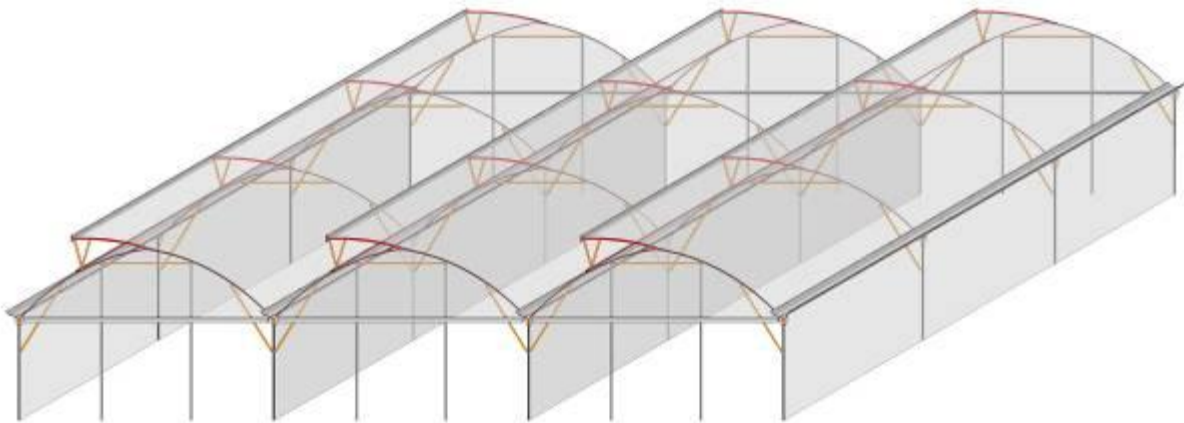


ORGIL LTD
Complete Invermental “turn Key”
project,

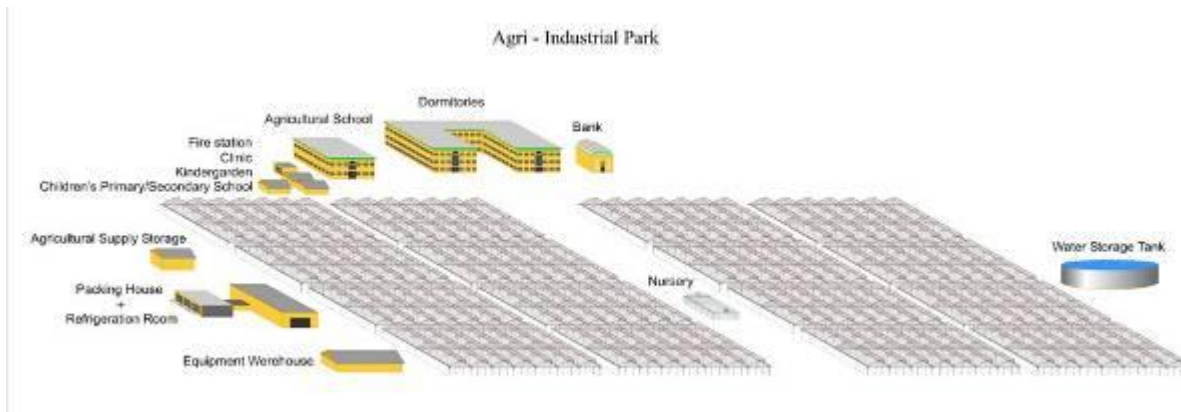


2010

***“A unique horticultural concept
by vertical chain integration”***



Orgil Global Trading, Corp.
2350 Marconi Dr. Ste. 105 San Diego, CA 92154
PH: 1-619-322-7107
www.orgilgreenhouses.com



Orgil's goal is to provide the most up-to-date agriculture knowledge for turn-key agriculture project. Orgil is one of the leaders worldwide in Agriculture Controlled Environment Solutions for many type of crops, from vegetables to flowers, from fruits to fish, Orgil developed several agricultural techniques and designs for better function and efficiently. Conventional farmers will learn that they can produce higher quantities and a higher quality while reducing the overall risk and uncertainties that comes with conventional farming. Farmers will learn that they are far less dependent upon good weather for a good crop and that their need for pesticides will be greatly reduced while pest control and soil disease issues are dealt efficiently. Farmers will learn that they can produce far greater yields while exploiting less land, grow during the "off-seasons," taking advantage of higher prices when most conventional farmers are out of the market. Farmers will learn that when others are affected by adverse weather conditions, the value of their unaffected greenhouse crops rise.

