752 individuals were trained.



EXTENSION

Extension division carries out its technology dissemination activities through its island wide extension Centres in liaison with government and non-government organizations. Technology dissemination through field level extension work, which is one of the major activities of the institute, was continued during the year 2016.

The island wide extension network will consist of seven Post Harvest Technology Centres located in the following major crop producing areas:

- a) Anuradhapura (covering Anuradhapura, Polonnaruwa, Trincomalee)
- b) Abanpola (covering Kurunegala, Puttalam, Gampaha)
- c) Kandy (covering Kandy, Matale, Kagall)
- d) Nuwara Eliya (covering Nuwara Eliya, Welimada)
- e) Ampara (covering Ampara, Monaragala, part of Batticallo, Mahawelli System C)
- f) Hambantota (covering Hambantota, Matara, Galle, Ambilipitiya)
- g) Kilinochchi (covering Kilinochchi, Vavuniya, Mullaitivu, Jaffna, Mannar)

Main different Sectors Selected for Technology Transfer activities.

- a) Minimization of postharvest losses in agricultural crops
- b) Introducing technologies for storage methods
- c) Processing of rice, pulses and other grains
- d) Spice processing
- e) Value addition for fruits and vegetables
- f) Rice and pulse based product development
- g) Awareness programs on human nutrition and food habits in Sri Lanka

CONSULTANCY

IPHT provides consultancy and advisory services to public, private and cooperative sector organizations that are either directly or indirectly involved in post-harvest industry. By providing these services, the institute was successful to provide 67 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. In 2016, IPHT has worked as consultant to "Warehouse Receipt Project" of Department of Development Finance of General Treasury. Further, IPHT has given their technical inputs to the project of

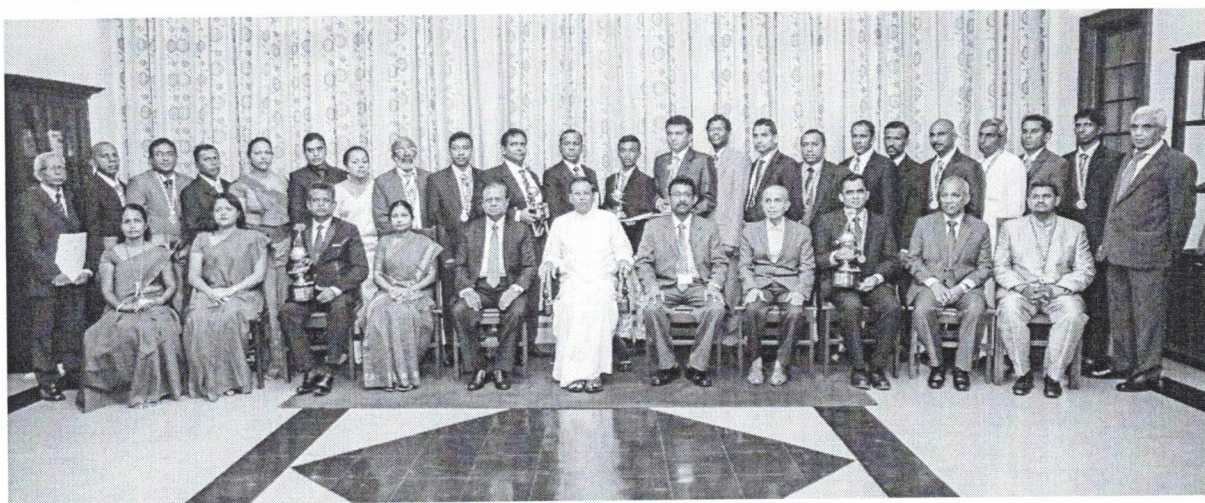
“Establishment of Cold Stores” conducted by Ministry of Rural Economy. Few more consultancy and technical inputs were given to some rice milling industry to upgrade their facility.

ENGINEERING AND LABORATORY SERVICES

The institute newly established two divisions for engineering and laboratory services. The main aim of establishing these two divisions are to cater the needs of stakeholders. Specially. Engineering service division introduces certificate course for post-harvest machinery users specially in rice milling, rice flour milling, spice grinding etc. Laboratory services division was established in strengthening the testing facilities at IPHT, as several high end, high sensitive and state of the art equipment were acquired in order to provide internationally competitive testing services to the industry in previous year. The division introduces a fare tariff system for outsourcing its facility to stakeholders. Eighty eight (88) samples were analyzed under the period of review.

PUBLICATIONS, PATENTS, AWARDS AND RECOGNITION

IPHT scientists won the three presidential awards for their research findings. Twenty eight scientific papers of IPHT scientists published in referred journals and other journals. During the year 2016 the institute continued to publish extension leaflets and handouts, to publicize the activities and new technologies of the IPHT. In this context, 9176 Extension leaflets and handouts were distributed among trainees and stake holders.



INSTITUTIONAL DEVELOPMENT

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FINANCIAL PERFORMANCE

Compared to the year 2015, financial performance of the year 2016 showed positive improvement.

Description	2015 (Rs. Mn.)	2016 (Rs. Mn.)	Growth (Rs. Mn.)
Deficit for the Year	(18.4)	(9.5)	8.9
Cash Equivalent	11.94	29.8	17.86
Total Current Asset	15.25	33.8	18.55
Total Current Liabilities	24.3	17.4	6.9
Net Asset (Equity)	168.6	175.7	7.1

HUMAN RESOURCE

Dr. B.M.S.K. Thilakarathne, Director of IPHT retired from his post July 2016 and before that Mr. D.P.C. Swarnasiri retired from his post April 2016. Mr. Ranjith Palipane, Technological Officer of IPHT Laboratory retired after a long dedicated service to the Institute. Eng. T.M.R.Dissanayake, Senior Mechanical Engineer was appointed as acting director of IPHT from July 2016 after the retirement of Dr. B.M.S.K. Thilakarathne. Ten numbers of new research officers were recruited to strengthen the research team of IPHT.

EMPLOYEE RELATIONS AND WELFARE MEASURES

The institute continued its welfare activities to build up employee relations and good will among staff, their families and people. As per the direction of Charmin, the welfare society of the institute held a "Rice cream Dansala" in the season of Posen Festival. Also family get together was held at the end of the year.



Eng. Mahesh Dissanayake
Director/CEO

04. Performance Highlights

RESEARCH

Optimization of the dehydration process of fruits and vegetables using tray type mechanical dryer

Pumpkin and papaya are two important commodities produced in Sri Lanka and during the marketing process huge quantity of these commodities are rejected due to suboptimal size, deformities etc. Moreover, when the commodity is used for seed extraction the flesh is discarded as waste. Hence, it is important to develop dehydration technologies for make use of suboptimal grades and those that are used for seed extraction to ensure additional income for the farmer. This study aimed to introduce three cabin tray dryer for producing quality dehydrated products from papaya and pumpkin.



A large scale three cabin tray dryer was evaluated and process parameters were optimized for introducing to the farmers and processors. A technology package was developed to produce high quality pumpkin powder that could be used to make soup, snacks etc.

The study reveals that the acceptable product of pumpkin and papaya could be obtained after drying at 55-60°C for 7h and 40-45 °C for 10h of time. Fuel consumption of the dryer is 3.1 (kerosene) L/h. Electrical consumption is reading as 6.2A for each motor.

Main focus of the project was to create an income generation opportunities for the farmers and processors involved in papaya and pumpkin cultivation, seed production and processing. Moreover, the developed product has a very good international market and there is a potential to gain more foreign income by exporting such commodities.

Extension of postharvest life of 'Ambul' banana through application of 1-MCP (1-Methylcyclopropene)

The study aimed to develop appropriate technologies for the extension of 'Ambul' banana shelf life using 1-MCP in terms of concentration and exposure time at different storage conditions. Bananas were treated with four 1-MCP of concentrations and also were exposed to 1-MCP for four of time durations. Treated banana samples were stored at ambient and cold room conditions. Then the shelf life of treated banana sample were evaluated using different physico-chemical quality parameters such as ripening index, total soluble solids content, weight loss, chlorophyll content fruit firmness and peel colour. The study revealed that applying of 1-MCP to mature green 'Ambul' banana can extend the shelf life up to 30 days by delaying ripening under cold room storage conditions (14°C and 85±5%).

Extension of shelf life of 'Ambul' banana can increase the export volume of particular banana variety that will earn more foreign exchange. In addition, the farm gate price of banana is increased simultaneously that uplift the living standard of farmers.

Control of Postharvest diseases of vegetables by organic silicon sources.

Bitter melon/bitter melon (Momordica charantia L.) and Brinjal (Solanum melongina) are two of the most popular vegetables in Southeast Asia which have a high consumer demand. However, both these crops are highly susceptible to many fungal diseases at different growth stages that lead to reduced yield and product quality. Due to this situation farmers/ growers have adapted to use number of commercial fungicides to reduce the disease occurrence that ultimately decrease the quality related to nutrition and safety. Many drawbacks identified with the use of synthetic inorganic fungicides have generated an interest in the development of safer, eco-friendly alternative methods for the control of such diseases. Silicon (Si) has been exploited for its beneficial effects in terms of disease control in many plants. Rice husk is a natural source rich in Silicon and it is estimated that Si content of rice

husk is about 18-20% from which 8-9% are soluble Si. This study evaluated the effect of rice husk as a natural Si source in controlling preharvest and postharvest diseases of bitter melon and brinjal. Results revealed the efficacy of powdered raw husk and fully burnt husk (white ash) on controlling powdery mildew, downy mildew and Fusarium fruit rot in bitter melon and anthracnose in brinjal. However, disease controlling efficacy of Si on brinjal was less prominent compared to bitter melon. The best Si concentration to be added was 200 mg Si/ kg soil. Experiments are needed to be repeated in farmer fields prior to introducing the technology as an alternative to synthetic fungicides. All stakeholders in the vegetable supply chain are beneficiaries of the findings of the research. In addition to that, the findings of the study will enhance by product utilization in milling industry.

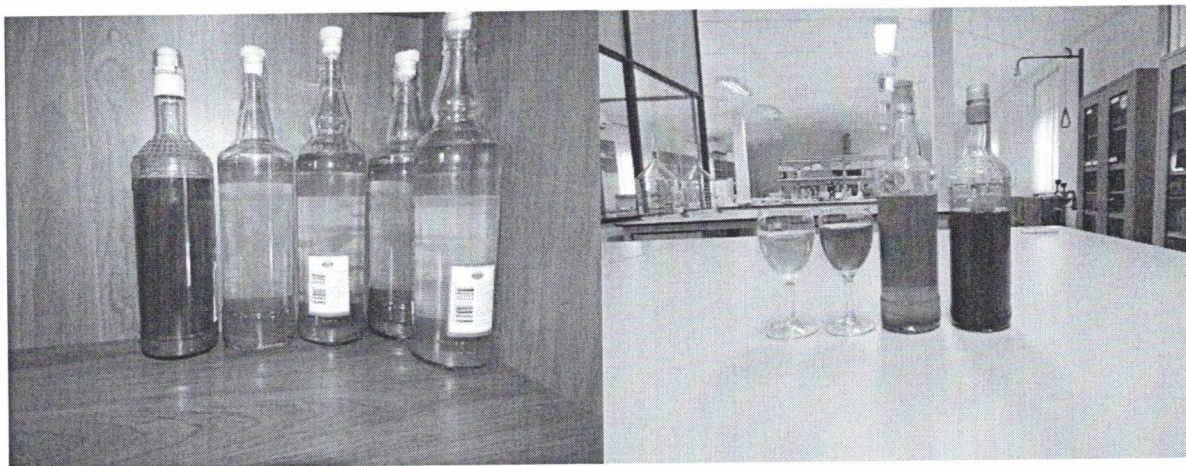
After completion of the field trials at farmer fields this can be introduced as a technically sound, economically viable, environmental friendly and socially acceptable method for plant disease control to promote sustainable agricultural development in the country.

Impact of thermal processing on total antioxidant capacity and lycopene bio accessibility of tomato juice.

Tomato juice is one of important products with export potential and retention of quality attributes after processing and during storage has been a major challenge to the industry. The stability of lycopene during processing and storage is crucial as degradation can lead to loss of product attractiveness and acceptability. Hence the research was conducted to optimize the processing parameters and investigate suitable variety to produce high quality tomato juice with enhanced lycopene bio-accessibility. Tomato varieties, Thilina, Maheshi and Lanka Sour were used in performing the research and juice was subjected thermal processing after analyzing the 13 chemical properties of fresh fruits. The optimization of thermal treatment in terms of preserving all quality parameters and enhancing the lycopene bio-accessibility is in progress and upon completing the research by 2017.

Studies of wine production from locally available fruits

Development of process and recipes for production of wine from locally available fruits was the main idea of the project. Locally available grapes, pineapple, Jackfruit and watermelon were identified as potential fruits to be utilized in wine production. Wine is an alcoholic beverage made from fermented fruits and has many health benefits. These include anti-ageing effects in red grape skins, improvement of lung function from antioxidants in white wine, reduction in coronary heart disease, development of healthier blood vessels in elderly people, reduction in ulcer-causing bacteria, destruction of cancer cells by proteins present in red grape skins, prevention of stroke by keeping the arteries clean by polyphenols in red grape skins, decreasing ovarian cancer risk in women and making the bones stronger. Many wines are made from fruits having medicinal value and such wines have many additional benefits. Therefore, this project was executed to develop technology package for production of wines from grapes and watermelon. Good quality wine has been made from locally available watermelon and grapes. The processing technology is ready to transfer to the field.



Study on blackening of skin in TJC mango and application of control measures

TJC mango is a new mango variety that has stepped into the mango industry in the past few decades. It has a high market potential especially at the export market. However, postharvest quality of TJC mango is hampered by several factors. Among these the occurrence of black colour patches around the stem area with a light colour inner flesh which cause an acidic flavor is the most serious problem. In this context, current study investigated that un-identified 'blackening' of TJC which adversely affected on postharvest quality of the fruit. Fungi from Botryosphaeriaceae species and one bacterial species were isolated from infected mango fruits. GRAS (generally recognized as safe) compounds such as sodium bicarbonate and calcium chloride did not reduce the disease occurrence where as an excellent disease control was achieved through ozone application. This research was conducted to develop a novel technology to improve the postharvest quality of TJC mango and thereby to increase the market potential that exists for TJC mango.

