



# Alice Biotech Pvt. Ltd.



A Journey for Better Tomorrow





## About us

We are an ISO certified company and have state-of-art manufacturing facility in Noida. Alice Biotech is a venture of Agriculture Technologists and engineering experts bringing the latest and the best in Greenhouse technologies since 2012. We deliver end to end solutions in Greenhouses starting with concept and going on to design and fabrication as well as turnkey installation.

We offer customized greenhouse construction to suit specific purposes. We can design and construct greenhouses for research purposes as well as for large scale commercial farming. Our technology ushers is a revolution in agriculture. Exotic plants, herbs, vegetables and fruits that would not be able to flourish in normal open climatic conditions can now be grown under controlled conditions. We believe in adopting technology to suit objectives of a Research Scientist as well as suit the budget of a farmer. Years of experience and expertise go into our designs that deliver outstanding returns on investments.

### OUR STRENGTH

- Professionally Managed Company
- Using Best Technology & Product Globally available
- Philosophy of the company is after sales service



# Green House

20 Sq. mtr. to 1000 Sq. mtr.

Alice Biotech designs and creates Greenhouses incorporating the perfect balance of humidity, temperature and light to permit plants to flourish. Each parameter can be controlled individually depending on the plant requirement. That is about the interiors. As for exteriors, the structure itself is fabricated using quality modern structural materials like steel, aluminum and polycarbonate sheet to suit local weather conditions and with the end purpose in mind. Light in weight, good aesthetic appearance and structurally strong, we fabricate greenhouses to withstand rain, snow and strong winds.

One of our specialties is design and fabrication of Research Greenhouses to enable scientists to carry out in-depth studies on plant growth. These greenhouses conform to DBT (Department of Biotechnology India) guidelines with parameters modified to suit specifications of customers.

## Features:

- Capable of withstanding wind speed of 120 Kmph • Uniform and better quality • Special designed Aluminum locking and fastening profile for covering material • Galvanized Iron Pipe Construction • Requires less area to get better yield and benefits
- Less chances of disease attack, thus reduction in disease control cost • Higher Efficiency of Water & Fertilizer Use • Less fertilizer requirement, thus reduction in fertilizer cost

## Specification:

**Structure:** GI Square / Rectangular Pipe

**Covering:** Multiwalled Polycarbonate Sheet /Glass /FRP Sheet

**Fixing:** Special Aluminium locking & fastening profile

**Civil :** Curtain Wall / Flooring / Plinth / Walking Path

**Shading:** Aluminet Thermal Net / Agro Shade Net

**Cooling System:** Evaporative cooling System /Air conditioner cooling System /Air Circulating Fan

**Heating :** Forced Heat convection System /Heat blower System/Hot Water circulating system.

**Humidity:** Micro Fogging System / Micro Misting System /Boom Irrigation System/ Ultra Sonic Humidifier

**Lighting :** PAR Lamps/Flourscent Lamp/Metal Halide Lamp/ LED Grow Lamps

**Controller:** Microprocessor Based system for Temperature, Humidity & Light.

**Benches:** Fixed /Moveable Top

**Fertigation System:** Automatic fertigation dosing system





# Transgenic Green House

**15 Sq.mtr. to 500 Sq. mtr.**

Transgenic Greenhouse provides us the chance to study plant growth and result in a desired contained environment. The level of containment is described by the limit of bio-safety concern associated with the studies being conducted. The Transgenic Greenhouses are unique designed Greenhouses which will comply the set of guidelines from DBT (Deptt. Of Biotechnology India) and desired level of the containment set by the customer.

These are the state of the art facility having the ideal combination of Temperature, humidity & Light intensity to grow the plant inside the structure. We design & fabricate the facility as per the local condition of the site like Wind Load, Rain & Snow load altitude & also with the user's requirement.

The objective of containment / Transgenic study is to restrict the spreading of experimental entity. This facilities will provide the chance to study plant growth and result in a desired contained climate. The containment greenhouses are precisely used for Bio-tech studies and Quarantine purpose.

We offer distinctive design to manufacture it, easy for user to select the product as per user specification.

Personalizes planning, design and fabrication facility are also provided by Alice Biotech to ensure a different angle

This system will offer resilience & adaptability.

This system will controlled & check requirement for additional flexibility.

The Alice Biotech offer many type of design to make it simple for user to select the item as per his requirement with special appearance, if any, desired by the user is also taken into consideration.

Alice Biotech also offers complete package for the design of a greenhouse facility. The company is consulted directly by the User to the implementation team of a project to take care of the planning and implementation of the Greenhouse project.