1.1 GREENHOUSE STRUCTURAL

Our Greenhouses was developed to meet the growing needs of farmers around the world to produce higher quality crops thus enhance the return per hectare.

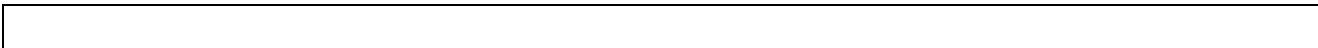
1. **Panas Vent Fix Greenhouse-** The Panas Vent Fix These high-technology greenhouses are based on the last developments in the agricultural industry. This greenhouse is designed to solve ventilation and humidity problems and is especially suited for hot and humid weather conditions. This is carried out by Fix openings located in the center of each of the structure's arches, which run's along the entire roof length.



2. **Panas Super Vent R&P Greenhouse-** These high-technology greenhouses are controlled by a computerized system based on the latest technology. The greenhouse is designed to solve ventilation and humidity problems and is especially suited for hot, cold, snowy and high humid weather conditions. This is carried out by 1 or 2 R&P openings located in the center of each of the structure arches, which run's along the entire length of the roof. nt.

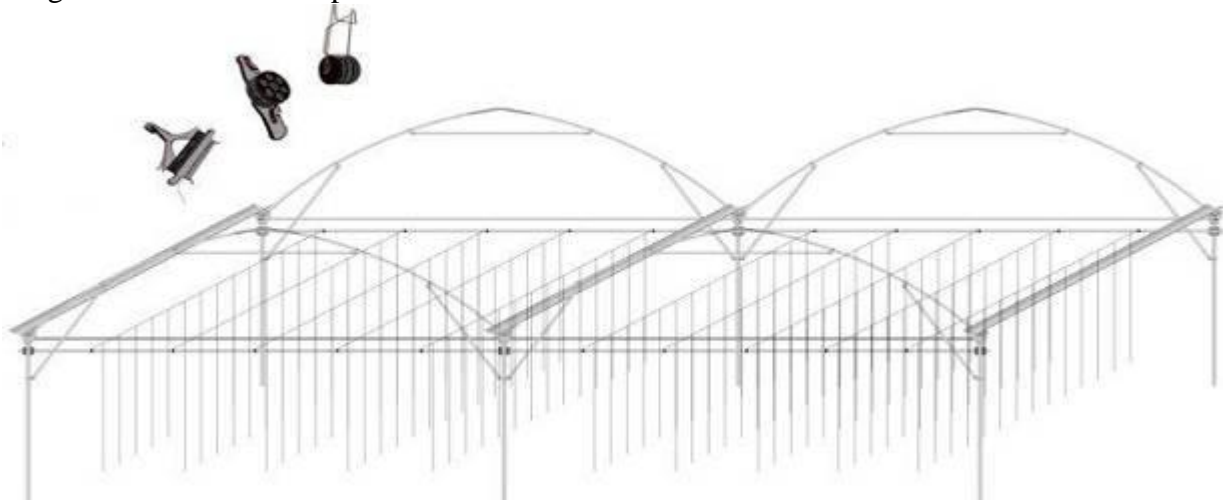


3. The Dvir Greenhouse advantedg is the close roof without any roof vent, in that greenhouse we maxsimaize the effect of total light transmission reaching the plants, esier to isolate the inside environment from the ambient when heating, lowering the heating cost and environmental problem, eisiej maintenances and saves on operational cost and on the initeal investment.



1.2 TRELLESING AND HARVEST EQUIPMENT

Trellising reinforcement is installed along each of the structural front gable in order to support the weight of the trellised crops.



Necessary parts and equipment need to be supplied for an efficient and smooth trellising work for vegetable. This equipment Reduce plant damages by workers while trellising the crop.

Plants can be lowered according its development, workers are always picking at same level without need of lifting equipment or workers.

The equipments included:

- Crop hanging device, composed of hanger with 12m of rope allowing lowering the crop as it



grows.

- Plastic clips to tie the crop stem to the rope



- Trolleys for height working. Workers will work on a high platform, height can be changed.



- Harvest trolleys – to bring harvest fast and easily to the greenhouse's central alley.