Mango has been identified as one of the high priority crops in Sri Lanka by the national committee on postharvest technology and value addition. Of the different varieties cultivated in Sri Lanka, TJC mango is having a high market potential in export as well as local markets with high commercial value.

In this context, the un-identified 'blackening' which adversely affected on postharvest quality of the fruit, ultimately limits the market potential that exists for TJC mango. Therefore, identifying causative factors and solutions for this problem is of prior importance.

Effect of different forms of keppetiya (*Croton aromaticus* L.) leaves on promotion of ripening in banana variety Embul

In commercial fresh fruit trade, artificial ripening is an essential part of the business as ripe fruits are highly susceptible to handling damages and decay. Use of industrial byproducts such as calcium carbide and ethephon as artificial ripening inducers has been widely adopted by the traders. Since these are quite cheap, excessive doses are being used, and usually do not follow the methods recommended by the authorities when applying them. This poses a high risk on consumer health. Thus despite receiving established health benefits, consumption of such products can be life threatening. Therefore, the proposed study was conducted as the first step in developing traditionally used biomaterials as organic ripening enhancers and to come up with a sustainable product to be used in fresh fruit ripening industry. Different forms of keppetiya (*Croton aromaticus*) leaves (paste, aqueous extract, fresh powder and fresh leaves) were evaluated against an untreated control for their ability to promote ripening of banana variety Embul under laboratory scale. Peel colour (L^* , a^* , b^*), pulp firmness, total soluble solids, treatable acidity and sensory qualities were evaluated.

The results revealed that banana variety Embul treated with fresh powder of keppetiya leaves promoted the ripening of these fruits in contrast to the untreated control.

Leaf formulation of Keppetiya(*Croton aromaticus* L.)and Bilin (*Averrhoa bilimbi* L) Accelerate Ripening in Banana Variety "Embul"

A study was conducted to examine the use of different formulations of plant leaves namely keppetiya (*Croton aromaticus* L) and bilin (*Averrhoa bilimbi* L), as ripening stimulants of banana variety Embul. Young and mature leaves of keppetiya and bilin were dried in an oven (40 oC for 14-18 h), were ground and obtained a fine powder. The powder in different proportions i.e. 10% bilin, 10% keppetiya, a mixture of 2% keppetiya + 2% bilin and banana samples without any bio material were used as the treatments and the control respectively. Banana variety Embul was harvested at their optimum maturity and were separated into clusters containing 3-4 fingers and mixed well. Approximately one kg of clusters was allocated into each treatment randomly in triplicates and was kept in a hermetically sealed glass chambers (12 cm³) along with their respective treatments. Temperature and relative humidity (RH) within the glass chambers and ambient temperature & RH were measured. Changes in peel colour, firmness, total soluble solids titratable acidity and juice pH were measured at 2 and 4 days after treatment. A sensory evaluation test was conducted at 4 days after treatment. Change in peel colour from green to yellow was first appeared in the banana samples exposed to the combination of keppetiya and bilin leaf powder after 24 h of treatment. The lowest

pulp firmness, highest TSS, TA and lowest juice pH were observed in the banana samples exposed to the same mixture after 48 h. In conclusion, the combination of bilin and keppetiya leaf powders (at the dose of 2% each) promoted ripening in Embul bananas in contrast to the control and when these were used alone.

It is expected to come up with an organic ripening inducer as there is no such health friendly product at present. Therefore, further studies are in progress. The target groups are fruit crop growers and all stakeholders in the fresh fruit supply chain along with consumers.

Processing and quality evaluation of chili sauce develop using a chili variety with higher pungency

Bird's Eye Chili or Kochchi (*Capsicum frutescens* L) are small and very pungent chili variety which has been grown as a neglected crop in very few pockets of the world including Sri Lanka. Currently, the crop has poor commercial value, hence, the research was conducted to develop a sauce and study the acceptability of the product using Bird's Eye Chili variety available in Sri Lanka under the sponsorship of Panini International Pvt. Ltd, Dambulla. The optimum ingredient mixture for preparing the sauce was investigated and acceptability and storability of the product were evaluated after analyzing the 15honor-chemical, organoleptic and microbiological properties of the product. Popularization and development of value added techniques from Bird's Eye Chili might be immensely benefitted to rural farming community to earn an extra income from this neglected crop, which will ultimately important for country development.

Therefore, development of a high pungent chili sauce with an export potential might be helpful in earning foreign income in the near future. The food processing industry and the rural farming community will be benefitted under this research.

Identification of improved postharvest technologies for red onion (*Allium cepa*) cultivated in Sri Lanka

This study was conducted to identify the prevailing situation of red onion and to develop an appropriate storage structure. A survey was conducted among red onion farmers using questionnaires in Jaffna area where red-onion is mainly cultivated. A major problem identified is lack of proper storage technologies resulting low farm gate price during harvesting and lack proper storage facilities then, a storage structure was developed with control environment (Temperature and RH). The storage life of red onion was extended for four months using developed storage structure in which temperature and RH can be controlled automatically. During this storage period, quality changes of red onion bulbs showed minimum changes. The income of red onion farmers can be increased by introducing this technology. Farmers can obtain higher farm gate price by adapting to store red onion using new technologies. In addition the amount of red onion imported during off seasons can be cut down saving the foreign exchange.

Design and development of a groundnut decorticator

Groundnut is the sixth most important oilseed crop in the world. It contains 48-50% oil and 26-28% protein, and is a rich source of dietary fiber, minerals, and vitamins. There are number of health benefits of groundnuts. In Sri Lanka, groundnut is a crop which cultivated in highlands under rain fed conditions in Maha season and in paddy lands under irrigation during Yala season in dry and intermediate zones. It is grown mainly in Moneragala, Kurunegala, Ampara, Badulla, Puttalam and Rathnapura districts. Though groundnut is an oil crop, in Sri Lanka it is demanded as snacks and confectionaries. Decorticated nut are added or mixed to the snacks and confectionaries. So the decortication is an important process in groundnut processing. Few people around the world have worked on to develop manual decorticated equipment and those are in small capacity. In Sri Lanka, there is not presently available mechanized groundnut decorticator. Therefore a groundnut decortivating machine was developed and its performance was evaluated under this project.

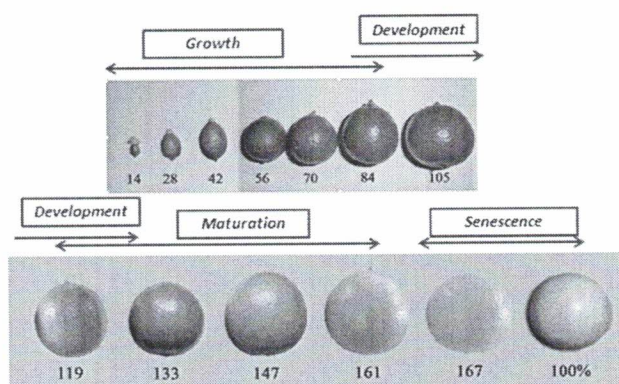


The machine was designed and evaluated the performance. The machine capacity - 3 kg per batch, and recommended capacity for the machine is 72-120 kg groundnut per hour. The machine is commercially applicable for medium scale processors

There are a lot of peoples engaged in groundnut cultivation and groundnut based food processing sector by introducing a groundnut decorticating machine industry will expand further and generate new job opportunities. And also, it causes increased availability of superior quality decorticated groundnut in the market to a reasonable price.

Investigation of fruit phenology and preharvest foliar treatments of growth regulators on fruit quality, and postharvest life of lime.

There is a constant demand for fresh limes (*Citrus aurantifolia* Swingle) year round as it is used in domestic culinary, food processing industry and as an ingredient in indigenous medicine. Therefore, it has been identified as one of the high priority crops by national committee of postharvest technology and value addition. During off season the price per kg of lime rises to a level that is unaffordable (600-1000 LKR) by the consumers. On the other hand, during peak time, the price drops to a level that lime growers leave the fruit without harvesting as it is insufficient to recover the cost of production. However, in Sri Lanka, no systematic research has been carried out yet, to address pre and postharvest issues of this crop thus at national level, the technology is still lies in an infancy stage. Therefore, the proposed research aimed to study fruit phenology, maturity and manipulating fruit season for programmed year round marketing. The first phase of the project is completed by now and 16honorolog of lime fruit growth, development & maturity (phenology) has been identified. Color charts and sizing rings have been developed to distribute among farmers and other relevant stakeholders to be used under field conditions. Figure shows the variation in 16honorological stages of lime (*C. aurantifolia*) fruit (14, 28 etc are days after fruit set). The project was funded by the National Science Foundation of Sri Lanka.

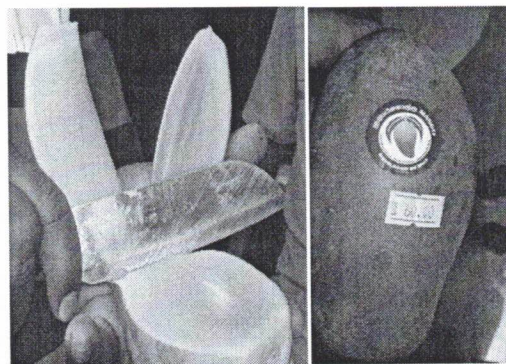


DEVELOPMENT PROJECTS

Three development projects were undertaken by IPHT with the funding of Ministry of Agriculture. The main objectives of these projects included the development of the postharvest sector through postharvest loss reduction, enhancing quality of agricultural produce, ensuring food safety and food security. All these activities are aimed towards development the agro based industries which will cater directly to the national economy. The project was initiated in September 2016 and is continuing till end of 2018. The project was conducted island wide.

Improvement of supply and value chain management practices of mango in Sri Lanka

Mango is one of the main fruits cultivated and consumed in the country. But due to high postharvest loss, the inferior produce quality and high market prices have become problematic issues in the industry. Therefore, the project carries out activities for improvement of supply and value chain management practices in the country. The activities considered includes, harvesting, sorting, grading, ripening, packaging, certification, etc. leading to quality improvement of fresh and processed products and loss reduction in the local market. The present situation will



be assessed by a baseline survey. The project facilitates the improvement activities by providing assistance through training, equipment and other necessary facilities for the identified beneficiaries. Thereby, the project expects to gain benefits for growers, collectors, retailers, processors, consumers and all the supply and value chain actors including entrepreneurs.

Under the project activities conducted in 2016 initiative activities were taken to establish mango processing zones to introduce a branded high quality mango into the market. Furthermore, to provide a safe and a healthy product for the consumers. The first mango

processing zone was initiated in Omaragolla of Kurunegala district. Mangos ripened through safe ripening practices and handling and processing techniques were introduced to the market under the brand name of “Omaragolla Mango”.



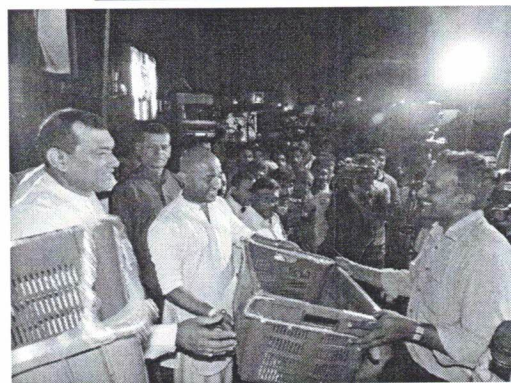
Training of trainers on postharvest loss reduction of agricultural food crops in major agricultural institutions in Sri Lanka

The project aimed towards improving postharvest practices of the country by improving the knowledge on postharvest technology of all stakeholders of the supply and value chains of agricultural crops in the country through training of trainers. Therefore, the project conducted training programs for Agriculture Instructors of Department of Agriculture and proposes to conduct programs for Agriculture Research and Development Assistants of the Department of Agrarian Services. Inaugural program of the Training of Trainer project at Dambula Dedicated Economic Center on 13th October 2016



Further it conducts training programs for all stakeholders of Economic Centers of the country. Under the project activities the institute was able to conduct 28 training of trainer programs in 24 districts and 1316 Agriculture Instructors of the Department of Agriculture were trained.

Furthermore, four training programs were conducted based at four main Economic Centers, which are Dambulla, Nuwara Eliya, Keppetipola and Embilipitiya. Under this activity, 317 beneficiaries were trained. In the program conducted in Dambulla Economic center, in addition to the stakeholders who directly attended the program, more than 3000 beneficiaries who were present in the economic center during the program were trained using multimedia and LED screens



Induction of fruit ripening by organic method

This project was initiated with the aim of developing an organic fruit ripening method to be used in commercial fresh fruit industry. For that, there was a need to establish required facilities for our laboratory. Therefore, establishment of required laboratory facilities for conducting the experiments are in progress.

Apart from above three development project “Rural level income generation/enhance the income of beneficiaries selected (Addressing climatic change impacts on marginalized agriculture communities living in Mahaweli river basin of Sri Lanka)” was conducted by IPHT under the funds of Minister of Mahaweli Development in year 2016.

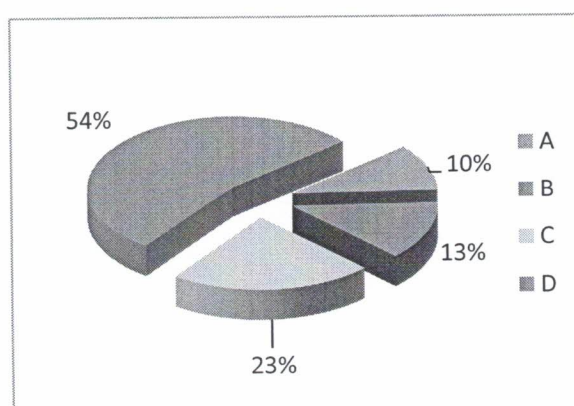
TRAINING

With the national scope to increase production, meeting export markets and agribusiness development, technical knowhow is a must in achieving these targets. Therefore, training programs on postharvest technology is continuously being carried out in the 2016 as well. 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

Residential training at IPHT, Anuradhapura

During the year 2016, 48 short-term residential training courses were conducted and 1714 persons were trained in various disciplines of Post-Harvest Technology and the details are given in figure 01.