# NATURALLY VENTILATED POLY HOUSE

**Size: 50 Sq. mtr. to 10000 Sq. mtr.**

Our poly houses provide a simple and inexpensive solution for sensible crops to hostile weather conditions.

The naturally ventilated Poly house was designed to meet the growing needs of farmers around the world to produce higher quality crops of vegetable & flower thus enhance the return.

The naturally ventilated poly house is designed to solve the problem of ventilation and humidity and is especially suited for hot and humid weather conditions.

This is carried out by Fix openings located in the center of each of the structure's arches which run's along the entire length and four sides ventilation, which run's along the entire length & breadth of the structure.

These openings allow natural ventilation and release hot air. This type of poly house can withstand winds of 100-120 kilometers per hour. The naturally ventilated Poly House has a number of variations depending on the climate zone and type of crop.

Under extreme weather conditions a naturally ventilated Poly House will be constructed by using 76mm / 60mm / 48mm / 42mm / 32mm / 25mm Galvanized pipes of IS 1239/3601/4923 standard are most suitable.

The following equipment and systems may be added: Fans, Air Circulators, Thermal Screens, Automatically Operated Curtains, Heating Systems, Drainage, Control Systems, Irrigation Systems, Substrate Media and other systems.

- Natural ventilation systems for efficient air exchange
- Reduced energy costs with environmental controls
- Specialized roof designs shed rain & snow
- Roof coverings diffuse light to harness plant growth
- Increase crop yields

## **Specification:**

**Structure:** GI Round /Square Pipe /Lipped channel Section

**Covering:** Polyfilm covering (200 Micron)

**Shading:** Aluminet Thermal Net / Agro Shade Net ( 75% / 50% / 35% )

**Cooling System:** Air Circulating Fan /Cross Way Fogger

**Humidity:** Micro Fogging System / Micro Misting System / Boom Irrigation System/

**Controller / Automation :** Top Ventilation system, Internal Motorised Shading & Automatic Fertigation system for Irrigation

**Irrigation:** Drip / Micro sprinkler system

**Ventilation :** Motorised Automatic / Gear Operated Manual opening System

**Fixing:** Aluminium / GI Box type Profile with GI Zig Zag Spring wire





# HI-TECH POLYHOUSE WITH FAN & PAD SYSTEM

**Size: 50 Sq. mtr. to 4000 Sq. mtr.**

In this system, Cooling pads are mounted in one end wall or sidewall of the Polyhouse. This system is supplied with water from a pipe above the pads and excess water is collected in a gutter at the bottom. Air drawn through the wet pads by slow axial fans mounted in the opposite end wall or sidewall is saturated and cools the greenhouse.

Hi Tech Poly House with fan and pad controlled is used in those systems where high efficiency cooling is required. It can be used for many different cooling purposes but is particularly suitable for cooling of greenhouses where higher air velocity is required.

Hi Tech Poly House with Celdak Cellulose Pads (Sweden make) to acquire proper CFM of air movement per sq.ft of area will be provided. Even water delivery through distribution pipe will be ensured. Slow water contamination and efficient water flow, to achieve temperature  $10-12^{\circ}\text{C} \pm 2^{\circ}\text{C}$  below ambient temperature @ 45% RH.

Evaporative cooling, which uses the heat in the air to evaporate water from plants and other wetted surfaces can be used to cool the greenhouse as much as  $10$  to  $12^{\circ}\text{C}$  below the outside temperature. Although evaporative cooling is most effective in dry climates, such as suitable for North, Central and west part of India.

The heat that is needed for the evaporation is taken from the air itself. The air that leaves the pad is therefore cooled and humidified simultaneously without any external energy supply for the evaporation process. This type of Green House is suitable for the Secondary Hardening of Banana, Vegetable seedling & growing Strawberry cultivation etc.



# Shade House

**Size: 25 Sq. mtr. to 4000 Sq. mtr.**



The Shade houses / Net houses offer cross ventilation as well as very good growing results for a wide range of vegetable crops like as tomatoes, capsicum, cucumbers and very good for a varieties of flowers and ornamentals.

The shade house offer different shade percentage adjusting to different crops and a diversity of situations

**Shade House also provide protection from:**

1. Hailing
2. Excessive sun exposure
3. Wide range of insect attack

**Shade Houses are used for the following application:**

1. Plantation Nurseries.
2. Forest Nurseries.
3. Hardening of Tissue Cultured Plantlets.
4. Off season vegetable production.
5. Seedling unit

Providing a simple and inexpensive solution for sensible crops to hostile weather conditions.