1.3 COVERING

1.3.1 Roof covering

- **Plastic film**
 - Anti drip additive on inner face: The anti-dripping effect prevents the formation of droplets on the film thus improving light transmission and reducing the incidence of certain diseases.
 - UVA Additive to protect poly sheets from decaying because of UV radiation. Offered material is warranted to keep its optical properties at least 3 years.
 - Light transmission: possesses the highest light transmission –over 90%LT.



- **Polycarbonate**

One layer Corrugated Polycarbonate sheet 0.8mm Thick

The Polycarbonate Sheets are design for greenhouse use

- Anti drip additive on inner face: to avoid condense water to create large drops.
- UVA Additive to protect polycarbonate sheets from decaying because of UV radiation. Offered material is warranted to keep its optical properties at least 10 years.
- Anti dust additive to avoid dust accumulation on greenhouse cover, in order to get a maximum light transmission.
- Anti scratch additive: sand and dust when blown by the wind can make microscopic scratches on greenhouse cover, which cause light diffraction reducing natural light transmittance into the greenhouse.
- Strength: can withstand the impact of hailstones up to 80mm in diameter.
- Light transmission: possesses the highest light transmission –over 90%LT when dry and over 92% when wet.



1.3.2 Insect net protecting

- The insect net function is prevent insect form entering to the greenhouse and reducing white fly qty inside the greenhouse .this insect net is reducing ventilation .



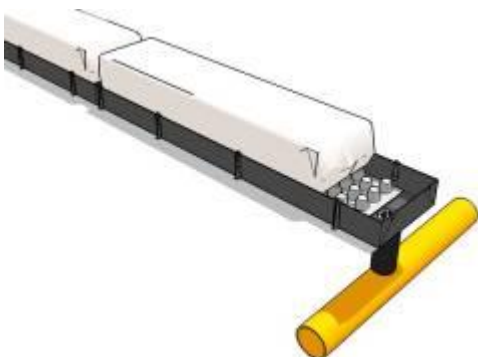
1.4 HYDROPONIC

Growing Crop on artificial substrate for better and easier management and control.

- Rooting: roots are spread and not confined to a limited area. They can seek and share water and fertilizers all over the trough space.
- Climate and humidity conditions: better aeration, temperature moderation and humidity circulation.
- Sterilization: it is easy and safe to sterilize the substrate.
- Replanting: the previous crop is easily removed and new plants can be planted after sterilization.

1.4.1 Growing substrate

The growing substrate system is base on troughs and coconut fibber substrate grow-bags.



- Coconut fibber substrate, of the best international quality, duly disinfected in ready to use grows bags. Compressed fibber is already wrapped in polyethylene bags, ready to be posed in the troughs. One grow-bag per row 6 rows in a bay.

- Substrate grow-bags hold on polypropylene troughs, 700 micron thick, black colour, UV stabilized, high chemical resistance .The troughs are easy to assemble, resistance to steam sterilization and 5 years warranty.
- For better drainage, troughs are supplied with spacer.

Soil less culture





1.4.2 NFT

Nutrient Film Technique or NFT is a [hydroponic](#) technique whereby a very shallow stream of water containing all the dissolved nutrients required for plant growth is recirculated past the bare roots of plants in a watertight gully





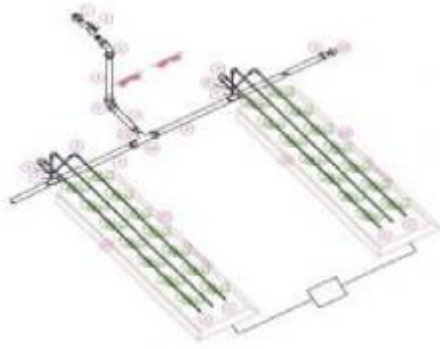
1.5 IRRIGATION AND CONTROLL SYSTEM

1.5.1 Irrigation system

The irrigation system is designed in accordance with the daily water requirements for vegetable cultivation (10mm/day=200m²/for the entire cultivation area, summer time)

- 6 rows per gable, with 2 drippers line each, 16mm diameter, 40 cm between drippers.
Main drippers of the “ on line” type ,

The irrigation system works together with the fertigation system and includes all of the components required for proper operation, including pipes, filters, valves and pumps.