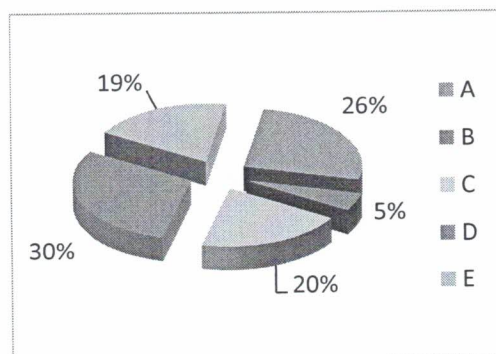
The training programs were aimed towards all stakeholders of the supply and value chains of the agricultural produce. These stakeholders were mainly farmers/farm women, collectors, transporters, whole sellers, retailers/traders and processors. Further these programs were also conducted under training of trainer aspect for officers of government and non-governmental organization, students of universities, technical colleges and schools. These programs were aimed towards awareness creation on postharvest technology, entrepreneur development, loss reduction, process and product quality improvement, postharvest machine operation and maintenance, etc.



Group	Description	No. of training programs	No of Trainees
A	Farmers, farm woman and members of farmer organizations	6	180
B	Project beneficiaries and small/medium scale entrepreneurs	9	226
C	Extension Officers from public, cooperative, private sectors and NGO	12	387
D	Students from Secondary schools, Universities, Schools of Agriculture and Technical Colleges	21	921
Total		48	1714

Nonresidential training, Field level training / Demonstrations

Depending on beneficiary requirement IPHT undertakes non-residential field level training as well. During the year 2016, the 191 non- residential training, field training programs and demonstrations were conducted and 5752 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.



Group	Description	No. of training programs	No of Trainees
A	Farmers, farm woman and members of farmer organizations	50	1502
B	Project beneficiaries and small/medium scale entrepreneurs	12	286
C	Fruit and vegetable growers, collectors, Traders	40	1152
D	Rice and other grain processors	60	1712
E	Extension Officers from public, cooperative, private sectors and NGO	29	1100
	Total	191	5752

Many of these beneficiaries are using the technologies given in these training programs. Through the technical knowledge attained, knowledge improvement, quality enhancement of produce, income generation, rural empowerment and many other benefits were achieved. This directly contributes to the loss reduction and quality improvement of the local produce in the agriculture sector, which is one of the main limiting factors in the national development in line with food security. Further it had contributed to industrial development, economic development and social development with improved living standards as well.



Some beneficiaries who had initiated/ developed their industries under these programs are listed below

No	name	address	Programme type
1	W.M. Roshane priyankara Fernando	Dangolla Rd, Haldanduwana, Dankotuwa	Fruit based products
2	W.Samanthi Rathnaweera	No. 10, Pani weraluwa, Bopitiya, Pannala	Finger millet processing
3	H. Sujeewa Saman Kumara	Saman Stores, Pothubowa, Maho	Rice flour processing
4	Chamara Dassanayake	Chamara Rice Mill, kobeigane rd, hettipola	Rice processing
5	Farm womens' Association	Ambanpola	Spice processing
6	R.M. Nandawathi Manike	Rasa Mihira Fruit Stall, Kanaththe wewa, Wariyapola	Fruit based products

7	K.H. Rohini Balasooriya	18/177, Rathmalyaya, Weeragoda	Lime based products
8	L. Prasidini Madushika	18/5/1, Weeragoda, Dadayanthalawa	Lime based products
9	M.G. Prema Kumari	18/138/1/ Weeragoda, Dadayanthalawa	Rice processing
10	S.A. Priyanka	17/170, Weeragoda, Dadayanthalawa	Tamarind based products
11	W. Chandrakanthi	18/97, Weeragoda, Dadayanthalawa	Rice processing
12	W.M. Gayani	24/11/3/2, udayagiriya (east), Ampara	Lime based products
13	M.G. Sumudu Chaminda Gamage	32/7/A, Gonagolla	Spice processing
14	W. Manoj Harshaka	8/2, Rajagama, Weeragoda	Spice processing
15	L.P. Kumudini Priyangika	18/52/3, Weeragoda, Dadayanthalawa	Rice flour processing
16	A.M. Premalatha Manike	18/164, Weeragoda, Dadayanthalawa	Sesame based products
17	P. Sriyani Padmini	18/138, Weeragoda, Dadayanthalawa	Rice processing
18	P.G.R. Sujith Samantha	18/166, Weeragoda, Dadayanthalawa	Lime based products
19	S.A. Priyangika Priyadarshani	18/170, Weeragoda, Dadayanthalawa	Rice based products
20	K.A. Jayanthi Pathiraja	18/130/1, Weeragoda, Dadayanthalawa	Sesame based products
21	G. Darmapala	Machchagama, Ipalogama	Lime based product
22	M hemalatha	34c, Yaya 02Left bunt Mahakanadarawa	Legume processing
23	Sitha kumara Herath	67, Galewela Road, Galnawa	Rice cream production
24	Premadasa Munashingha	159,21Janapadaya,Galenbindunawewa	Rice Processing
25	D.S.K. Dissanayake	30, 'Vanija Pedesa' Rajanganaya	Fresh juices processing
26	Chandima Kumarasignha	362, Mannar Junction, Vilachchiya	Spice processing
27	Jeewanthi kumuduni	Koonwewa, Thambuththegama	Fresh juices processing

EXTENSION

These extension activities conducted by the IPHT are assuring the national research priorities of food security, quality improvement, value addition and improving sustainable agro industries. This mainly aims the income generation of the people at rural and urban areas. Further, these project aim to income generation from foreign market by introducing high

Minimization of postharvest losses in agricultural crops

Agricultural crops in Sri Lanka face a major problem of high postharvest losses. Therefore, this extension activity was aimed towards conducting training programs to disseminate the knowledge and technical knowhow to popularize appropriate postharvest technologies to the relevant stakeholders of the supply and value chains of agricultural crops in the country. Under the project 32 programs were conducted and 886 beneficiaries were trained in Anuradhapura, Polonnaruwa, Kurunegala, Ampara, Nuwara Eliya, Kandy, Galle, Puttlem, Jaffna and the northern region.

Introducing technologies for storage methods

Seasonality and excess production leads to high postharvest losses as well as price reduction at farm gate level and price increment at the dearth periods to the consumers. Therefore, storage technologies for agricultural produce are on main importance. Under this project conducting training programs was aimed to disseminate the knowledge and technical knowhow to popularize appropriate postharvest technologies to the relevant stakeholders of the supply and value chains of agricultural crops in the country. Under this area, ten extension activities were conducted and 289 beneficiaries were trained in Anuradhapura, Polonnaruwa, Kurunegala, Ampara, Kandy, Galle, Puttlem, Jaffna and the northern region.

Processing of rice, pulses and other grains

Primary processing of rice, pulses and other grains are of main concerns in the postharvest sector. Therefore, the knowledge improvement in this technical area is vital for the development of the industry. The extension activity aimed to improve the knowledge and the skills of processing techniques. Under this topic, 19 programs were conducted and 542 beneficiaries were trained in Anuradhapura, Polonnaruwa, Kurunegala, Ampara, Nuwara Eliya, Kandy, Galle, Puttlem, Jaffna and the northern region.

Spice processing

Spices are essential components of Sri Lankan diet. Furthermore, it has high potential in export market. Therefore, the project aimed to improve the processing industry to reduce the quality problems present in the existing products and to initiate new enterprises. Under the project 11 programs were conducted and 276 beneficiaries were trained in Anuradhapura, Polonnaruwa, Kurunegala, Ampara, Galle, Puttlem, Jaffna and the northern region.

Value addition for fruits and vegetables

Fruits and vegetables being perishable in nature are having high postharvest losses in the country. This has led to high loss of monetary value as well. Value addition serves as one solution to this problem. Furthermore, this opens up new pathways to develop the sector through introduction of value added products to the market. Therefore, this project also aimed at popularizing appropriate technologies to the stakeholders of the industry. Under the project 46 programs were conducted and 1168 beneficiaries were trained in Anuradhapura, Polonnaruwa, Kurunegala, Ampara, Nuwara Eliya, Kandy, Galle, Puttlem, Jaffna and the northern region.

Rice and pulse based product development

Popularization of local food is of current interest in the country. Value addition of these rice and pulse based products will facilitate increase in consumption. Thereby, leading to improve the health conditions and increase income of the producer. Furthermore, it will create opportunities for agro based industries even at rural level. Therefore, this project conducted activities to introduce value added products and their technologies to the stakeholders to achieve the above objectives. Under the project 47 programs were conducted and 1373 beneficiaries were trained in Anuradhapura, Polonnaruwa, Kurunegala, Ampara, Nuwara Eliya, Kandy, Galle, Puttlem, Jaffna and the northern region.

Awareness programs on human nutrition and food habits in Sri Lanka

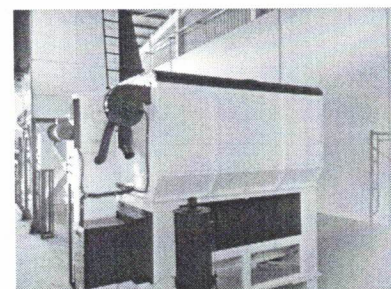
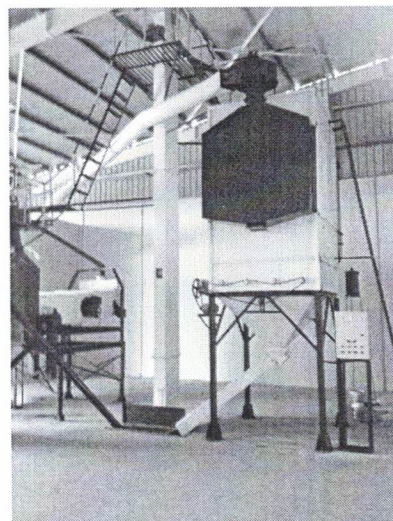
Food related health issues are of priority concerns at present in the country. Occurrence of non-communicable diseases is a threat to the society. Therefore, awareness creation on human nutrition and food habits is of high importance to address the current health issues. The project aimed towards conducting training programs to students and teachers of schools to find a solution to this problem. Therefore, under the project 29 programs were conducted and 1051 beneficiaries were trained in Anuradhapura, Polonnaruwa, Kurunegala, Ampara, Nuwara Eliya, Kandy, Galle, Puttlem, Jaffna and the northern region.

CONSULTANCY

Consultancy was undertaken especially to cater to field problem arising in the postharvest sector. These are mainly on request of individuals/organizations whose requirement cannot be met in just by providing training. During the year 2016 institute invented new postharvest technologies and those technologies could be sent to the entrepreneurs to enhance their technologies accordingly, as a result sixty seven (67) 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.

Warehouse Receipt Project” of Department of Development Finance of General Treasury

Providing post-harvest consultancy service to establish ten thousand tons capacity warehouses at Buttala and it is completed. The relevant machinery and equipment for the cleaning and drying process were selected and evaluated by the Institute. Also laboratory facilities were developed under supervision of the institute. That is one of major activity carried out by the IPHT in this year. The fund provided this project from department of Development Finance in Ministry of Fiancé. Specification preparation, technical evaluation inspection of machine commissioning and training of staff is major activities involved in this project. Farmers are permitted to store their paddy and other grains in these warehouses and could be getting financial facilities from the relevant authorities and when the price increased they can sell their grain and good profit can be achieved. They should pay very low storage cost. IPHT consultant is providing postharvest storage techniques and help to monitoring the storage condition. This will give higher benefit to the farmers.



Other than that, Institute staff engaged with several government activities as consultants, evaluation committee members in post-harvest technology. At present, Institute working as member of the Cabinet Appointed Technical Evaluation Committee for construction of cold storage units under ministry of Rural Economic Affairs 2016-2017

Other consultancies and advisory services

Small medium and large scale grain, spices, fruit and vegetable processors face difficulties to get correct advice to solve their day today problems, process improvement, quality improvement machine selection, correct storage technique and packaging etc. Due to that Institute of Post-Harvest Technology has been started advisory service to solve their problems through telephone conversation, meeting and discussion with relevant officers, machines observation and exchange technical knowhow etc. So that processors get enormous advantage to develop their industries. The people got advantage through this service as follows.

No	Name of the customers	Advisory Services
1	Divisional Secretary Office, Wilgamuwa	Rice processing center
2	MPCS, Palugasdamana	Rice flour product
3	I.P. Anura Wijewardene	Finger millet de husk machine
4	MPCS, Giribawa	Establish rice processing center
5	Lalith Kodippili, Mihintale	Grain processing
6	P.G.L. Wasantha	Rice flour products
7	Palitha Bandara	Rice flour products
8	P.P. Wimalasiri	Establish rice mill
9	Eksath Rice production society, Polonnaruwa	Provide technical reports for 25 rice mills
10	Sahini International United Ltd	Sample testing
11	Peace Wind Japan, Trincomalee	Requesting consultation parboil machinery select
12	D.G. Wipulasiri	Rice flour product
13	M.G. Nadeesha Dilrukshi	Repaired rice mills
14	MPCS, Hurulugaswewa	Establish rice mill

Analysis of grain samples

The lab services are the other important practices conducted by the institute to facilitate the farmers, processors and other stake holders and relevant people engage in post-harvest industries. Some important services provided this year as bellows.