A Shade House/ Net House can be constructed with different shade percentage and range of colors like Green, Red, White & Black adjusting to different crops and a diversity of conditions and also provide different levels of crop protection.

**Specification:**

**Structure:** GI Round /Square Pipe section

**Covering:** Agro Shade Net ( 75% / 50% / 35% )

**Fixing:** Special Aluminium section

**Humidity:** Micro Fogging System / Micro Misting System

**Irrigation:** Drip / Micro sprinkler system

**Fixing:** Aluminium / GI Box type Profile with GI Zig Zag Spring wire





# Mist Chamber

**Size: 25 Sq. mtr. to 2000 Sq. mtr.**

We offer mist chamber with State of the Art Technology.

Nursery plants propagated by cuttings can grown in mist chambers. The mist chamber are mostly used for vegetative plant organs as well as seeds. The relative humidity is maintained artificially at high level with the help of mister / foggers. Fog formation induces rooting and acclimatization. High relative humidity facilitates better root initiation and cooling effect prevents the cutting from drying out. This method results in faster rooting of the cuttings, create optimum microclimate for better root initiation and development and higher success rate. Temperature and humidity control mist chamber is effected through automated control systems.

Mist Chamber helps in minimizing the plant moisture loss and is also helpful for rooting leafy cuttings.



## **Specification:**

**Structure:** GI Square / Rectangular Pipe

**Covering:** Multiwalled Polycarbonate Sheet/Poly film

**Fixing:** Special Aluminium section/aluminum profile

**Civil :** Curtain Wall / Flooring / Plinth / Walking Path

**Shading:** Aluminet Thermal Net / Agro Shade Net

**Cooling System:** Evaporative Cooling System

**Humidity:** Micro Fogging System / Micro Misting System / Boom Irrigation System

**Controller:** Microprocessor Based system for Temperature, Humidity.

**Benches:** Fixed /Moveable Top





# Rain Out Shelter

**Size: 200 Sq. mtr. to 2000 Sq. mtr.**

Rainout shelters are designed to protect a certain area of land against receiving precipitations/rain so that an experimentally controlled drought stress can be imposed on that area. Many types of rainout shelters were designed and used, with better or lesser results but above mentioned designed are best to our knowledge.

There are two main designs: (1) static and (2) movable. Within the moveable design there are automatic/motorized and manual versions. The automatic version is signaled to move over the protected plot by a rain sensor and an electric drive system. The manual version is moved either by manually pushing it ("manually pushed") over the protected plot.

It will moved into the parking space whenever rain is expected to cease completely. Good weather forecasting service is therefore important. If forecasting is unreliable, better have the shelter over the protected plot more time than expected. Therefore, the shelter construction must allow sufficient light inside as well as some ventilation.

The direction of the protected plot and the parking place of the shelter will be designed so that the parked shelter will not shade the plot in the morning or the evening and that the direction of the wind would not allow rain to blow under the shelter. The shelter parking place cannot be used for growing experimental plots. This structure will race on parallel rail & rail of GI iron channel

## **Specification:**

- Structure with sq. GI Pipe 72mm x 72mm (verticals) 50mm x 50mm (trusses) and 50mm x 25mm (purlins) 25mmx 25mm (Bressing)
- Covering with Maximum transmission depending upon thickness of the poly carbonate sheet OR covered with or UV stabilized Poly film.
- Automatic Motorized Rolling Mechanism on wheels on rails with arrangements for easy movement, quick locking and unlocking, latches and adequate safety features while operating.
- The complete motorized rolling mechanism including control panel, motor drive etc. will have a redundant backup system so that moving facility will keep working with standby arrangement even during failure of primary drive mechanism.
- Rolling Caster wheels with high stress bearing
- Rolling mechanism Power operated geared motor mechanism (with lock by that shade cannot move due to wind force) to move the rainout shelter to and fro.
- Light & Rain Sensor with data logger





# Hydroponic System

The Hydroponics Nutrient Film Technology (N.F.T.) systems have a constant flow of nutrient solution. The nutrient solution is pumped into the growing tray (usually a tube) and flows over the roots of the plants, and then drains back into the reservoir.

There is usually no growing medium used other than air, which saves the expense of replacing the growing medium after every crop. Normally the plant is supported in a small plastic basket with the roots dangling into the nutrient solution.