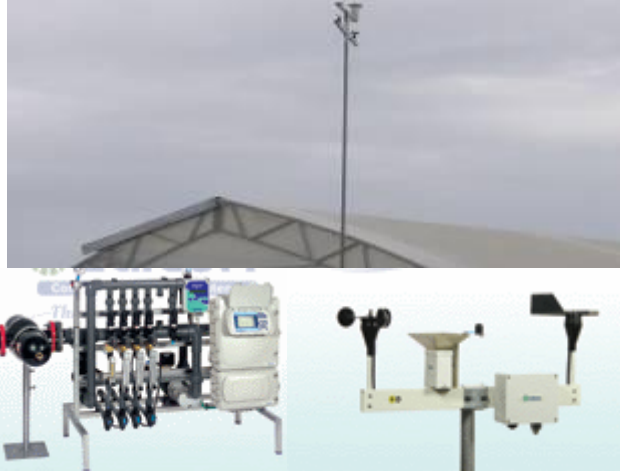
1.5.2 Control system



All the supplementary system operating in the greenhouse is computerized .The control system will control, command and follow up all the functions of the project .All the system is operated supported by:

- Automatically operated by the central control computer unit, according chosen program.
- Sensors:
 - Temperature and humidity sensors –wet-dry ventilated cell. 1 unit per 5000Sqm
 - Sun radiation, from the central meteorological station.
- Central Meteorological Station.
 - Wind speed :Range 0km/h to 280 km/h ,resolution :1km/h, measurements recorded every 2.25 seconds , accuracy +/- 5%
 - Wind direction sensor: Range 0 to 360 degree , resolution of 1 degree, measurements at intervals of one second .Accuracy +/- 7%

-
- Solar radiation sensor : spectral range :400-1100 nanometres , percent a full scale :+/- 2%
 - Rain Meter : resolution :minimum quantity of 0.2mm .Accuracy: +/- 4%
 - Temperature /humidity meter
 - Snow Melting



1.5.3 . Irrigation Water storage tank

- Central water tank-made of metallic structure
- 1000 litter Fertilize tank made of plastic –*Rotoplast*



1.5.4 . Central water storage basin



The material use for the basin is HDPE liner with life time of 4 Years :

- The HDPE is 1.5mm

1.6 HEATING SYSTEM.

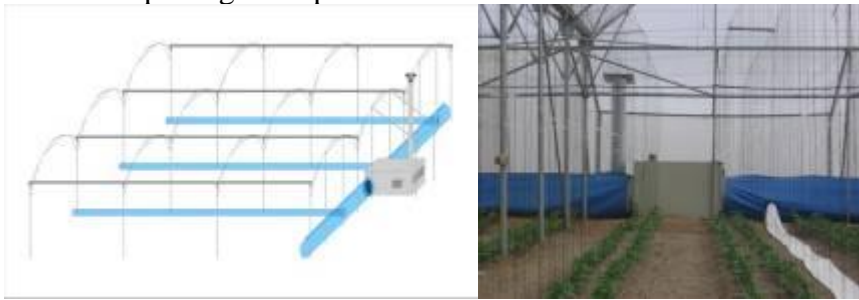
1.6.1 Hot Air heating system

The optimal temperature for vegetable production range is between 14-18 degree.

In a climatic area where temps can be -2 - +3 degree and the average heating hour that will be required is around 1000hour .

We recommended of using hot Air heating system for give best optimal temp for the vegetable production. In that way we can prevent frozen damage when temp drop below zero and bring to market better quality vegetable to the market and in better price.

Right now we not putting this option as exact climatic condition are missing



1.6.2 Hot water heating system

The optimal temperature for vegetable production range is between 14-18 degree .

In a climatic area similar to central Russia temp can reach -20 degree and the average heating hour that will be require is around 4000 hour and more .

We recommended using hot water system with snow melting system to insure snow wont accumulate on the structure .



1.7 THERMAL SCREEN

Thermal screen (as has been tested in field and lab conditions in Israel and Europe) will lead to up to 50-60% saving of heating cost, will keep the plants dry and reduce the risk of fungal diseases.



1.8 SUPPLEMENTAL LIGHTING

Supplementary lighting is designed to provide general illumination to give you enough light to work when it is going dark, as well as contributing a little towards supplementing natural daylight or

artificially increasing day length during the winter or spring. Growing lighting, by contrast, is specifically intended to bring on plants – often being used to “force” them to flower out of season. As a result, it is typically more sophisticated and the quality of light produced is much more closely controlled than you need simply to avoid stumbling in the dark

This system assumes a light intensity according the need of the different crops.