No.	Institute	Type of samples	Quantity
01.	Panini International Pvt Ltd	Fruits and Vegetables Samples	45
02.	Sri Lanka Army	Rice Samples	09
03.	Mr. S.L.G Bandusiri Ministry of Agriculture	Rice Samples	07
04.	District Court, Polonnaruwa	Rice Samples	01
05.	Mr.Niyaz, P.M Rice Products	Rice Flour	05
06.	N.R Ellepola	Rice Biscuits	01
07.	Mr. Nalin Mr. Subramanium Mr.Gunawardhana Mr. Amila Gayan	Sesame oil	06

05. Publications, Patents, Awards and Recognition

Research publication and their benefit to the society is as bellows

Publications	Contribution
Wijewardana, R.M.N.A. , Nawarathne, S.B. and Wickramasinghe, I. (2016), Effect of various dehydration methods on proximate composition and retention of antioxidants in different fruit powders, International Food Research Journal 23(5):2016-2020.	Introduce technologies to produce fruit powders which having high nutritional and medicinal properties for utilization of small and medium scale food processors.
Wijewardana, R.M.N.A. , Nawarathne, S.B., Wickramasinghe, I., Gunawardane, C.R., Wasala, W.M.C.B., and Thilakarathne, B.M.K.S. (2016), Retention of physicochemical and antioxidant properties of dehydrated bael (<i>Aegle marmelos</i>) and palmyra (<i>Borassus flabellifer</i>) fruit powders, Prcedia Food Science.Vol.6, pp.170-175.	Introduce technologies to produce fruit powders which having high nutritional and medicinal properties for utilization of small and medium scale food processors.
Wasala, W.M.C.B., Dissanayake, C.A.K., Gunawardane, C.R., Wijewardana, R.M.N.A. Gunathilake, D.M.C.C. and Thilakarathne, B.M.K.S. (2016), Efficacy of insecticide incorporated bags against major insect pests of stored paddy in Sri Lanka. Prcedia Food Science.Vol.6, pp.164-169.	Introduce new technologies to control pest in commercial grain storage for reducing paddy losses.
Wijewardana, R.M.N.A. , Nawarathne, S.B. and Weikramasinghe, I. (2016), Development and quality evaluation of Ready to Bake Vegetarian Cake Mix, Journal of Agricultural Sciences, Faculty of Agriculture, Sabaragamuwa University, Sri Lanka, 11(1):pp53-61	Develop technologies to proper utilization of underutilized fruits and vegetables which are excess in production for food product formulation.
Wijewardana, R.M.N.A. , Asfana, M.S.M.F., Ranadeera, S. and Thilakarathne, B.M.K.S. (2016), Preparation and quality evaluation of sweet potato (<i>Ipomoea batata</i>) flour based papadam, International Conference of Japanese Alumni Association of Sri Lanka, Held on 19 th -20 th February 2016.	Introduce technologies to use of excess potato production for food product formulation as low cost ingredient. The result will be used small and medium scale food processors
Gunawardane, C.R., Wasala, W.M.C.B., Dissanayake, C.A.K., Herath, M.M., Wijewardana, R.M.N.A. Swarnasiri, D.P.C., Thilakarathne, B.M.K.S., Wijerathne, R.M.M.K., Wasantha, P.G.L. and Somakanthan, N. (2016), Value addition to ginger (<i>Zingiber officinale</i>) :Market potentials and development of ginger based products, International Conference of Japanese Alumni Association of Sri Lanka, Held on 19 th -20 th February 2016.	Introduce novel ginger based value added products to the industry. To enhance quality of products and entrepreneur development
Wijewardana, R.M.N.A. , Asfana, M.S.M.F., Ranadeera, S., Wasala, W.M.C.B. and Thilakarathne, B.M.K.S.(2016), Utilization of sweet potato (<i>Ipomoea batata</i>) flour as an alternative for wheat flour in bun preparation, Proceedings of International Symposium 2016, Faculty of Agriculture, University of Ruhuna, Sri Lanka.	Introduce technologies to use of excess potato production for food product formulation as low cost ingredient. The result will be used small and medium scale food processors
Chandrajith, U.G., Wijewardana, R.M.N.A. , Gunawardane, C.R. and Thilakarathne, B.M.K.S. (2016), Development of a jam using bilin fruit (<i>Averrhoa bilimbi</i> L.) and evaluation of its sensory and physic chemical properties, Proceedings of International Symposium 2016, Faculty of Agriculture, University of Ruhuna, Sri Lanka.	Develop technologies to use of underutilized fruits in food product formulation. The result will be used small and medium scale food processors
Wasala, W.M.C.B., Dissanayake, C.A.K., Gunawardhna, C.R., Wijewardana, R.M.N.A. , Gunathilake, D.M.C.C. and Thilakarathne, B.M.K.S. (2016), Evaluation of the efficiency of deltamethrin incorporated polysack bags for the control of stored grain pests of Maize during storage, Proceedings of International Symposium 2016, Faculty of Agriculture, University of Ruhuna, Sri Lanka.	Introduce technologies to control insects infestations in commercial maize storage

Wijewardana, R.M.N.A., Risna, M.R.F., Jayawardana, N.W.I.A. and Wasala, W.M.C.B. (2016), Preservation and quality evaluation of ready to cook vegetarian soup incorporated with dehydrated soaya bean (<i>Glycine max</i>) powder using blast freezing, Proceedings of 9th International Research Conference held at General Sir John Kothalawala Defence University, Sri Lanka, ISBN 978-955-0301-28-7.	Introduce blast freezing technologies as efficient method for shelf life extension of fresh and processed food products
Wasala, W.M.C.B., Dissanayake, C.A.K., Wijewardhane, R.M.N.A., Gunawardhne, C.R., Rathnayake, H.M.A.P. and Dissanayake, T.M.R. (2016), Feasibility of long term bulk paddy storage method for local conditions, Proceedings of 9th International Research Conference, General Sir John Kothalawala Defence University, Sri Lanka, ISBN 978-955-0301-28-7.	Introduce effective storage technologies for paddy storage for the benefit of large scale industries.
Ratnayake, R.M.R.N.K., Daundasekera, W.A.M., Ariyaratne, H.M. and Ganehenege, M.Y.U. (2016), Some biochemical defense responses enhanced by soluble silicon in bitter gourd-powdery mildew pathosystem, <i>Australasian Plant Pathol</i> 45(4):425-433.	Introduce non-hazardous, ecofriendly disease control method as an alternative strategy for synthetic commercial fungicides. All the stakeholders in vegetable supply chain will be benefited from the findings
Ratnayake, R.M.R.N.K., Daundasekera, W.A.M, Ariyaratne, H.M. and Ganehenege, M.Y.U. (2016), Soil application of potassium silicate reduces the intensity of downy mildew in bitter gourd leaves, <i>Ceylon Journal of Science</i>.	
Ratnayake, R.M.R.N.K., Daundasekera, W.A.M., Ariyaratne, H.M. and Ganehenege, M.Y.U. (2016), Effect of rice husk as a natural silicon source to control preharvest fungal diseases in bitter gourd leaves, Proceedings of the PGIS research congress, University of Peradeniya, Sri Lanka pp.74.	
Champa, W.A.H., Ratnayake, R.M.R.N.K., Herath, M.M., Tilakaratne, B.M.K.S., Gunathilake, D.M.C.C. and Chandrajith, U.G. (2016), Leaf formulations of keppetiya (<i>Croton aromaticus</i> L.) and bilin (<i>Averrhoa bilimbi</i> L) accelerate ripening in banana variety "Embul". Proceedings of the 5th YSF symposium, Young Scientists Forum, National Science and Technology Commission, No. 31/9, 31/10, Dudley Senanayake Mawatha, Colombo 08, pp.14-16.	Introduce novel organic methods for fruit ripening by combining traditional knowledge with modern science and technology. These papers represent preliminary trials of this effort. Further experiments are in progress to develop a sustainable product to be used in fruit ripening industry.
Champa, W.A.H., Ratnayake, R.M.R.N.K., Herath, M.M., Tilakaratne, B.M.K.S., Gunathilake, D.M.C.C. and Chandrajith, U.G. (2016), Effect of different forms of keppetiya (<i>Croton aromaticus</i> L.) leaves on promotion of ripening in banana variety <i>Embul</i>. International Symposium on Agriculture and Environment, Faculty of Agriculture, University of Ruhuna, Sri Lanka, pp.54-56.	
Herath, H.M.W.S.K., Champa, W.A.H., Nayananjali, W.A.D. and Lakmini, G.W.A.S. (2016), Effect of Cashew (<i>Anacardium occidentale</i>) and Ehela (<i>Cassia fistula</i>) fresh leaf powders on induction of ripening in banana variety "Embul" WINC 2016, Proceedings, Wayamba University of Sri Lanka, pp.163.	
Herath, H.M.W.S.K., Champa, W.A.H., Lakmini, G.W.A.S. and Nayananjali, W.A.D. (2016), Development of an organic method for induction of ripening banana variety "Embul", 08th Annual Research Symposium Proceedings, Faculty of Agriculture, Rajarata University, Sri Lanka, pp 45.	
W.M.C.B. Wasala, C.A.K. Dissanayake, C.R. Gunawardane, R.M.N.A. Wijewardana, D.M.C.C. Gunathilake, B.M.K.S. Tilakaratne, Efficacy of insecticide incorporated bags against major insect pests of stored paddy in Sri Lanka, <i>Procedia Food Science, ELSEVIER Journal: 6</i> (2016)	Introduce technologies to control of storage pest This research will benefited to farmers and millers

D.M.C.C.Gunathilake, W.M.C.B.Wasala , Palipane, K.B. Design and development of size grading machine for big onion , <i>Procedia Food Science</i> , ELSEVIER Journal: 6 (2016).	Introduce new machine to grade the big onion in field level This research will benefited to farmers and millers
R.M.N.A. Wijewardhane, M.R.F.Rizna, N.W.I.A Jayawardhane, W.M.C.B. Wasala and B.M.K.S. Thilakarathne, Preservation and quality evaluation of ready to cook vegetarian soup incorporated with dehydrated soy bean (<i>Glycine max</i>) powder under blast freezing , <i>Proceedings of 9th International Research Conference</i> , General Sir John Kothalawala Defence University, Sri Lanka. ISBN 978-955-0301-28-7.	Introduce blast freezing technologies as efficient method for shelf life extension of fresh and processed food products
D.M.S.P.Bandara, K.S.P.Amarathunge, L.Rajapakse, T.M.R.Dissanayake. W.M.C.B.wasala , Alternative methods of spice grinding- a review, <i>Proceedings of 7th International Conference on Sustainable Built Environment</i> held on 16 th -17 th , Dec. 2016 in Kandy, Sri Lanka	Giving awareness to the entrepreneurs to spice industry.
C.R.Gunawardhane, W.M.C.B.Wasala , C.A.K.Dissanayake, M.M.Herath, R.M.N.A.Wijewardhane, D.P.C.Swarnasiri, B.M.K.S. Thilakarathne, R.M.M.K.Wijerathne, P.G.L.Wasantha, N.Somakanthan. Value addition to ginger (<i>zingiber officinale</i>): market potentials and development of ginger based product , <i>International Conference of Japanese Graduates' Alumni of Sri Lanka</i> held on 20 th Feb. 2016, in Colombo, Sri Lanka	Introduce novel ginger based value added products to the industry. The results can be use to enhance quality of products and entrepreneur development
H.M.A.P. Rathnayake, W.M.C.B. Wasala , T.M.R. Dissanayake, DMSP Bandara and DP Senanayake Modification and evaluation of parboiling wastewater discharge system for minimizing the effluent volume to be treated in rice processing , <i>Proc. Of International Symposium on Agriculture and Environment</i> , Faculty of Agriculture, University of Ruhuna, held on 13 th Jan. 2016.	Introduced appropriate waste water treatment method for parboiling system. The technology could be directly implemented in rice milling industry.
C.A.K. Dissanayake, S. De Silva, W.M.C.B. Wasala and B.M.K.S. Thilakarathne, Factors Affecting the Expansion of Micro-enterprises: A SWOT Analysis on Cottage Level Rice Processing , <i>Proc. Of International Symposium on Agriculture and Environment</i> , Faculty of Agriculture, University of Ruhuna, held on 13 th Jan. 2016.	Identification of problems and issues in enterprise development in the rice processing sector. To identify mitigation procedures to develop the postharvest industry.
DMSP Bandara, CAK Dissanayake, TMR Dissanayake, HMAP Rathnayake and DP Senanayake. Performance Evaluation of the Screw-Type Oil Expeller for Extracting Mee (<i>Madhuca longifolia</i>) Oil . <i>Journal of Biosystems Engineering</i> , Korea; Vol.41 (No.3), pp.177 ~ 183(2016)	Popularize the abandoned industry and enhance production of under-utilized crops
DMSP Bandara, KSP Amaratunga, L. Rajapakse, TMR Dissanayake and WMCB Wasala, Alternative method of Spice Grinding , <i>International Symposium on Sustainable Built Environment (ICSBE) proceeding (2016)</i> pp75-81,	Enhance the quality of spice processed product and improve the spice industry
Dissanayake B.D.M.P.B and Jayawardana, Development of a method for Manufacturing noodles from Finger Millet - <i>ELSEVIER, Procedia Food Science</i> 6 (2016), <i>International Journal</i> , pp.293-297	Development of a method to manufacture finger millet noodle. Increase market potential for finger millet growers and introducing a healthy product to consumers.
Chandrajith U.G, Gunathilake D.M.C.C, Bandara B.D.M.P and Swarnasiri D.P.C, Effect of combine Harvesting on Head Rice Yield and Chaff content of Long and Short Grain Paddy Harvest in Sri Lanka - <i>ELSEVIER, Procedia Food Science</i> 6 (2016), <i>International Journals</i> , pp. 242-245	Evaluate harvesting and threshing losses of common combine harvesters. Introduce appropriate machines for harvesting and threshing.

Bandara B.D.M.P. , D.P Senanayake, Swarnasiri D.P.C and B.M.K.S Thilakaratne, Development of a low cost sesame de-husking machine-Conference Proceedings, International Conference of Japanese Graduates Alumni Association of Sri Lanka(IC-JAGAAS 2016), pp120-123	Introduce high quality processed raw materials for sesame based products.
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Awards received in the year 2016

01. NRC (National Research Council) – merit award for scientific publications, for the paper published in “Postharvest Biology and Technology 2014, VOL.91, pp 57-63” titled “Postharvest treatment of polyamines maintains quality and extends shelf life of table grapes (*Vitis vinifera* L.) cv. Flame Seedless”.
02. YSF (Young Scientist Forum) – merit award for the oral presentation titled “Leaf formulations of keppetiya (*Croton aromaticus* L.) and bilin (*Averrhoa bilimbi* L) accelerate ripening in banana variety “Embul” made at the 05th YSF symposium (2016), National Science and Technology Commission, Sri Lanka.

Presidential Awards

- Presidential Award was given to Eng. T.M.R.Dissanayake in recognition of his invention of a “Steam Sterilization Machine for dried Pepper” which won the second place in the field of Engineering.
- Presidential Award was given to Dr. R.M.N.A. Wijewardhane in recognition of her invention of a “Development of lipid based edible coating (wax) for fresh fruits” which won merit cognition in the field of Food Technology.
- Presidential Award was given to Eng. T.M.R.Dissanayake in recognition of his invention of a “Continues Paddy Steamer” which won merit cognition in the field of Engineering.