The N.F.T. system (Nutrient Film Technique) are best suited for, and most commonly used for growing smaller quick growing plants like different types of lettuce, tomato, fodder, spinach. Some commercial growers also grow different types of herbs and baby greens using N.F.T. systems.

There are a lot of different ways to design an N.F.T. system, they all have the same characteristic of a very shallow nutrient solution cascading downward through the tubing. Where the bare roots of the plants come in contact with the water, and can absorb the nutrients from it. The major downside to an N.F.T. system is that the plants are very sensitive to interruptions in the flow of water from power outages (or whatever reason). The plants will begin to wilt very quickly any time the water stops flowing through the system.

The plants in the growing tubes (channel/gully) are typically suspended above the water by placing seedlings started in starter cubes or small one inch baskets of growing media into small holes in the top of the tube. The roots of the seedlings hang down to the bottom of the tube/channel where they get nutrients from the shallow film of nutrient solution flowing by. The excess nutrient solution flowing out of the low end of each of the channels drains into another channel or tube, and is guided back to the reservoir where it is re-circulated through the system again.

Hydroponic N.F.T. system operates fairly simply. Nutrient solution is pumped up from the reservoir, usually to a manifold that connects the larger tubing to a number of smaller ones. Each one of these smaller tubes runs nutrient solution to one side of each one of the growing channels/gully's with the plants in it. A thin layer (film) of the nutrient solution flows through each of the channel's with the plants in it to the other side, passing by each plant and wetting the roots on the bottom of the channel as it does. The nutrient solution flows from one side to the other because the channel is sloped slightly so the water flows down hill.

While the nutrient solution flowing through the channels is very shallow, the entire plant's root mass remains moist from the roots being able to wick up moisture on the outside of the roots, as well as through humidity that's kept within the tube/channel. The roots that are suspended between the base of the plant and the water level in the channel not only have moisture to access, but are also able to get plenty of oxygen from the air surrounding them within the tube/channel as well.

Commercial growers typically use specially made channels/gully's for N.F.T. systems that have flat bottoms with grooves running lengthwise along the channel. These grooves allow water to flow underneath the root mass and help keep it from pooling or damming up.





# Open Top Chamber

The design of the open top chamber resembles like a cone with a frustum at the top to allow natural convectional air flows. With this design it is easy to maintain and control humidity and temperature. Further, in order to promote growth, CO<sub>2</sub> gas is circulated with the help of blowers and distribution louvers to ensure even spread. A precision CO<sub>2</sub> analyzer takes care of monitoring the percentage of carbon dioxide in the air and the device is also linked to automatic computer controlled valves for unattended operation.

The purpose of Open Top Chamber (OTCs) is to study response of plants in high CO<sub>2</sub> and other gas in environment with precise control and regulation of desired CO<sub>2</sub>, Temp and humidity inside the OTCs. These are plastic enclosures, with an open top, constructed with GI pipe frame covered by panels of Polycarbonate Sheet. Air is pulled into the bottom of the chamber, enriched with CO<sub>2</sub>, and then blown through the open top of the chamber. They are relatively inexpensive to construct and maintain, however, they are not appropriate for the study of large vegetation (e.g. forest ecosystems).

Open Top Chambers (OTCs) is an innovative and cost effective approach to investigate effects of elevated CO<sub>2</sub>, Temperature and Humidity on the growth dynamics and yield response of plants.

The CO<sub>2</sub> gas is supplied to the chambers through CO<sub>2</sub> gas cylinders supply and maintained at set levels of PPM using manifold gas regulators, pressure pipelines, solenoid valves, sampler, pump, CO<sub>2</sub> analyzer, PC connected monitor control and data acquisition (SCADA).

The data generated by OTCs are more realistic for impact assessment analysis of rising atmospheric CO<sub>2</sub> and temperature on plants for developing models to predict the responses for future climatic conditions.

General Specification of OTC: Elevated CO<sub>2</sub> & Elevated Temp Facility

1. OTC framing with Tubular GI Pipe
2. Glazing with multi walled polycarbonate sheet
3. CO<sub>2</sub> discharge facility with CO<sub>2</sub> controller mechanism
4. IR Heater with controller for Temp Elevation
5. CO<sub>2</sub> Generator/CO<sub>2</sub> Analyser
6. Temperature & Humidity Sensor
7. Remote Data Transmission and control unit through Wireless I/O devices
8. Computerized Data Acquisition platform
9. Hot Air Blower
10. Sampling System





# Solar Tunnel Drier

Solar Tunnel Drier is a tunnel type chamber, which is used for drying of various crops using Green House effect. It helps to preserve the food and also increase the shelf life of the product. It is covered with multi wall Polycarbonate sheet that traps solar energy and has an insulation effect, thereby maintaining high temperature for a longer period of time. Further solar dryer filters out the UV radiations, which helps products to retain the colour.