Proposed lighting plan gives enough light for full production even in the middle of the winter.



1.9 SOIL MULCH

- Black and white water permeable Polyethylene cloth ,135 gr/m² on all surface .
 - Avoids weeds to grow.
 - Water permeable
 - White colour reflects the light , for better condition in the greenhouse .

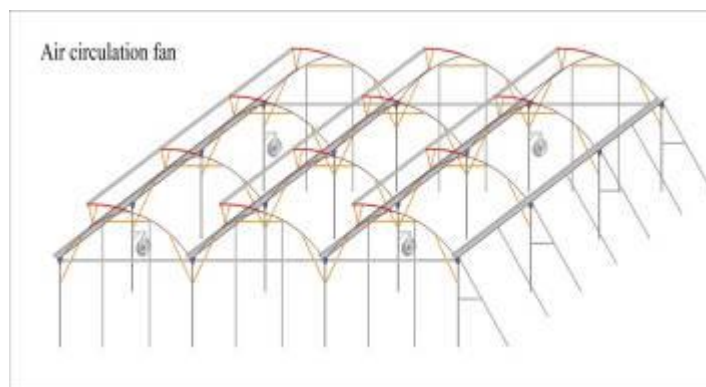
1.10 CIRCULATING FANS

The fans in hot time pushing hot air outside the greenhouse thru frontal lateral vents homogenizing the air by removing the hot Humidity bubble from the greenhouse center.

The fans avoiding humidity to deposit on the plant homogenizing temperature while heating .

The fans moving air the prevent frost.

The fans operated by independent sections by central control .



1.11 CO2 SUPPLY SYSTEM

In order to make sure there is sufficient CO2 supply which required for the process of photosynthesis, even when the greenhouse is closed for climatic reasons, we offer a CO2 supply system.

1.12 AGROCHEMICAL SPRAYING SYSTEM

Pests attacks in a totally confined greenhouse with full climate control are rare .biological pest control will be used as much as possible. in any case there is the need to spray fungicides and insecticides from time to time for that purpose we offers :

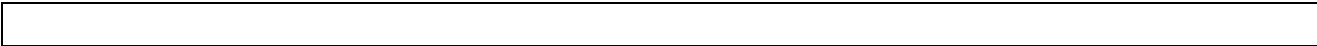
- One electrical powered sprayer per 10000sqm greenhouse ,
- Each sprayer is 1000 liters stainless steel tank
- High volume -50 litter /minute and high pressure -50 bar, piston pump.
- 5 HP electric motor to power the pump.
- Galvanized pipe all along the greenhouse for spraying liquid supply.
- Quick connections with ball valve in every gable for spraying pipe connection.
- 2 spraying pipes 8.5mm diameters, for 100 atm pressure.
- 2 turbo spraying guns.



1.13 ELECTRICAL SYSTEM

The electrical system is spread out the entire the entire structure and supplies the electricity required for all of the motors and supplementary equipment.

- One electrical board placed close to one of the entrance.
- Main emergency switch in the board.
- On –auto-off switch for each operation.
- Emergency safety switch close to each circulation fan and motors
- Including all necessary wires.
- Including galvanized ducts for wires' conduction.