Paper articles/news items

A Sinhala article on Fruit and vegetable loss reduction was appeared on “Silumina” on 04th Sunday in December 2016.

06. Conferences, Seminars, Training Programmes & Workshops

Local Training

Course	Name	Duration	Institute
Microcontroller programming with Arduino training	D.M.S.P. Bandara T.M.R. Dissanayake	2016.01.20	Esoft Metro Campus Colombo
Short course on basic statistics for researchers: principles and practices	All R&D staff	2016.06.14	National Science and Technology Commission
Workshop on “Basic statistics for Researchers: Principles and Practices “, organized by Young Scientist Forum	Research staff	2016-06-13 to 2016-06-14	National Science and Technology Commission
Development of quality manual and operating procedure	Research staff	2016-07-14 to 2016-07-15	Sri Lanka Accreditation Board for Conformity Assessment
Disciplinary code	R.K.A.P. Ramanayake	2016.06.10	PRAG Institute
Work shop on “Attitudes and Talent”	All staff	2016.06.20	National productivity Center

Short term foreign programs

Officers participated	Durations	Training course
H.M.A.P. Rathnayake	2016 July 7 to August 05	Training course on Agro –technology Extension for Sri Lanka 2016
Mr. C.R. Gunawardhana Mr. M.M. Herath	2016 November 14-18 Bangkok Thailand	Regional Training Workshop On Heretical rural Chain management
Ms. R.M.N.A. Wijewardhana	2016 September 14-30	Modern Agricultural Management for Official from Countries along the land and mar time silk Roads
Mr. B.D.M.P. B. Dissanayake	2016 September 14 th – 30 th	2016 Seminar on Modern Agricultural Management for Officials from Countries along the land and maritime Silk Roads
Ms. C.A.K. Dissanayake Ms. R.M.R.N.K. Rathnayake	2016 September 26-30 Paro, Bhutan	Training of Trainers on horticultural Chain Management

In-plant / Industrial training

During the period under review following students were accommodated as trainees at our Institute.

Name	Institute	Training	Duration
U.G.T.M.Wijerathna	NAITA	ICT Technician	2015.07.10-2016.01.09
H.M.S.P.K.Herath	University of Peradeniya	Food Science and Technology	2015.12.07-2016.02.08
L.G.S.Wathsala	NAITA	Accountancy Technician	2016.07.17-2016.07.17
U.G.T.M.Wijerathna	NAITA	ICT Technician	2015.07.07-2016.01.08
D.H.Wikramapala	Vocational Training Authority	ICT Technician	2016.03.02-2016.09.01
A.H.K.K. Abekoon S.N. Nugaliyadda N.R.T.N.Sandipani	School of Agriculture, Puliyanikulama	Agriculture Field Assistant	2015.09.30-2016.06.01
U.A.S.Sammani	NAITA	ICT Technician	2016.05.06-2016.11.05
T.M.B.Thennakoon M.R.N.Balasooriya	Open University	Engineering Undergraduate and Diploma	2016.05.09-2016.08.19
J.A.C.P.Jayasooriya	NAITA	ICT Technician	2015.11.06-2016.05.05
L.L.S.Madhusanka	Uva Wellassa University	Spice Technology	2016.08.08-2016.11.11
M.M.N.K.K.C. Marasinghe	NAITA	Basic Industrial Training	2016.08.22-2017.07.15
U.A.S.S.Premasiri	NAITA	ICT Technician	2016.11.05-2017.05.04
W.G.S.Kumari D.M.I.S.Dissanayake J.I.Ketippearachchi T.G.I.M.K. Thilakarathna J.M.A.M.Sewwandi I.M.M.Asardeen M.R.M.Rasith	University College of Anuradhapura	Vocational Technology	2016.11.10-2016.11.14

07. Publicity/ Publications

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 “Silumina” news paper

- A Sinhala article on Fruit and vegetable loss reduction was appeared on “Silumina” on 04th Sunday in December 2016.

Circulation of IPHT Publications

During the period under review 27967 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.

Exhibitions participated

During the period under review, IPHT participated in following exhibitions.

Date	Exhibition
2016.03.06 - 2016.03.08	Educational Exhibition and Trade Fair on “Non-poisonous Agriculture” at BMICH Colombo
1016.08.29 - 2016.08.30	National Farmers Conference and Agricultural Exhibition - Ampara
2016.09.01 - 2016.09.03	“Krusha Nawodaya” Madagoda 2 nd phase

08. IPHT Facilities used by other Institutions

The following institutions/organizations were used auditorium and hostel facilities during the year 2016.

No	Name / Institute Address	Frequency
1.	AMW (Pvt) limited	02
2.	Central Environmental Authority	02
3.	College of Technology - Anuradhapura	03
4.	Department of Agrarian Development	02
5.	Department of Ayurveda	01
6.	Department of cultural Affairs	05
7.	Department of Labour	01
8.	Department of Nation Community Water Supply	02
9.	Department of Wildlife Conservation	04
10.	District Land Use Planning Office Anuradhapura	01
11.	Family Rehabilitation Centre	01
12.	Food and Agriculture Organization (FAO)	03
13.	GLL (Pvt) Limited	01
14.	Milco (Pvt) limited	01
15.	Ministry of Agriculture	05
16.	Ministry of Education	03
17.	National Water supply & Drainage Board	02
18.	National Youth Services council	02
19.	Nimnaya Education Development Foundation Anuradhapura	02
20.	North Central Provincial Education Department	02
21.	Office of the Deputy Director of Agriculture - Badulla	03
22.	Plan International Sri Lanka	03
23.	Postal Department	01
24.	Rajarata University of Sri Lanka	48
25.	Regional Development Bank	03
26.	Road Transport Service Authority	02
27.	Sierra Construction (Pvt) Limited	01
28.	Sri Lanka Institute of Local Governance	02
29.	Sri Lanka Transport Board	02
30.	Chief Ministry - North Central Province	05
31.	Bhikshu University of Sri Lanka	04

09. Improvement of Facilities for Research and Training/ Extension

IPHT hostel facilities were developed for improve the accommodations facilities .

- Under this improvement rooms are renovate with new tiles. The furniture and bed sheets were provided for AC rooms. New fence was established around the hostel.

10. Memberships and Members of Commitees of the Staff, IPHT

Eng. TMR Dissanayake

1. Chairman of Agricultural and Plantation Engineering Sectional Committee
2. Member to the council of Institution of Engineering Sri Lanka.
3. Area Director, Area H3, Division H, district 82 Toastmaster international
4. External member of faculty board of Faculty of Agriculture, Rajarata University, Sri Lanka

Eng. H.M.A.P. Rathnayake

1. Committee member of Agricultural and Plantation Engineering Sectional Committee
2. Member of the working committee of the Sri Lanka Standard Institution for Formulation of Standards for Paddy and rice
3. Member of the national committee of developing policies for agriculture mechanization

Mrs. Dr. Nilanthi Wijewardana

1. Steering Committee Member of the YSF (Young Scientist Forum), Sri Lanka
2. Member of the working committee of the Sri Lanka Standard Institution for Formulation of standards for papaya

11. 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 2016:

a) Post-graduate Degree Programme (completed)

Mrs. K.G.L.R. Jayathunge Research Officer	Ph.D. in food Science & Technology Queen's University, Belfast United Kingdom.
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b) Post-graduate Degree Programme (continue)

Mrs.R.M.R.K. Rathnayake Research Officer	Ph.D. in Plant sciences Post Graduate Institute of science (PGIS) University of Peradeniya
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Mrs. D.M.S.P. Bandara	Bio system engineering Post Graduate Institute of science (PGIS) University of Peradeniya
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Mr. T.M.R. Dissanayake	Bio system engineering Post Graduate Institute of science (PGIS) University of Peradeniya
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12. Staff Position as at 31st December 2015

Post	Name
Director (upto 2016.05.30)	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 biology of fruit and veg.(Israel)
Director (Acting) (from 2016.06.18)	Eng.T.M.R. Dissanayake BSc. (Eng.), Sri Lanka MEng.(India), C.Eng. (Sri Lanka)
Additional Director (R&TT) (upto 2016.04.30)	Mr. D. P. C. Swarnasiri BSc. (Agric), Sri Lanka Dip. in Agric.(China) MSc. (Agric), Sri Lanka PGDM, Sri Lanka
Additional Director (R&TT) (Acting upto 2016.12.30)	Mrs. D. P. Senanayake B.Sc. Mech. Eng. (Sri Lanka) M. Phil.Chem. Eng (Sri Lanka) C. Eng (IESL)
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 (Head Engineering division)	Mr.H.M.A.P.Rathnayake B.Sc. Prod. Eng. (Sri Lanka) M.Tech in Agriculture process Engineering (INDIA) C.Eng(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 (Head Planning & Monitoring)	Dr (Mrs.) W.A H. Champa BSc. Sp. (Horticulture), Sri Lanka M.Phil (Crop Sci.), Sri Lanka Ph.D.(Fruit Science),India
Research Officer (Head development project)	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.Phill. 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 (Head , Research Division)	Dr. (Mrs.) R.M.N.A. Wijewardane BSc. (Agric.) Sri Lanka, MSc. (Agric.) Sri Lanka, MPhil. (Food Technology), 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), C.Eng. (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 (Head ,extension division)	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) C.Eng(IESL)
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 (Head ,Account devision)	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:

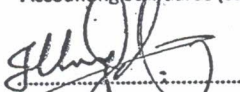
Technical Officer	01
Draughtsman	01
Building Inspector	01
Management Assistant (Steno/ Typist)	01
Management Assistant (Typist (Sinhala / English)	03
Field Officer	03
Laboratory Assistant	03
Management Assistant	08
Hostel Keeper	01
Welder	01
Technician	01
Electrician	01
Mill Operator	02
Boiler Operator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

INSTITUTE OF POST HARVEST TECHNOLOGY
STATEMENT OF FINANCIAL POSITION AS AT DECEMBER 31, 2016

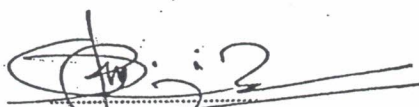
	NOTES	2016 RS.	2015 RS.
ASSETS			
NON - CURRENT ASSETS			
Property, Plant and Equipment	6	147,286,980.78	145,085,299.74
Investments	7	30,000,000.00	50,000,000.00
Intangible assets	8	7,840.00	7,840.00
Other non-current assets	9	10,182,986.29	10,177,402.96
TOTAL NON CURRENT ASSETS		187,477,807.07	205,270,542.70
CURRENT ASSETS			
Cash and cash equivalents	10	29,803,950.91	11,937,789.71
Receivables	11	2,612,360.26	1,807,472.89
Inventories	12	1,181,080.20	1,035,383.00
Advances	13	208,021.50	470,314.36
Other current assets	14	675.00	675.00
TOTAL CURRENT ASSETS		33,806,087.87	15,251,634.96
TOTAL ASSETS		221,283,894.94	220,522,177.66
EQUITY AND LIABILITIES			
EQUITY	15		
Initiate Capital		69,907,594.42	69,907,594.42
Government Grant		8,368,214.00	8,368,214.00
Foreign Loan		72,750,229.02	72,750,229.02
General Treasury Fund - Capital		105,910,250.00	100,910,250.00
Accumulated Surplus / (Deficit)		(81,238,009.36)	(83,325,347.91)
TOTAL EQUITY		175,698,278.08	168,610,939.53
LIABILITIES			
NON-CURRENT LIABILITIES			
Provision for Gratuity Fund	16	28,198,189.00	27,606,601.15
TOTAL NON-CURRENT LIABILITIES		28,198,189.00	27,606,601.15
CURRENT LIABILITIES			
Payables	17	17,387,427.86	24,304,636.98
TOTAL CURRENT LIABILITIES		17,387,427.86	24,304,636.98
TOTAL LIABILITIES		45,585,616.86	51,911,238.13
TOTAL EQUITY AND LIABILITIES		221,283,894.94	220,522,177.66

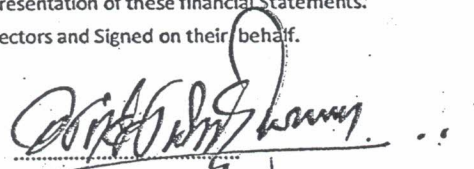
The accounting policies and notes from page 05 To 19 an integral part of these Financial Statements.

These Financial Statements are in compliance with the requirements of the Sri Lanka Public Sector Accounting Standards (SLPSAS).


M. N. R. Ilangasinghe
Accountant

The Board of Directors is responsible for the preparation and presentation of these financial Statements.
These Financial Statements were approved by the Board of Directors and Signed on their behalf.


Kavinaga C. Dissanayake
Chairman


T. M. R. Dissanayake
Director /CEO(Actg)

INSTITUTE OF POST HARVEST TECHNOLOGY
STATEMENT OF FINANCIAL PERFORMANCE FOR THE YEAR ENDED DECEMBER 31, 2016

		2016	2015
	NOTES	RS.	RS.
REVENUE			
General Treasury Fund - Recurrent	18	94,750,000.00	85,139,000.00
Transfers from other agencies	19	23,496,846.83	966,239.64
Other revenue	20	8,595,729.55	9,670,344.47
TOTAL REVENUE		126,842,576.38	95,775,584.11
EXPENSES			
Wages, salaries and employee benefits	21	74,303,636.99	75,273,448.04
Supplies and consumables used	22	12,992,082.47	11,930,151.55
Depreciation and amortization expense	23	16,427,755.10	17,877,156.51
Other expenses	24	32,587,936.34	9,065,272.06
Finance costs	25	37,611.64	33,307.23
TOTAL EXPENSES		136,349,022.54	114,179,335.39
SURPLUS / (DEFICIT) FOR THE PERIOD		(9,506,446.16)	(18,403,751.28)

The accounting policies and notes from page 05 To 19 an integral part of these Financial Statements.