The temperature difference between the ambient and inside cabinet is 15°C–25°C on good sunny days. The dryer can protect from rain, insect, dust, and rodent. These dryers are modular, easily transportable/ portable, and constructed according to users requirement.

Minimal thermal losses due to direct penetration of solar radiation into the cabinet through the polycarbonate sheet, with maximum efficiency. The temperatures achieved in the cabinet are in the range of 45–65°C on a clear sunny day and is maintained uniformly. These driers provide guarantee of clean and hygienically processed products.

Drying time depends on several factors such as moisture content of the material to be dried, its porosity as well as size.

In any case, the solar drier makes use of free solar energy that is available for at least six hours during the day. In comparison to drying in the open, drying in the solar tunnel reduces drying time by about 60 percent. In addition, dried products retain their natural color and have a uniform look as well as texture that can help better market prices. Drying in the sun can turn agricultural products black but not when a solar tunnel is used. Tomatoes, onions, figs, sapota, mango, amla, chillies and grapes can easily be dried within the solar tunnel.

**Structural Frame :** GI Square /Rectangular Pipe

**Covering Sheet:** 6mm thick UV stabilized Poly carbonate sheet Double walled, Make –Lexan / Bayer, Life of Sheet-10 Years.

**Flooring:** Thickness of cement concrete flooring 2 inch

**Controller:** Digital Based Humidity & temperature controller.

**Exhaust Facility:** Through heavy duty exhaust fan

**Standard Illumination:** 12 Watt LED Fixture

**Door & windows:** Anodised Aluminium frame of suitable size

**Benches:** With GI/MS material provided with ½” Square GI mess platform



# Walk in chamber/Cold chamber

"Alice Biotech" Make Walk in Chamber / Cold Chamber is design to suit standards for stability in Temperature & Humidity.

**Application:** Walk in Chamber / Cold Chamber are providing the controlled Climatic condition with the help of Dry air, refrigeration & Humidity system built-in. This Chambers are basically in application with Chemical, Biotechnology, Research & also Tissue Culture R&D test to confirm the successful result of the product under test.

**Pre Fabricated Cabinet:** Walk in Chambers are built up with highly Insulated (60mm/80mm/100mm)  $40 \pm 2 \text{KG/M}^3$  with high density foamed pre-engineered prefabricated puff panels can be assembled to meet any test for Climatic conditions or size requirement forming into cabin's or room type structure, which can be erected at the site of construction easily. The cabinet will be made with high quality Pre Coated GI sheet 24/26ga galvanized steel in Interior / Exterior finish OR in some case SS-304 Pre polish sheet will be used for the Interior of the cold chamber flush type panel with glass window for viewing inside objects with silicon gasket & locking arrangement.

**Work:** For storing the Germplasm, seeds bulbs, rhizome, tubers etc. at low temperature and low humidity.

**AIR CIRCULATION:** Air circulation will be provided with the help of blower fitted inside the chamber.

**AIR-CONDITIONING SYSTEM:** Package unit with reputed make compressor

(Hermetically sealed) with low voltage start with all accessories and fan cooled condenser are fitted to give efficient cooled desired temperature, Air-conditioning system will be of high quality and CE certified, Air flow at least 1000 CFM Pressurize and leak test the entire refrigeration system, Condensing- UV and corrosion resistance, inner grooved copper tubes, in-built safety and control device, Weather proof canopy, Evaporator unit - Stainless steel body and excellent corrosion resistance, inner grooved copper tubes, Circulated Room Air will be purified by washable fine filter.

Touch Screen / Feather Touch Control Panel for Humidity & Temperature:

**HUMIDIFICATION:** Upto 80% +4% Accuracy, humidification through air handling unit /Ultra sonic vapour humidifier inside the chamber. This system works with humidity controlled system and cold humid air switched on and off by the controller, it provide superior humidity control, even at below – ambient conditions.

**DE-HUMIDIFICATION:** Suitable for ambient temperature of 15°C-35°C microcomputer humidity-level controls, **Dehumidification capacity:** 20 liters per day at 30°C, 80% R.H. Low power consumption.

**MICROPROCESSOR TEMPERATURE CONTROLLER PID:** Controller, 4 Digit LED display SV & PV, Soft touch panel, Platinum sensor probe Pt-100, Set point lock, Level lock, Sensor failure indication, Display resolution 0.1°C, Accuracy  $\pm 0.1^\circ\text{C}$ .