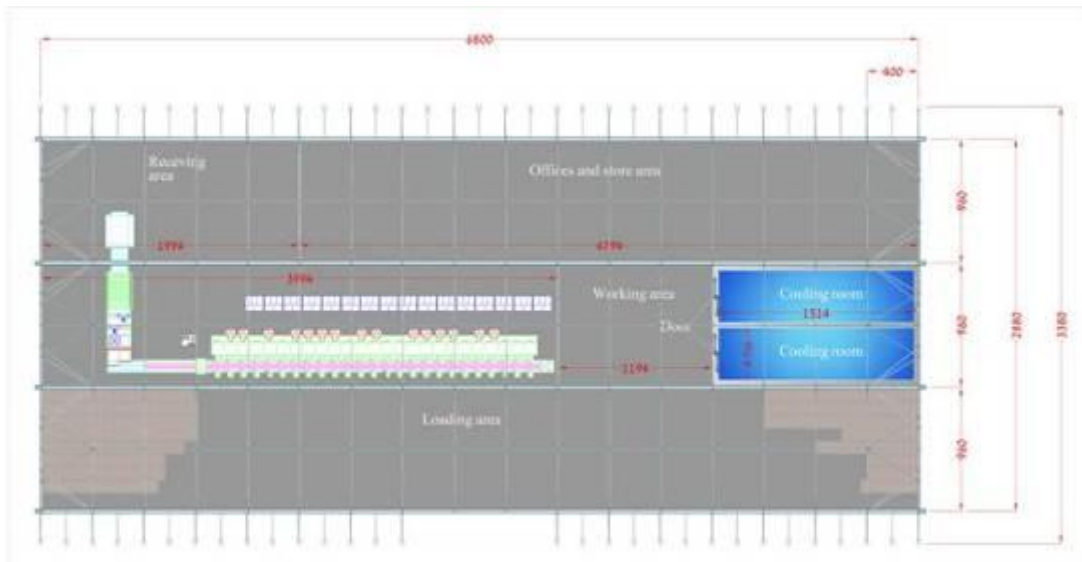
1.14 Post harvesting

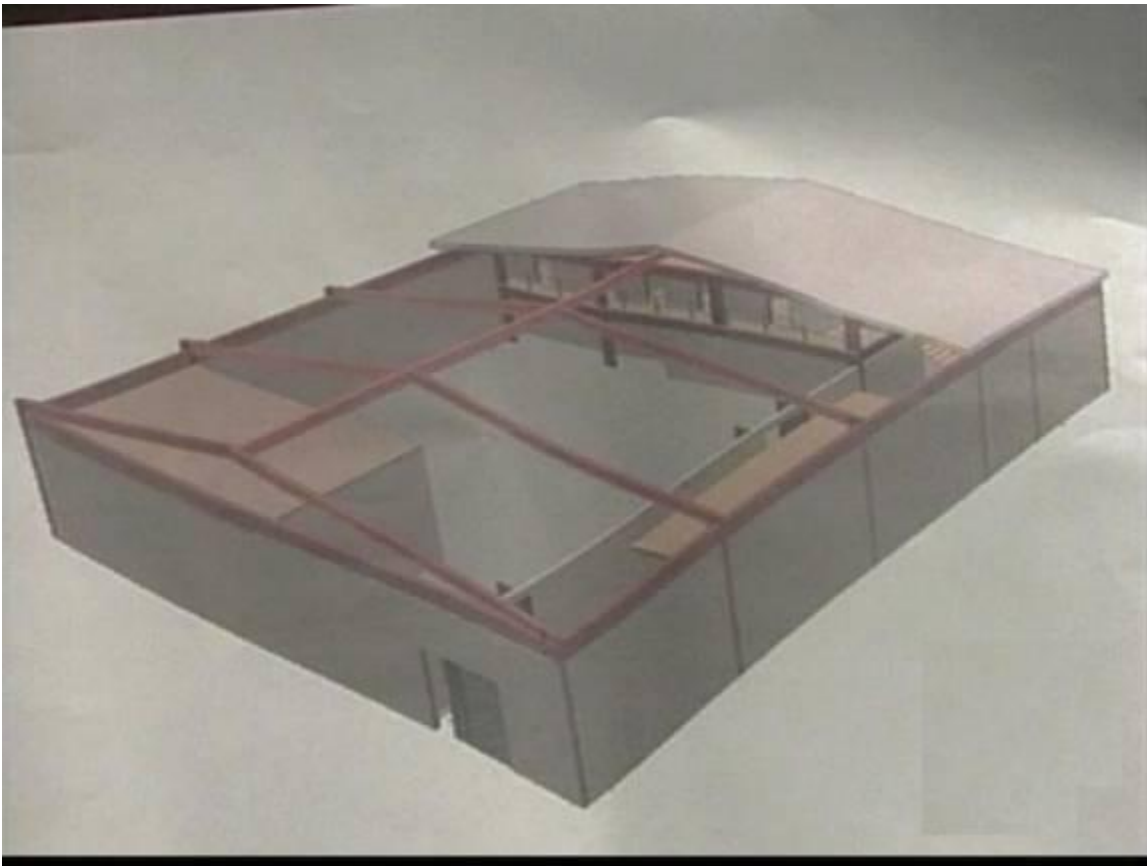
1.14.1 Sorting machine





1.14.2 Packing House





1.15 NURSERY & SEEDING MACHINE

1.15.1 NURSERY



IRRIGATION SYSTEM

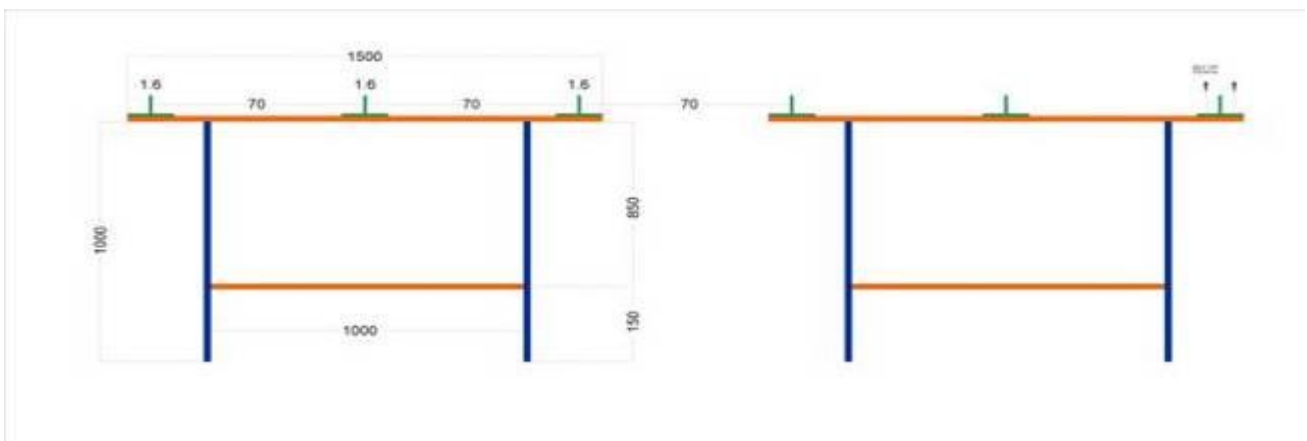
- The overhead irrigation trolley is designed for greenhouses structures with short-medium length.
The trolley is made by single central sliding track with stirrups of catching to the greenhouse, supporting and towing trolley for irrigation bars or with option fertirrigation and treatment ad drip proof nozzles single or three get with standard nozzles in pvc, on request in earthenware for a last long.
The water feed pipe to the bars is suspended and sliding type with small supporting trolleys and the headstock of drive and return trolley by apposite zinc-coated steel rope.
The trolley will be supplied with an electric panel of drive and control with standard functions of speed regulation, pre unloading of water before starting, plan able number of following passing with automatic return.
On request: with programming for sectors irrigation or with working dives and speed regulation plan able from remote control.