INSTITUTE OF POST HARVEST TECHNOLOGY

CASH FLOW STATEMENT FOR THE YEAR ENDED DECEMBER 31, 2016

		2016	2015
	NOTES	RS.	RS.
CASH FLOWS FROM OPERATING ACTIVITIES			
Surplus /(Deficit)		(9,506,446.16)	(18,403,751.28)
Non - Cash Movements			
Depreciation		16,427,755.10	17,877,156.51
Effect through adjustments to the Accu. Surplus		-	16,381,887.69
Interest Income	20.8	(2,862,095.29)	(3,785,485.90)
Increase/(Decrease) in payables	27	(6,917,209.12)	1,627,812.39
Increase/(Decrease) in Provisions for Gratuity Fund	28	591,587.85	
(Increase)/Decrease in other current assets	29	(688,291.71)	5,178,101.05
Net cash flows from operating activities		(2,954,699.33)	18,875,720.46
CASH FLOWS FROM INVESTING ACTIVITIES			
Purchase of Property, Plant and Equipment	30	(7,035,651.43)	(83,732,528.71)
(Increase)/Decrease non current assets	31	19,994,416.67	(273,903.89)
Net interest Received	20.8	2,862,095.29	3,785,485.90
Net cash from investing activities		15,820,860.53	(80,220,946.70)
CASH FLOWS FROM FINANCING ACTIVITIES			
Capital From General Treasury		5,000,000.00	70,401,000.00
Net cash flows from financing activities		5,000,000.00	70,401,000.00
Net increase/(decrease) in cash equivalents		17,866,161.20	9,055,773.76
Cash and cash equivalents at beginning of period	32	11,937,789.71	2,882,015.95
Cash and cash equivalents at end of period	33	29,803,950.91	11,937,789.71

The accounting policies and notes from page 05 To 19 an integral part of these Financial Statements.

INSTITUTE OF POST HARVEST TECHNOLOGY

STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED DECEMBER 31, 2016

Attributable to owners of the controlling entity											
						Initiate capital	Gov.grant	Foreign loan	Funds from Gen. Trea.	Accumulated surpluses/(deficits)	Total net assets
						Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
B/B/F as at Dec.31, 2015						69,907,594.42	8,368,214.00	72,750,229.02	100,910,250.00	(83,325,347.91)	168,610,939.53
Change in net assets for 2016											-
Capital received from Treasury									5,000,000.00		5,000,000.00
Changes in Accumulated Surplus										11,593,784.71	11,593,784.71
Surplus / (Deficit) for the period										(9,506,446.16)	(9,506,446.16)
Balance as at Dec. 31, 2016						69,907,594.42	8,368,214.00	72,750,229.02	105,910,250.00	(81,238,009.36)	175,698,278.08

The accounting policies and notes from page 05 To 19 an integral part of these Financial Statements.

INSTITUTE OF POST HARVEST TECHNOLOGY
NOTES TO THE FINANCIAL STATEMENTS

1. Reporting Entity

1.1 Corporate Information

Institute of Post Harvest Technology is a body corporate, 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

1.2 Principal Activities and Nature of Operations

The Institute carrying out post harvest research and development activities pertaining to cereals, pulses, oil seeds, other field crops, fruits, vegetables and spice crops.

1.3 Approval of Financial Statements by the Board of Directors

The Financial Statements of the Institute have been authorized for issue by the Board of Directors

2. Basis of Preparation

2.1 Statement of Compliance

The Financial Statements of the Institute have been prepared and presented in accordance with Sri Lanka Public Sector Accounting Standards (SLPSAS).

2.2 Responsibility of Financial Statements

The Board of Directors is responsible for the preparation and fair presentation of the Financial Statements of the Institute as per the Sri Lanka Public Sector Accounting Standards.

The Board of Directors acknowledges this responsibility in the Statement of Financial Position of the Institute.

2.3 Basis of Measurement

The Financial Statements have been prepared on the historical cost basis.

2.4 Functional and Presentation of Currency

The Financial Statements are presented in Sri Lankan Rupees which is the Institute's functional and presentation currency except when otherwise indicated.

2.5 Presentation of Financial Statements

The assets and liabilities of the Institute presents in its Statement of Financial Position are grouped by nature and listed in an order that reflects their relative liquidity and maturity pattern. No adjustments have been made for inflationary factors affecting the Financial Statements.

2.6 Materiality and Aggregation

Each material class of similar items is presented separately in the Financial Statements. Items of dissimilar nature or function are presented separately unless they are immaterial as permitted by Sri Lanka Public Sector Accounting Standards SLPSAS 1 'Presentation of Financial Statements'.

2.7 Offsetting

Assets and liabilities and income and expenses are not set-off unless permitted by the Sri Lanka Public Sector Accounting Standards.

2.8 Significant Accounting Judgements, Estimates and Assumptions

2.8.1 Going Concern

The Institute's management has made an assessment of its ability to continue as a going concern and is satisfied that it has the resources to continue in operations for the foreseeable future. Furthermore, management is not aware of any material uncertainties that may cast significant doubt upon the Institute's ability to continue as a going concern. Therefore, the Financial Statements continue to be prepared on the going concern basis.

2.8.2 Useful Lifetime of the Property Plant and Equipment

Useful economic lives of Property, Plant and Equipment are estimated as disclosed in Note 3.1 to the Financial Statements.

3. Significant Accounting Policies - Recognition of Asset and Liabilities

Accounting policies set out below have been applied consistently to all periods presented in the Financial Statements of the Institute unless otherwise indicated. Further, comparative year's information has been presented.

3.1 Property Plant & Equipment

Property, plant and equipment are tangible items that are held for use in the production or supply of goods or services, for rental to others or for administrative purposes and are expected to be used during more than one period. The Institute applies the requirements of Sri Lanka Public Sector Accounting Standard – SLPSAS 7 - 'Property, Plant and Equipment' in accounting for these assets.

Basis of Recognition

Property, Plant and Equipment are recognised if it is probable that future economic benefits service potential associated with the asset will flow to the Institute and the cost of the asset can be reliably measured.

Measurement

An item of Property, Plant and Equipment that qualifies for recognition as an asset is initially measured at its cost. Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self constructed assets includes the cost of materials and direct labour, any other costs directly attributable to bringing the asset to a working condition for its intended use and the costs of dismantling and removing the items and restoring the site on which they are located. Purchased software that is integral to the functionality of the related equipment is capitalised as part of computer equipment. When parts of an item of property or equipment have different useful lives, they are accounted for as separate items (major components) of property and equipment.

Cost Model

The Institute applies cost model to all Property, Plant and Equipment, and records at cost of purchase or construction together with any incidental expenses there on less accumulated depreciation and any accumulated impairment losses. Such cost includes the cost of replacing part of the equipment when that cost is incurred, if the recognition criteria are met.

Subsequent Cost

The subsequent cost of replacing a component of an item of Property, Plant and Equipment is recognised in the carrying amount of an item, if it is probable that the future economic benefits embodied within that part will flow to the Institute and it can be reliably measured. The costs of the day-to-day servicing of Property, Plant and Equipment are charged to the statement of Financial Performance as incurred. Costs incurred in using or redeploying an item is not included under carrying amount of an item.

INSTITUTE OF POST HARVEST TECHNOLOGY

NOTES TO THE FINANCIAL STATEMENTS

Depreciation

Depreciation is recognised in profit or loss on a straight-line basis over the estimated useful lives each part of an item of Property and Equipment since this method most closely reflects the of expected pattern of consumption of the future economic benefits embodied in the asset. Freehold land is not depreciated. The estimated useful lives are as follows:

<u>Asset Category</u>	<u>Period</u>
Building	40 Years
Plant & Machinery	13.3 Years
Office Equipment	10 Years
Lab & Research Equipment	10 Years
Other Equipment	10 Years
Furniture	10 Years
Electrical & Other Fittings	10 Years
Library Books	10 Years
Computer & Accessories	4 Years
Telephone & Fittings	5 Years
Vehicles	5 Years
Agro-Farm	4 Years

3.2 Events after the Reporting Period

Events after the Reporting period are those events, favorable and unfavorable, that occur between the Reporting date and the date when the Financial Statements are authorized for issue. In this regard, all material and important events that occurred after the Reporting period have been considered and appropriate disclosures are made in the the Financial Statements where necessary.

3.3 Inventories

Inventories are valued at lower of cost and net realizable value. Cost is dertermined on the FIFO basis and includes expenses incurred in acquiring the inventories and bringing them to their existing location and condition.

3.4 Employee benefits

Defined contribution plans - Employees' Provident Fund and Employees' Trust Fund

All employees who are eligible for Employees' Provident Fund contribution and Employees' Trust Fund contribution are covered by relevent contribution funds in the line with respective statutes and regulations. Employees contribute 10% and, Institute contributes 12% and 3% of gross emoluments of employees to Employees' Provident Fund and Employees' Trust Fund respectively.

Defined Benefits Plan - Gratuity

A Defined Benefit Plan is a post-employment benefit plan other than a Defined Contribution plan as defined in Sri Lanka Accounting Standard-LKAS 19 on " Employee Benefits". The Institute is liable to pay retirement benefits under the Payment of Gratuity Act, No. 12 of 1983. Provision has been made in the Financial Statements for retirement gratuity as Employee benefit liability after the 5 years of service for all employees. Gratuity plan defines an amount of benefit that an employee will receive on retirement, usually dependant on one or more factors such as years of service and compensation. The liability recognised in respect of employee benefit liability in the Statement of Financial position is the present value of the defined benefit obligation at the reporting date together with adjustments for unrecognized past service costs. The employee benefit liability is calculated annually.

3.5 Provisions

Provisions are recognised if, as a result of a past event the institute has a present legal or constructive obligation that can be estimated reliably and it is probable that an outflow of economic benefit will be required to settle the obligation. Provisions and liabilities are recognised in the Statement of Financial Position.

4. Significant Accounting Policies - Income and expense

4.1 Revenue Recognition

Revenue is recognised to the extent that it is probable that the economic benefits will flow to the Institute and such revenue can be reliably measured.

4.2 Borrowing Cost

All borrowing costs are expensed in the period in which they occur. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds.

4.3 Tax Expense

As per the Sri Lanka Accounting Standard - LKAS 12 on 'Income Taxes', tax expense (tax income) is the aggregate amount included in determination of profit or loss for the period in respect of current and deferred taxes. Income tax expense is recognized in the Statement of Financial Performance except to the extent it relates to items recognised directly in equity or in Other Comprehensive Income (OCI), in which case it is recognised in equity or in OCI.

5. Statement of Cash Flow

The Statement of Cash Flow has been prepared by using the 'Indirect Method', in accordance with Sri Lanka Public Sector Accounting Standards – SLPSAS 2 on 'Cash Flow Statements'

06. Property Plant and Equipments

Description	Building	Plant & Machinery	Office Equipment	Lab. & Research Equipment	Other Equipment	Furniture	Electric & Other Fittings	Library Books	Computer & Accessories	Telephone & Fittings	Vehicles	Agro - Farm	Total
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Balance at the beginning of the period	115,510,658.31	52,849,959.73	4,085,183.50	84,508,885.61	570,865.00	11,463,438.62	1,438,605.37	1,481,078.55	7,373,701.06	483,497.66	41,285,413.82	1,253,934.22	322,305,221.45
Additions during the year	862,774.00	2,875,676.85	654,780.00	5,918,048.21	4,002,272.50	858,325.58	99,849.00	-	3,337,160.00	20,550.00	-	-	18,629,436.14
Written off during the year	-	-	-	-	-	-	-	-	-	-	-	-	-
Balance at the end of the year	116,373,432.31	55,725,636.58	4,739,963.50	90,426,933.82	4,573,137.50	12,321,764.20	1,538,454.37	1,481,078.55	10,710,861.06	504,047.66	41,285,413.82	1,253,934.22	340,934,657.59
Accumulated depreciation													
Balance at the beginning of the year	44,940,508.02	51,462,343.23	2,715,550.67	26,211,295.61	319,948.98	9,505,702.09	1,275,774.69	1,368,120.19	6,662,088.56	443,253.63	31,061,401.82	1,253,934.22	177,219,921.71
Charge for the year	2,909,335.81	456,164.06	316,434.17	7,794,561.89	448,250.25	680,683.49	40,248.70	36,052.10	1,162,539.96	27,484.67	2,556,000.00	-	16,427,755.10
Written off during the year	-	-	-	-	-	-	-	-	-	-	-	-	-
Balance at the end of the year	47,849,843.83	51,918,507.29	3,031,984.84	34,005,857.50	768,199.23	10,186,385.58	1,316,023.39	1,404,172.29	7,824,628.52	470,738.30	33,617,401.82	1,253,934.22	193,647,676.81
Carrying value as at 31st December 2016	68,523,588.48	3,807,129.29	1,707,978.66	56,421,076.32	3,804,938.27	2,135,378.62	222,430.98	76,906.26	2,886,232.54	33,309.36	7,668,012.00	-	147,286,980.78

INSTITUTE OF POST HARVEST TECHNOLOGY
NOTES TO THE FINANCIAL STATEMENTS

	2016 (Rs.)	2015 (Rs.)
7 Investments - Deposits		
National Saving Bank 2- 0001- 20-90520 -Kollupitiya	-	10,000,000.00
National Saving Bank 2- 0001- 21-28152 -Kollupitiya	-	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
	30,000,000.00	50,000,000.00
8 Patent Certificate for the production of "Rice Based Instant Soup Cube", inovated by Mrs Hemanthika Jayawardhana.	7,840.00	7,840.00
9 Other Non - Current Assets		
Workers Loan	9,640,525.33	9,687,817.36
Workers Loan -Special	542,460.96	489,585.60
	10,182,986.29	10,177,402.96
10 Cash & Cash equivalents		
Bank of Ceylon - Torinton	5,795,171.51	4,271,183.18
People's Bank -Anuradhapura	17,459,429.11	3,442,336.91
Patty Cash	5,000.00	5,000.00
National Saving Bank 1- 0005- 04-9129-2-Anuradhapura	766,106.46	700,085.52
National Saving Bank 1- 0001- 07-3208-7-Kollupitiya	5,778,243.83	3,519,184.10
	29,803,950.91	11,937,789.71
11 Receivables		
Debtors Control Account	491,927.39	735,617.39
Accrued Income	2,120,432.87	1,071,855.50
	2,612,360.26	1,807,472.89
11.1 Debtors Control Account		
Others	490,708.39	734,398.39
Sale -stole	1,219.00	1,219.00
	491,927.39	735,617.39
11.2 Accrued Income		
Genaral	1,344,884.44	975,951.25
Regional Economic Advancement Project 1 -Matale	49,354.70	49,354.70
Sri Lanka Council forAgricultural Research Policy	30,940.67	30,940.67
Receivables for Mahaweli	504,800.00	15,608.88
Receivables for NSF	93,056.77	
Receivables for Ampara	97,396.29	
	2,120,432.87	1,071,855.50
12 Inventories		
Noodles	31,277.40	31,277.40
Rice Mill -Rice	1,606.50	1,606.50
Stores -Paddy	34,119.62	34,119.62
Research projects	294,968.00	294,968.00
Machinery - Raw material	7,291.00	7,291.00
Machinery	519,745.00	519,745.00
Diesel - Factory	111,434.48	111,434.48
- Generator	34,941.00	34,941.00
Stationary Stock	103,032.20	
Consumable Stock	42,665.00	
	1,181,080.20	1,035,383.00