**MICROPROCESSOR HUMIDITY CONTROLLER:** Real Time microprocessor based On/Off control for Humidifying/ dehum, Hysteresis I Differential 10% - 9%, Delay timer 0-240 sec, Direct / Reverse selectable, Lock functions to prevent miss operating, feather touch operation, Fast response sensor - line resistance  $< 10\Omega$ , display accuracy - indicating value  $\pm 0.2\% \pm 1$  digit.

• Door locking system • High Pressure Indicator • UV Lighting • Double Glass Window



Code	Working Space	Temp Range	Humidity	Microprocessor System
AB-2201	L X D x H 4'x2'x6'	0°C to 15°C	40% to 80%	Temp. & RH Control
AB-2202	L X W x H 6'x6'x8'	0°C to 15°C	40% to 80%	Temp. & RH Control
AB-2203	L X W x H 10'x10'x8'	0°C to 15°C	40% to 80%	Temp. & RH Control
AB-2204	L X W x H 10'x10'x10'	0°C to 15°C	40% to 80%	Temp. & RH Control



# Tissue Culture Lab

Plant Tissue Culture is a best method of plant propagation done in a laboratory. There are many methods of micropropagation. Plant tissue culture involves growing plants in an artificial medium under sterile conditions in a jar, flask or test tube. In theory, this process can go on indefinitely, producing many plants over time. Some plant tissue cultures are started from very small sections of plant tissue. The plants produced this way are exact copies, or clones, of one another. While cloning is important for producing multiples (hundreds, thousands, even millions) of an individual, tissue culture offers other ways to propagate plants that are not "clones." Some plant tissue cultures are started from seeds. When seeds are used for tissue culture, each new plant is genetically different from its parent plant.

We setup complete Tissue Culture Lab as per client requirements.

As per standard practice following rooms/equipments will be set up:

## Complete Lab equipments

- Growth Chamber room
- Office room
- Bottle Wash room
- Media room
- Inoculation room
- Autoclave Room
- Media Store room
- Magnetic Stirrer with hot plate
- Tissue Culture Castor Racks
- Plant Stacking Trolleys
- Temperature Controller Microprocessor
- Digital Humidity Controller
- Digital Photoperiodic Timer
- Ozone Generation System
- Glass Beads Sterilizer
- Ultra Sonic Vapour Humidifier
- Tissue Culture Rack
- Biotech Grade Split Air-conditioning
- Horizontal Laminar Air Flow
- Heating System
- Air Curtain
- Switching Unit
- De Humidifier
- RO System
- Autoclave
- Insect Trapper
- BOD
- Sequential Timer
- Air Purifier System
- Hot air oven
- Air Exchange Unit

Alice Biotech is the single stop source for all these vital equipments such as tissue culture racks in MS or SS with or without LED lamps. Our range also includes Photoperiodic timers and temperature as well as humidity controllers to maintain a specific climatic condition. These are available in microprocessor/Digital/Analogue types with suitable controllers. We also offer heating systems to raise temperatures in winter and air conditioners to maintain lower temperatures in summer.

# Tissue Culture Lab Equipments

**DIGITAL TEMPERATURE CONTROLLER**  
AB - 21007



- Digital Based Controller • LED display for SV & PV, Feather touch operation, Platinum sensor probe Pt - 100 class A, Set point lock
- Level lock to ensure that the parameter can be read but cannot be changed • Sensor failure indication • Selection of unit °C/F
- Display resolution 0.1° • Accuracy  $\pm 0.1^{\circ}\text{C}$
- Temperature range from 0°C to 60°C • Input- 200-240 VAC, 50 Hz. Single phase
- Ambient 5°C-50°C, RH up to 90%.

**AIR EXCHANGE UNIT**  
AB - 33003



- Air exchange unit Fitted with HEPA filter of an efficiency of 99.99% down to 0.3 micron
- Media of glass fibre • Made of pleats back & fro in an anodized aluminum frame • Heavy Duty fan • Connected with cyclic timer
- 0-999Hrs. / Min / Sec. ON, 0-999Hrs. / Min / Sec. OFF, automatic cycling. Accuracy quartz, Input 200 V to 240 VA.C, Phase-Single, 50 Hz, Ambient 4°C to 50°C, RH upto 90%.