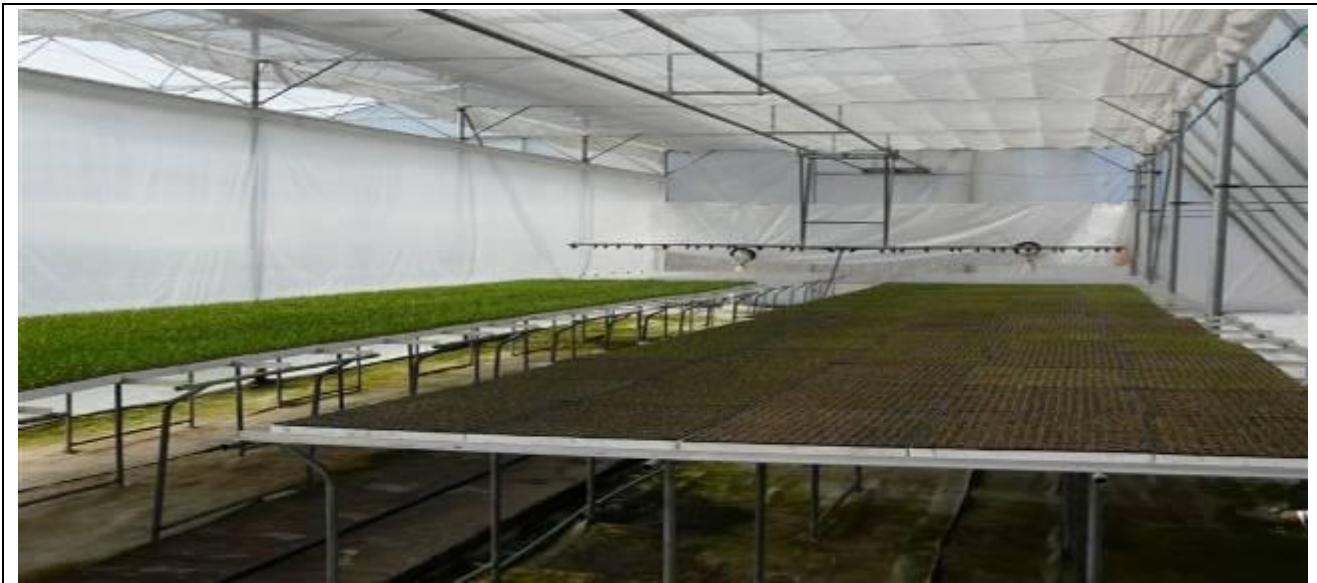


NURSERY TABLE

We are please to present a vegetable nursery table . The table are belt of:

- Galvanize metal frame made of 25mmx25mm galvanize square.
- Aluminum T strip to hold the tray.





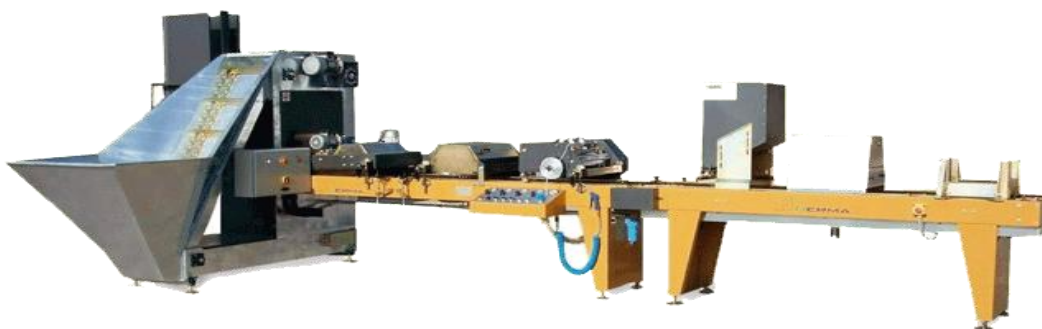
GRAWING TRAY

The Kal kar tray and there insert for the seedling process.
The trays are

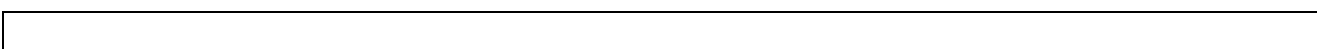


GRAWING PEAT

1.15.2 SEEDING MACHINE



Thanks to its hardness shape, easily regulation and its marker roller interchangeability, the pneumatic roller seeder model GS 400 is suitable for a medium-large size enterprise.
The seeding line consists of the following:



1.16 PROCESSING & CULTIVATION EQUIPMENT

We please to offer all the equipment tools and tractore for all land processing and cultivaion :

1.16.1 TRACTORS



- 92 HP tractore plus palm and digger
- 60 HP tractore for caring transport and land crumbing

1.16.2 CULTIVATION TOOLS



- double junt 6m length trailer
- single junt 6m length trailer
- spraying cannon
- Plow Machine
- Rotary 1.3m width
- Ridger Machine
- ground drill for 30 cm hole for tractore
- paddy wheels Machine
- Vagtable picking box
- Picking tools

1.17 LOCAL LABOR FACILITIES:

- 40 feet sleeping containers up 100 workers.
- 40 feet container using for shower
- 40 feet container using for bathroom
- 40 feet container using as kitchen
- 40 feet container using as tools where house
- 20 feet container using as main construction office



1.18 AGRONOMIC ACCOMPANIMENTS

For training period time we can offer An expert grower who will guide and teach a local agronomic,

- The expert will do site visits as needed and will be quoted by the expert as year package
- The client will be responsible transport and accommodate the Expert all period of the visit
- The Expert will help by mail ,phone conversations as needed .
- The expert will be 1 week in a month for 12 full month

1.19 SEEDS

- Seeds per hectare we consider 25000