INSTITUTE OF POST HARVEST TECHNOLOGY
NOTES TO THE FINANCIAL STATEMENTS

		2016 (Rs.)		2015 (Rs.)
13 Advances				
Festival		52,800.35	-	47,250.00
Special Salary Advance		-		
Traveling		28,199.40		188,482.60
Interring Advance -General R&D		109,915.15		217,475.16
Interring Advance -General - Head Office		17,106.60		17,106.60
		<u>208,021.50</u>		<u>470,314.36</u>
14 Other current assets				
Services		675.00	-	675.00
		<u>675.00</u>		<u>675.00</u>
15 Equity				
Initiate Capital		69,907,594.42		69,907,594.42
Government Grant		8,368,214.00		8,368,214.00
Foreign Loan		72,750,229.02		72,750,229.02
General Treasury Fund - Capital		105,910,250.00		100,910,250.00
Accumulated Surplus / (Deficit)		(81,238,009.36)		(83,325,347.91)
		<u>175,698,278.08</u>		<u>168,610,939.53</u>
16 Provision For Gratuity Fund				
Gratuity fund		28,198,189.00		27,606,601.15
		<u>28,198,189.00</u>		<u>27,606,601.15</u>
Current Liabilities				
17 Payables				
Advances	17.1	1,345,752.48		1,429,895.84
Accrued Expenses	17.2	4,814,931.77		4,838,380.31
Deposits	17.3	556,070.00		159,320.00
Retention	17.4	1,321,763.94		914,175.80
Creditors Control Account	17.5	8,962,284.04		7,013,284.04
Reciepts in advance	17.6	386,625.63	-	698,135.04
		<u>17,387,427.86</u>		<u>15,053,191.03</u>
17.1 Advances				
Suspense Account - General		201,090.56		200,643.21
- EPF		986,556.50		1,053,935.92
- ETF		134,530.43		143,718.72
- Stamp Fees		-		8,775.00
- Payee/WHT		20,065.81		20,113.81
Specail Salary Advance		3,509.18		2,709.18
		<u>1,345,752.48</u>		<u>1,429,895.84</u>
17.2 Accrued Expenses				
Accrued Tax for Interest		126,826.67	-	113,588.33
Accrued Expenses - R & D		4,687,975.10		4,713,974.80
Accrued Expenses - Head office		-		10,687.18
Head Office creditor		130.00		130.00
		<u>4,814,931.77</u>		<u>4,838,380.31</u>

INSTITUTE OF POST HARVEST TECHNOLOGY
NOTES TO THE FINANCIAL STATEMENTS

	2016 (Rs.)	2015 (Rs.)
17.3 Deposits		
Tender - R&D	556,070.00	159,320.00
	<u>556,070.00</u>	<u>159,320.00</u>
17.4 Retention		
Contract Works	186,826.96	432,729.41
Unpaid - salary	268,724.39	268,724.39
Unpaid - salary - Head office	200.00	200.00
Cancelled cheques	726,740.59	73,250.00
Regional Economic Advancement Project 2 -Matale	139,272.00	139,272.00
	<u>1,321,763.94</u>	<u>914,175.80</u>
17.5 Creditors Control Account		
Other creditors	375,545.00	1,703,380.00
17.5.1 Plastic crates-Fund	2,687,630.00	1,102,520.00
Paboling Vassals-Fund	4,235,109.04	4,207,384.04
Sales of Old vehicles	1,664,000.00	
	<u>8,962,284.04</u>	<u>7,013,284.04</u>
17.5.1 Plastic crates-Fund		
Balance as at 01.01.2016	1,102,520.00	0.00
paid to ministry	9,251,445.95	0.00
	(8,148,925.95)	0.00
Plastic crates sales	1,585,110.00	1,102,520.00
	<u>(6,563,815.95)</u>	<u>1,102,520.00</u>
17.6 Reciepts in Advance		
Reciepts in advance - Deyata kirula	285,486.80	285,486.80
Reciepts in advance - Saarc	101,138.83	412,648.24
	<u>386,625.63</u>	<u>698,135.04</u>

INSTITUTE OF POST HARVEST TECHNOLOGY
NOTES TO THE FINANCIAL STATEMENTS

		2016	2015
		(Rs.)	(Rs.)
18 General Treasury Fund - Recurrent		94,750,000.00	85,139,000.00
19 Transfers from Other Agencies			
- SAARC		1,238,309.79	544,808.88
- NSF		788,605.01	421,430.76
- PPR		25,000.00	-
- Mahaweli project		1,009,600.00	
- TOT		5,137,621.78	
- Mango Project		8,663,004.26	
- Organic Method		4,435,193.20	
Receipts for Exhibition - BMICH		97,061.50	
Receipts for Exhibition - Ampara		194,951.29	
Receipts for Govisathiya - Dambulla		1,907,500.00	
		23,496,846.83	966,239.64
20 Other Revenue			
Machinery Sales	20.2	449,735.00	255,809.00
Hostel Income	20.3	2,254,309.46	2,068,474.22
Training Program	20.4	653,468.82	672,567.01
Consultancy fees	20.5	199,339.00	682,208.90
Green Gram sales	20.6	6,420.00	(13,100.00)
Rice Cream Sales	20.7	6,968.00	4,340.00
Interest Income	20.8	2,862,095.29	3,785,485.90
Auditorium fees		1,170,870.00	1,255,200.00
House Rent		386,750.00	428,000.00
General Income		537,163.15	314,776.25
Sale of Publications		31,795.00	52,125.00
No Pay		19,555.83	64,847.19
sales of Garden		4,800.00	3,900.00
Sales of Soya Beans		-	95,711.00
Fines		980.00	
Sample test fees		11,480.00	
		8,595,729.55	9,670,344.47
20.2 Machinery Manufacturing Trading Profit & Loss Account			
Machinery Sales Parboiling Vessels		0.00	
Machinery Sales - Rice Flake Machines		981,650.00	981,650.00
Raw Material Balance as at 1.1.2016		7,291.00	
Add: Purchases Raw material		20,250.00	
		27,541.00	
Raw Materials Balance as at 31.12.2016		7,291.00	
Machinery Manufacturing Cost C/F		20,250.00	
Machinery Balance as at 1.1.2016		519,745.00	
Machinery Manufacturing Cost B/F		20,250.00	
		539,995.00	
Add: Purchases of Machineries		511,665.00	
		1,051,660.00	
Machinery Balance as at 31.12.2016		519,745.00	
Production Cost -Sale of Machinery		531,915.00	531,915.00
Profit			449,735.00

INSTITUTE OF POST HARVEST TECHNOLOGY
NOTES TO THE FINANCIAL STATEMENTS

	2016 (Rs.)	
20.3 Hostel Income		
Income	4,443,200.00	
Expenditure	2,188,890.54	
		<u>2,254,309.46</u>
20.4 Training Program		
Income	965,830.00	
Expenditure	312,361.18	
		<u>653,468.82</u>
20.5 Consultancy fees		
Income	413,350.00	
Expenditure	214,011.00	
		<u>199,339.00</u>
20.6 Green Gram Sales		
Income	17,850.00	
Expenditure- Purchasing Cost	11,430.00	
		<u>6,420.00</u>
20.7 Rice Cream Sales		
Income	16,420.00	
Expenditure	9,452.00	
		<u>6,968.00</u>
20.8 Interest Income		
NSB 1-0005-04-9129-2 A/pura	31,720.94	
NSB 1-0001-07-3208-7 Kollu	195,027.79	
NSB 2-0001-20-90520 Kollu	85,352.05	
NSB 2-0001-21-28152 Kollu	(190,547.95)	
NSB 2-0001-21-28187 Kollu	781,917.80	
NSB 2-0001-21-28195 Kollu	781,917.80	
NSB 2-0001-21-28179 Kollu	932,739.73	
		<u>2,618,128.16</u>
With Holding Tax		
NSB 1-0005-04-9129-2 A/pura	-	
NSB 1-0001-07-3208-7 Kollu	5,868.06	
NSB 2-0001-20-90520 Kollu	(15,243.84)	
NSB 2-0001-21-28152 Kollu	(15,243.84)	
NSB 2-0001-21-28187 Kollu	62,553.42	
NSB 2-0001-21-28195 Kollu	62,553.42	
NSB 2-0001-21-28179 Kollu	74,619.18	
		<u>175,106.40</u>
Banks Net Interest Income		<u>2,443,021.76</u>
Interest Income Other		
Special advance Interest	10,804.48	
Distress Loan Interest	388,137.26	
Special Loan Interest	20,131.79	
		<u>419,073.53</u>
		<u>2,862,095.29</u>

INSTITUTE OF POST HARVEST TECHNOLOGY
NOTES TO THE FINANCIAL STATEMENTS

	2016 (Rs.)	2015 (Rs.)
EXPENSES		
21 Wages,salaries and employee benefits		
Salaries & Wages-Permanent staff	45,536,057.66	56,472,206.86
Casual staff	1,773,394.11	1,802,487.99
Life Allowance	10,774,496.51	
E.P.F.	6,692,816.26	6,769,705.74
E.T.F.	1,673,205.17	1,699,843.51
Overtime and Holiday Pay	1,950,364.71	1,847,383.46
Other allowance	280,252.00	102,700.00
Research Allowances	1,219,645.37	75,334.50
Incentives	220,893.98	542,506.85
Gratuity	4,182,511.22	5,961,279.13
	74,303,636.99	75,273,448.04
22 Supplies and consumables used		
Printing and Stationery	1,019,126.97	770,710.93
Office Requisites, Sundry expenses	1,089,656.68	865,494.15
Consumable for Research projects	908,417.52	1,043,305.38
Consumables & Admin Ex. Of Lab Re.Pro	-	1,517,168.00
Running expenses of Hostel and kitchen	813,696.00	287,698.09
Research Projects	859,958.06	549,351.20
Running expenses vehicles	2,293,875.94	2,741,150.58
Vehicles maintenance	2,880,608.54	1,920,151.30
Buildings and Structures	2,369,949.62	1,176,122.30
Machinery Maintanance	756,793.14	1,017,249.62
Farm Research Expenses	-	41,750.00
	12,992,082.47	11,930,151.55
23 Depreciation		
Buildings	2,909,335.81	2,887,766.46
Plant & Machinery	456,164.06	290,271.38
Office Equipment	316,434.17	255,295.95
Laboratory & Research Equipment	7,794,561.89	7,729,393.90
Other Equipment	448,250.25	51,543.00
Furniture & Fittings	680,683.49	619,075.20
Electric & Other Fittings	40,248.70	31,368.80
Computer & Accceries	1,162,539.96	394,525.00
Telephone & Fittings	27,484.67	31,995.82
Library Books	36,052.10	60,801.00
Vehicles	2,556,000.00	5,525,120.00
	16,427,755.10	17,877,156.51

INSTITUTE OF POST HARVEST TECHNOLOGY
NOTES TO THE FINANCIAL STATEMENTS

	2016 (Rs.)	2015 (Rs.)
24 Other Expenses		
Traveling expenses-Domestic	806,249.17	944,074.30
Traveling expenses-Foreign	1,098,749.95	154,478.00
Staff tea	451,006.29	637,142.90
Periodicals, journals and news papers	403,684.50	136,880.18
Seminars	105,357.50	144,995.00
Training Programs	805,182.65	537,820.40
Entertainment	368,378.98	154,580.27
Contract Labour	81,600.00	322,771.65
Welfare	4,000.00	6,690.00
Insurance and licenses	442,223.96	470,221.45
Telecommunication	1,438,057.61	1,130,777.95
Postal charges	101,216.00	97,155.00
Electricity	1,502,466.77	1,374,005.75
Water,	557,184.76	844,034.07
Rent	301,748.00	208,832.97
Rates and Taxes	288,960.36	154,107.58
Exhibition	12,445.00	108,892.95
Publication	7,000.00	-
Human Resources Development	415,022.98	157,212.00
Audit fees	250,000.00	250,000.00
Legal Charges	-	52,360.00
Uniform Allowances	224,000.00	212,000.00
Expenses for SAARC	1,238,309.79	544,808.88
Expenses for NSF Project	788,605.01	421,430.76
Expenses for Mahaweli Project	465,392.73	
Expenses for Development project - TOT	5,131,321.78	
Expenses for Development project - Mango	8,663,004.26	
Expenses for Development project - Organic	4,435,193.20	
Exhibition - BMICH	99,123.80	-
Exhibition - Ampara	194,951.29	-
Exhibition - Govisathiya - Dmbulla	1,907,500.00	-
	32,587,936.34	9,065,272.06
25 Finance Costs		
	37,611.64	33,307.23
	37,611.64	33,307.23

