

## Hayleys Agro Biotech (Pvt) Ltd



simplifying Business through  
**In-Vitro Tissue Culture Technology  
& Vegetative Propagation**

## About us

Hayleys Agro Biotech (Pvt) Limited is operated under the Agriculture & Agri Business arm of the Hayleys Group of Sri Lanka. Hayleys Agro Biotech (Pvt) Ltd is a subsidiary of Hayleys Agri Products sector within, involves in tissue culture plants production in fully sterile condition adhered to best international standard in the well-equipped state of art laboratory.

The Agro Biotech offers a wide range of specialized products for the benefit of our clientele. Company employed high tech equipments in all operations and instrumented with skilled technicians who highly recognized in conducting many biotechnical applications within our world class facility.

The Plant Biotechnology Complex is located at 1700m from the sea level among the beautiful tea estates surrounded by tall mountains in Nanuoya, Srilanka. Clean environment enhance our productivity and enable to acclimatize disease free, true to type of planting materials in quick succession.

Hayleys Agro Biotech, provides an interesting source for a variety of horticultural, edible and flowering plants through in-vitro tissue culture technology. Our customers could range from Nurseries, Breeders, Commercial cultivators to Landscapers.

Our group was founded in 1878 as Charles P. Hayley & Company, Hayleys today accounts for 3.7% of Sri Lanka's export income, and 1.9% of the Country's GDP with internationally diversified businesses in Fiber, Hand protection, Purification of Activated carbon, Transportation, Agri products and Inputs, Plantations, Fabric, Consumer Products, Industry Inputs, Resorts, Power and energy, Investments and Services.

Hayleys has grown from a small proprietorship in Sri Lanka's southern city Galle, into one of Sri Lanka's largest, most diversified public companies. The 130 year Hayley chronicle traverses the tapestry of time, changing with it and taking shape from it.

Today Hayleys is a Sri Lankan multinational conglomerate renowned globally and locally in certain specialized areas of expertise such as Agriculture & Agri Business, Transportation & Infrastructure and Consumer & Leisure.

A quoted and truly broad-based company, in the 52 years since its incorporation Hayleys, has had a record of 26 scrip issues and 4 modestly-priced rights issues, together with dividend payouts averaging 25% in each of these years.

# Capacity



Our production capacity touches over 10 million plantlets per annum with an expansion potential of up to 12 million.



Growth rooms with shelf space of 1.2 million plants at a time, provided appropriate environment for the plant development.



Accommodates 25 HEPA filter Lamina flow work station with UV installation and Sterile Pots.



Media preparation facility with the storage area. Our annual production capacity is over 60,000 liters.



Annually sell 2.5 million plants to international customers and 0.5 million plants to local commercial cultivators.



Currently dispatch over 40 location world wide, packed and dispatched according to international standard.



Housing poly tunnel plant nurseries in area of 3 hectares for acclimatization process and vegetative plant development.



Constantly maintains Laboratory monthly contamination below 3%.



Accompanies 75 well experience and well trained technicians for the daily operation.

# Departments

Operation structured in to four departments involve in various activities to develop and deliver top grade plants to customers in timely manner.

## Research and Development

Business invested valuable time and money to develop new protocols and improve existing protocols for better output. Our management is keen in areas of continuous improvement of compositions, growing conditions and techniques. Department currently deal with preserving and increasing germplasm over 315 varieties. Also initiate the generation 1 clones for the greater production through in-vitro cloning techniques. Ensures true to type population for mass propagation.

## Quality Control

Mainly focused to release good quality plants to customers. Team works closely with other departments to ensure the quality has maintained at acceptable level in all areas of the operation. Ensure the quality parameters met during the time of selection of plants for the rooting and dispatch. Continuously assess the technical skills of technicians and analyze the individual output every month. Maintains superior hygiene conditions in surrounding and inner environment of laboratory.

## Production

Core of our business portfolio handles over 150 varieties for mass propagation. Involves in multiplication and rooting varieties for the sale according to the production plan. Demonstrate the exact cutting position for sub culturing and rooting for technicians. Employs accurate culture media by considering the nature of plants. Tracks the number of cycles per variety for optimum output. Involve in media formulation and production.

## Nursery Management

Involves in producing acclimatized plants materials for export and local markets. Tissue cultured and field grown plants are inserted in to the Giffy plugs and sold as value added product. Department process over 500,000 plants annually. Also maintains mother plants nursery for the initiation procedures. Nurseries are facilitated with efficient irrigation system and controlled environment growth chambers. Deals with export permits and certification for export.

# In-vitro technology and acclimatization

**Stage 1:** is the initiation phase. It concerns the establishment of plant tissue in vitro by sterilizing the material and initiating it into culture media for initial development. Known to be Generation 1(G1)



Fig.1 Technician involved in extracting shoot tips with the help of microscope from the mother plant.



Fig.2 Completely developed plants from the extracted tissues—G1 plants.



Fig.3 Technicians are dividing multi plants to individual ones for sub culturing.



Fig.4 one plants developed into multi number of plants from the same base.

**Stage 2:** is the multiplication phase. At this stage, the in vitro plant material is re-divided and placed in a medium with plant growth regulators that induce the proliferation of multiple shoots. This process is repeated many times until the number of plants desired is reached.

**Stage 3:** is the root formation phase. It involves the introduction of hormones to induce rooting and the formation of complete plantlets.



Fig.5 Root initiated plants from the bottom



Fig.6 Root initiated plants from the side view.



Fig.7 Ready to dispatch acclimatized Tissue cultured plants are on Giffy plugs

**Stage 4:** acclimatization phase. The plants are moved from the laboratory to the greenhouses for acclimatization and further development.

We offer young plants to our customers in different stages of the plant development cycle as convenient to buyers.

- **On-agar tissue culture plants (stage-2 plants)**



- **Off-agar tissue culture plants (stage-3 plants)**



- **Tissue culture plants in plugs after acclimatization (stage-4 plants)**



# Vegetative Propagation

Field grown liners and edges are multiply through the vegetative reproduction method. The single and multi shoots plants are sold in plugs or as bare root as convenient to customers. Plants are grown in poly tunnels in area of 3 hectares and equipped with chambers for acclimatization process. Our product is ideal for direct replant at the customer's nursery for further development or directly saleable to customer in the same containers.



**Acclimatization Chamber equipped with controlled environment.**



**Nursery grown liners**



**Bare root single plants**



**Single plants in plugs**

## Packaging

Our packaging is carried out in an area especially constructed complying to Australian Quarantine Service, equipped with exhaust fan to reduce the cross contamination.



Most stage 2 plants are transferred in to clear high density autoclaved poly bags or tubs contained media to provide ideal environment for plant survival.

Most stage 3 plant materials are delivered in either clear poly bags or in see through containers.



All acclimatized single or multi bare root plants are send collectively bundled. Plants in plugs send on trays, covered with cardboard protection with holes for plant respiration and to maintain the moisture level.

All plants are packed on Styrofoam boxes or corrugated cardboard boxes cushioned with cool packs and with data logger to track the temperature fluctuation during the shipment.





## Our International Collaborations



## Our Achievements in Agri Sector in Sri Lanka

- The National Agri-Business Council Awards 2014.
- The National Business Excellence Awards 2013.
- The National Agri-Business Council Awards 2013.
- The National Agri-Business Council Awards 2012.
- The National Agri-Business Council Awards 2011.
- The National Agri-business Council Awards 2009.
- The National Agri-Business Council Awards 2008.
- The National Business Excellence Awards 2008.
- The National Agri-Business Council Awards 2007.
- The National Business Excellence Awards 2007.

## Contact us

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