**AIR PURIFIER SYSTEM**  
AB - 3306



- Aluminum Static Plasma Filter + Hepa + UV Light+ Photo Catalyst + Activated Carbon + ions + Odor Sensor + LED Screen with Remote + Ozone Operation Optional with complete wiring and installation.
- Covering Area 60 M<sup>2</sup>
- Air Flow Volume 500 M<sup>3</sup>/hr.
- Power Rating 50 W
- Noise Level 40 db

**OZONE GENERATION SYSTEM**  
AB - 21009



- Dry ionic disinfection, area 35m<sup>3</sup> space, 90 to 100%, 16 PPM., Amp - 2, auto stop • Disinfection time - 60 minutes • Heavy Duty Power drive along with ozone monitor • Display Meter analog with the ozone generation unit • Auto failure Detection unit incorporated. Input- 110/220 V AC, 50 Hz, Single phase, Ambient 0°C to 50°C, RH - up to 95%.

**HEATING SYSTEM**  
AB - 40032



- Heat convector with paralytic technique, Auto thermal cut off device • 2 / 2.4 KW heater, variable speed selector switch selective combustive material chosen for minimum utilization for atmospheric oxygen
- Input 200-240 VAC, 50 HZ, single phase
- Ambient 5°C to 50°C, RH up to 90%.

**MICROCLIMATIC HUMIDITY CONTROLLER**  
AB - 22007



- Real Time microprocessor based • On/Off control for Humidifying / Dehumidifying, Hysteresis / Differential 1% - 9% • Delay timer 0-240 sec., Direct / Reverse selectable, Feather touch operation • Fast response sensor – line resistance  $> \Omega 10^{\circ}$ , Display Accuracy – indicating value, 0.2%, 1 digit.

**AIR CURTAIN**  
AB - 53005



- MS powder coated body, Slick in design, with auto ON /Off Switch • Can save up to 80% of Electricity Max. Air velocity at Nozzle: 21 m/s, Noise Level DB: 50 – 70 • No. of Blowers: 3, No. of Motors: 2, No of Shafts: 1 Double, Wattage: 350 W - 605 W Phase Single RPM (Max/ Min)- 2700 / 2100 • Blower Type: ABS, CFM: 825 – 1490, Insect/ dust rejection: 75%

**HORIZONTAL LAMINAR AIR FLOW**  
AB - 21001



- Working Area 6' x 2' x 2' • Static finish S.S. Table Top • Transparent Front Door (6mm) • Built in UV Germicidal Light • Hepa Filter - 99.999% efficiency for particles > 0.3 Pre-Filter - 85% efficiency for particles > 0.5 11m • Particle Count - Better than US Fed Std 209B class 100 • Cabinet - High Quality Stainless Steel SS 304 • Blower - High efficient centrifugal type with life time lubricated bearings • Light - Florescent lighting • Manometer • Noise level- 55 DB

**COLD HUMIDIFIER**  
AB - 50052



- Super fine cold water vapours, Super quality HDPE material blade • SS 304 grade Body • Non corrosive • Heavy duty 0.25 Hp motor, Float valve for regulation of water • 5 Ltr. tank capacity • Portable type with castor arrangement • Suitable for small laboratory area • Direct RO water can be connected
- Input- 110/220 V AC, 50 Hz, Single phase, Ambient to - 0- 50°C, RH- up to 95%.



# Tissue Culture Lab Equipments

**DE HUMIDIFIER**  
**AB - 21061**



- The multi-directional front outlet provides a wide range of air circulation which dries more space desired
- Casters movement, Air purifying filter, Microcomputer humidity-level automatic control
- Dehumidification capacity: 16-30 liters per day at 30°C, 80% R.H
- Power consumption: 420W, 2.6 A, auto pause when bucket is full, Refrigerant: ecofriendly.

**COMPOSITE CONTROL PANEL**  
**AB - 50010**



- For Temperature, Humidity, Cyclic Timer & Photoperiod with Mains ON/ OFF Switch, Light Indicator for mains light, Cooling, Humidity
- Microprocessor based Controller, Temperature ranges from 1°C to 60°C, Accuracy 0.1°C
- Humidity Ranges 0% to 99%, On/Off control for Humidifying/ Dehumidifying, Hysteresis / Differential 1% to 9%, Delay timer 0-240 sec
- Display Accuracy:  $\pm 0.2\%$ ,  $\pm 1$  digit, Cyclic Timer with 0-999 Hrs/Min/sec ON/OFF, automatic cycling
- Photoperiodic Timer Week Program, 20 memory locations adjustable to the minutes, 150 Hrs.