INSTITUTE OF POST HARVEST TECHNOLOGY
NOTES TO THE FINANCIAL STATEMENTS

		2016 (Rs.)	2015 (Rs.)
27 Payables			
Advances	17.1	1,345,752.48	1,429,895.84
Accrued Expenses	17.2	4,814,931.77	4,838,380.31
Deposits	17.3	556,070.00	159,320.00
Retention	17.4	1,321,763.94	914,175.80
Creditors Control Account	17.5	8,962,284.04	16,264,729.99
Reciepts in advance	17.6	386,625.63	698,135.04
		17,387,427.86	24,304,636.98
Balance as at 1.1.2016		24,304,636.98	50,283,425.74
Less : Balance as at 31.12.2016		17,387,427.86	51,911,238.13
Increase / Decrease Liabilities		(6,917,209.12)	1,627,812.39
28 Non- Current Liabilities			
Provision For Gratuity Fund			
Balance as at 1.1.2016	16	27,606,601.15	
Less : Balance as at 31.12.2016		28,198,189.00	
Increase / (Decrease) Liabilities		591,587.85	
29 Current Assets			
Stocks	12	1,181,080.20	1,035,383.00
Advances	13	208,021.50	470,314.36
Deposits	14	675.00	675.00
Debtors Control Account	11.1	491,927.39	735,617.39
Accrued Income	11.2	2,120,432.87	1,071,855.50
		4,002,136.96	3,313,845.25
Balance as at 1.1.2016		3,313,845.25	8,491,946.30
Less : Balance as at 31.12.2016		4,002,136.96	3,313,845.25
Increase / Decrease Current Assets		688,291.71	(5,178,101.05)
30 Property,Plant and Equipment			
Additions during the year		18,629,436.14	
Adjusted to the Accumulated Surplus A/C		(11,593,784.71)	
Purchase on cash basis during the year		7,035,651.43	
31 Investment - Deposits			
National Saving Bank 2- 0001- 20-90520 -Kollupitiya		-	10,000,000.00
National Saving Bank 2- 0001- 21-28152 -Kollupitiya		-	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
		30,000,000.00	50,000,000.00
Workers Loan		9,640,525.33	9,687,817.36
Workers Loan -Special		542,460.96	489,585.60
		10,182,986.29	10,177,402.96
Total Non - Current Assets		40,182,986.29	60,177,402.96
Balance as at 1.1.2016		60,177,402.96	59,903,499.07
Less : Balance as at 31.12.2016		40,182,986.29	60,177,402.96
Increase / Decrease Non Current Assets		(19,994,416.67)	273,903.89

INSTITUTE OF POST HARVEST TECHNOLOGY
NOTES TO THE FINANCIAL STATEMENTS

	2016 (Rs.)	2015 (Rs.)
32 Cash & Cash equivalents at the beginning of period		
Cash at Bank		
Bank of Ceylon - Torinton	4,271,183.18	(74,312,238.61)
People's Bank -Anuradhapura	3,442,336.91	70,534,726.71
Patty Cash	5,000.00	5,000.00
National Saving Bank 1- 0005- 04-9129-2-Anuradhapura	700,085.52	2,614,099.84
National Saving Bank 1- 0001- 07-3208-7-Kollupitiya	3,519,184.10	4,040,428.01
Cash & Cash equivalents as at 01.01.2016	11,937,789.71	2,882,015.95
33 Cash & Cash equivalents at the ending of period		
Cash at Bank		
Bank of Ceylon - Torinton	5,795,171.51	4,271,183.18
People's Bank -Anuradhapura	17,459,429.11	3,442,336.91
Patty Cash	5,000.00	5,000.00
National Saving Bank 1- 0005- 04-9129-2-Anuradhapura	766,106.46	700,085.52
National Saving Bank 1- 0001- 07-3208-7-Kollupitiya	5,778,243.83	3,519,184.10
Cash & Cash equivalents as at 31.12.2016	29,803,950.91	11,937,789.71
34 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 2016.12.31 at Cost		179,658.30
35 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 the P.M.B. transferred Assets . The transferred Assets are being revalued		
36 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 Rs30,806,979.10 . One being Rs5,329,344.62 as payment of extra work and the other Rs5,477,634.48. Total payment 10,806,979.10 and their loss and damages Rs20,000,000.00 the total amount Rs30,806,979.10 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		
37 The initiate Capitals of the INSTITUTE OF POST HARVEST TECHNOLOGY shown Rs 500,000,000.00		
38 The institute has received from the treasury on capital expenditure from 2000 to 2016 Rs. 105,910,250.00		



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கணக்காய்வாளர் தலைமை அதிபதி திணைக்களம்
AUDITOR GENERAL'S DEPARTMENT



මගේ අංකය
எனது இல.
My No.

NCP/AP/E/IPHT/01/16/14

ඔබේ අංකය
உமது இல.
Your No.

දිනය
திகதி
Date

13 September 2017

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 2016 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 2016 Comprising the statement of financial position as at 31 December 2016 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 on 09 August 2017

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 Auditing 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 judgments, 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

2. **Financial Statements**

2.1 **Qualified Opinion**

In my opinion, except for the effects 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 the Institute of Post - Harvest Technology as at 31 December 2016 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 Sri Lanka Public Sector Accounting Standards

Useful life time of the non-current assets were not review annually according to the terms of Sri Lanka Public Sector Accounting Standards no 07 and the cost of Rs. 118,207,445 were fully depreciated, but those assets were been used at present. Further, the above estimated error had not been corrected according to the Sri Lanka Public Sector Accounting Standard no 03.

2.2.2 Accounting Deficiencies

The following observations are made.

- a) Accrued expenditure a sum of Rs. 307,480 for the year under review had not been accounted.
- b) Unused stationary and consumable goods valued at Rs. 260,505 which were purchased for the project functions in the years 2016-2018 under National Food Production program had not been accounted as closing stock as at 31 December for the year under review.
- c) Although an agro farms valued at Rs. 1,253,934 had been accounted under property plant and equipment, no such assets which could gain future benefits to the institute were observed physically.

2.2.3 Unexplained Differences

The following observations are made

- a) According to the financial statements the receivable income related to three income items were Rs. 354,302 as at 31 December for the year under review. However, it had been shown as Rs.662,250 in revenue registers and a deficit of Rs.307,948 were observed due to above variations.



- b) According to the Income Statement prepared for the year under review a difference of Rs. 400,223 had been observed when comparing the income related to four other income sources with the income registers.

2.2.4 Lack of evidence for Audit

The physical stock verification reports related to the six stock items valued at Rs. 1,002,498 which were mentioned in the book values at the financial position statement of the reviewed year had not been presented to the audit.

2.3 Accounts Receivable

Action had not been taken to recover a total sum of Rs. 80,295 receivable on 02 account balances over a long period of time.

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

The following instances of non-compliance were observed.

Reference to Laws, Rules, Regulations,
etc

Non-compliance

- | | |
|--|---|
| <p>a) Paragraph No 01 of the act of declaration of assets and liabilities of No 01 of 1975 of national state council amended by act No.74 of 1988.</p> | <p>Although every staff officers have to submit the declaration of assets and liabilities that statement had not been submitted 20 such officers at the Institute of Post-Harvest Technology.</p> |
|--|---|

b) Financial Regulations of the Democratic Socialist Republic of Sri Lanka

- | | | |
|------|--|---|
| i) | Financial Regulation No.371(2) | The advances should be settled as soon as possible after completing the relevant function , but the advances of Rs. 73,915 which were granted for various functions in the years of 2007,2012 and 2014 had not been settled up to the date of 31 July 2017. |
| ii) | Financial Regulation No.570 and No.571 | The Tender deposits of Rs.126,500 and contract retentions of Rs. 260,853 which were prevailing since 2009 to 2014 had not been added to the income |
| iii) | Financial Regulation No.757(b) | A stock verification of the institute had not been conducted for the year ended 31 December 2016 and the reports had not been submitted to the audit. |

3. Financial Review

3.1 Financial Results

According to the financial statements presented, the operations of the Institute for the year ended 31 December 2016 had resulted in a deficit of Rs. 9,506,446 as compared with the corresponding deficit of Rs. 18,403,751 for the preceding year, thus observed a growth of Rs. 8,897,305 in financial results in the year under review. Increase of recurrent grant by Rs. 9,611,000 received from treasury had been the main reason for the above growth.

When analysing the financial result of the year under review and 4 preceding years, although the deficit had a growth continuously from the year 2012 to 2015 a considerable decrease of the deficit had been observed in the year under review. However the adjusted contribution had been growth from Rs.49, 267,371 in the year 2012 to Rs. 81,224,946 in the year under review considering the employee emoluments and depreciation on non-current assets.

4 Operating Review

4.1 Performance

The objective of the institute is to be reduce the post-harvest destruction and to improve the income of the farmers by conducting experiments on preservative and non-preservative food in Sri Lanka and improving the technology related to post harvest, introducing modern technology on preparing, packing, transporting, and storing of agricultural products in terms of the extra ordinary gazette no 1137 on 19 of June 2000. Following observations were made with related to the fulfilment of above objectives.

- a) Reducing the post-harvest wastage of agricultural crops is a basic objective among the objectives of establishing the institute and it had been founded by a survey conducted in the year of 2009 that the post-harvest wastage of whole agricultural crops was at a percentage of 30 to 40. Although there was a period of about seven years up to the year of reviewed, the institute had no data base to identify the progress of the limitation of post-harvest wastage.
- b) The Institute of Post-Harvest Technology had conducted 36 researches in past 3 years and reviewed year. The institute had not keep records on introducing the results of those researches to the field and the place where the places the technology is been used in the field. Therefore a confirmation had not been taken to the audit on the introduction of the technology of the researches to the field, application of the technology and the productivity of the application of those results of the researches.

- c) After establishing the Institute of Post-Harvest Technology in the year 2000 and sixteen years up to the reviewed year, they have produced 37 technical machineries under the mechanical engineering sector and only 03 machine out of 37 had been obtained the patent authority. Therefore 92 percent of the total machinery production had been left without the ownership to the institute. Further 24 machines out of above had not been used in the field up to 31 December of the year under review, so a confirmation could not be taken to verify whether 65 percent of machineries out of total productions are useful at the field.
- d) The equipment which are purchased in the reviewed year for a cost of Rs. 2,777,843 to distribute among necessary beneficiaries of the project of Production and Supply Chain of Mango, established under the national program of Food Production in the years of 2016-2018 had not been distribute to the beneficiaries since 15 June 2017.
- e) The laboratory of the Institute had been renovated in the year of 2014 by purchasing equipment spending cost of Rs. 61.6 million in order to make it in international standards. Although the accreditations of which the international certification to perform the researches according to the standards had not been obtained so, the researches done by the Institute could not be acceptable.
- f) Although the projects had been established for the Food Production National Program bearing a cost of Rs. 18,235,818 in the year under review, a formal evaluation method had not been implemented by establishing the performance measuring criteria to evaluate the contribution of the Food Production National Program to the project cost.

4.2 Management Activities

The following observations are made

- a) Due to the generalization of light policies when handling over the hostel of the Institute for external people no action had been taken to recover the charges of Rs.60,900 receivable from the guest lodged in 21 occasions in the reviewed year and Rs.84,600 in the past year for 17 occasions.

- b) Ten rice cream machines had been purchased in 2014 for value of 3,360,000 in order to issue them by receiving 50 percent from the beneficiaries. They were distributed free at the end of the year under review. But verification had not been done to confirm whether the machines are used for rice cream productions and feedback had not been conducted to promote the production further.
- c) A Senior Research Officer of the institute had obtained study leaves with salary by a bond activating from 23 July 2006 to 29 July 2009 in order to take his degree in Doctor of Philosophy. According to the bond signed, he had to work in the institute since 29 June 2009 to 29 June 2019. The said officer had been reported to work 29 June 2009 after completing the degree in Doctor of Philosophy, but he had resigned on 07 January 2016 without continuing 10 years of work. No action had been taken to recover the loss gained by the institute due to the breach of the bond.
- d) There were Rs. 150,425 unidentified remittances in the current account numbered 008-1-001-11725665 at the Peoples' Bank as at the 31 December 2016 and they had not been identified and accounted till the auditing date 21 June 2017.

4.3 Idle and Under-utilized Assets

The equipment named Gas Chromatograph Mass Spectrometer of Rs. 15,216,575 which is usable for the research activities had been purchased in the year of 2015 but it had been idled without get in to use for any function since 31 May 2017 while spending the maintenance expense to retain that machine in fully air conditioned room.

4.4 Procurement and Contract Process

The following observations are made

- a) Deviation from the procurement procedure without taking sealed three price quotation, the procurement function had been done based on the quotation taken by hand for purchasing valued at Rs. 3,989,050 within 04 circumstances.

- b) The construction of the renovation of an official quarters owned by the institute had been made by awarding the contract to the received only one bidder at the price of Rs. 3,790,323 mentioned in the engineering estimate, without taking adequate price quotation from the registered contractors.
- c) Adequate actions had not been taken relating to the loss of over Rs. 16.6 million for the institute in the year of 2014 when purchasing the equipment to the laboratory.

4.5 Contentious Transactions

Exterior to the development functions which had to be conducted in the "Govi Sathiya" in terms of the cabinet papers of No. 55/2016 presented by the Ministry of Agriculture for the Govi Sathiya program, a diner party had been held by spending Rs. 275,000 from the program allocations.

4.6 Staff Administration

Efficiency bar exams had not been held according to the approved recruitment procedures for any employee sector in the Institute of Post-Harvest Technology from the beginning to the end of the reviewed year. The service confirmations, promotion and salary increments of the officers had been done continuously after three of their probation period without conducting the above said examinations.

5 Accountability and Good Governance

5.1 Presentation of Financial Statements

According to the Public Enterprises Circular No PED 12 dated 02 June of 2003, the financial statements should be presented to the audit within 60 days of the end of the financial year but the financial statement of the reviewed year had been presented on 31 May 2017.

5.2 Unresolved Audit Paragraphs

According to the Committee of Public Enterprises held on 19 August 2010, the Research Advisory Committee which established in order to confirm the quality and professionalism of the researches done by the Institute had to congregate at least 04 times a year to evaluate the research proposal and research progress. But the Research Advisory Committee had not been congregate at least one time for the year under review.

6 Systems and Controls

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

Areas of Systems and Controls

Observations

a) Financial Control

Hostel income had not been recovered by using a regular internal control system

b) Research and laboratory activities control

i) Activities had not been done in terms of research guide line on researches.

ii) Instructions had not been taken from Research Advisory Board.

iii) The Laboratory owned to the institute had not been standardized

iv) The laboratory equipment had not been utilized effectively.



c) Staff Administration

i) The staff had not been Attended to regular training programs.

ii) Efficiency bar exams had not been held.

H. M. Gamini Wijesinghe

Auditor General

Sgd./ H.M. GAMINI WIJESINGHE
Auditor General