**TISSUE CULTURE RACKS**  
**AB - 24005**



- Tissue Culture Racks with LED Lamps Height 7'2", width 4'2", Length 18", Shelves 6, Lighting facility in 5 shelves
- Distance between shelves to shelves 16". Shelf 4'2" x 18", Platform surface will be of 3mm thick Hylem sheet, Four 18-watt LED Lamps with individual switching
- Frame with MS square pipe 1"x1" (CRC) with Anticorrosive
- Humidity Resistant Powder Coating finish culture rack Wheel/Castor – 4Nos. for each trolley, Provision for connecting the Trolley to Photoperiodic Timer output.

**DATA LOGGER- TEMPERATURE HUMIDITY**  
**AB - 53001**



- Temperature range -40°C to +70°C, Sixteen universal input for each channel, Humidity range : 0 to 99% RH
- User friendly software for data transfer / recording, USB provision for computer connectivity for taking the print out for Graphics/degits, 4-20 mA
- LCD display for recorder store capacity 32000 data reading, Logging cycle: 1 second to 45 days, text formats suitable for importation into spreadsheet program
- User programmable relay logic input etc., Response time less than 10 second to 90% in the non-condensing atmosphere. Provided with latest configuration of laptop/desktop.

**SEQUENTIAL TIMER**  
**AB - 21042**



- Minimum ON/OFF time 15 / 30 minutes with NICAD battery auto recharging facility
- Powered output can drive two 1.5 TR / 2.0 TR Air conditioner Alternately
- Auto – Manual Selector switch, Thermal safety 16 Amp inbuilt, Accuracy  $\pm 8$  sec/day
- Input 200 V to 240 VAC, Phase-Single, 50 Hz, Ambient 5°C to 50°C, RH up to 95%

**PLITZ / CYCLIC TIMER**  
**AB - 21041**



- 0-999 Hrs/Min/sec ON, 0-999 Hrs/Min/sec OFF, automatic cycling. Accuracy quartz
- Power output can be directly drive misting unit load upto 4.4 KVA
- Input 200 V to 240 VAC, Phase-Single, 50 Hz, Ambient 4°C to 50°C, RH upto 90%.

**MICROCLIMATIC TEMPERATURE CONTROLLER**  
**AB - 21009**



- Real time microprocessor-based user programmable PID Controller, 4 digit LED display for SV & PV, Platinum sensor probe Pt – 100
- Set point Lock level lock Sensor failure indication, Display resolution 0.1, Accuracy 0.1°C
- Automatic hysteresis control. Wide selectable temperature ranges from 0 to 100°C
- 2 No. of AC 1.5 TR / 2 TR
- 2 Heater of 2.5 KW load of can be connected Input- 200-240 VAC, 50 Hz. Single phase, Ambient 5-50°C, RH upto 90%

**PROGRAMMABLE PHOTOPERIODIC TIMER**  
**AB - 21005**



- Real time microprocessor based, Accuracy  $\pm 2.5$ sec/day@20°C, Week Program, 20 memory locations adjustable to the minutes/ hrs, 150 Hrs. power backup
- Summer/ Winter time changeover, Program Saving By EEPROM
- Input- 200-240 VAC, 50 Hz. Single phase, Ambient 5-50°C, RH upto 90%.

**ULTRA SONIC HUMIDIFIER**  
**AB - 50051**



- Fine cold vapour with 5-10 Micron size
- Stainless Steel Body
- With Instant Start
- No thermal losses
- Automatic water selection system
- Auto off in case of non availability of water
- Economical electrical consumption with 48 V DC power supply
- Adjustable water tank position
- Input- 200-240 VAC, 50 Hz. Single phase, Ambient 5-50°C, RH upto 90%.

# Green House Accessories



**Celdek Cooling Pad with Aluminum Frame**



**Air Circulation Fan with SS Body**



**Roll up Unit Motorized**



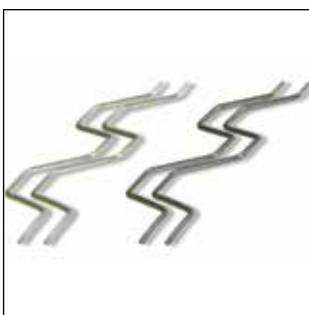
**Slow Axial Fan - 52"/40"/36"/30"**



**Automatic Fertigation System**



**Aluminum Profile**



**Zig Zag Wire**



**Manual Roll up Unit**



**Weather Station**



# Planting Material

## GERBERA



## ROSE



## ORCHIDS



## ANTHURIUM



## BANANA



## LILIUM





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