



**GALGOTIAS
UNIVERSITY**

Uttar Pradesh

CREATING KNOWLEDGE

3.1.5

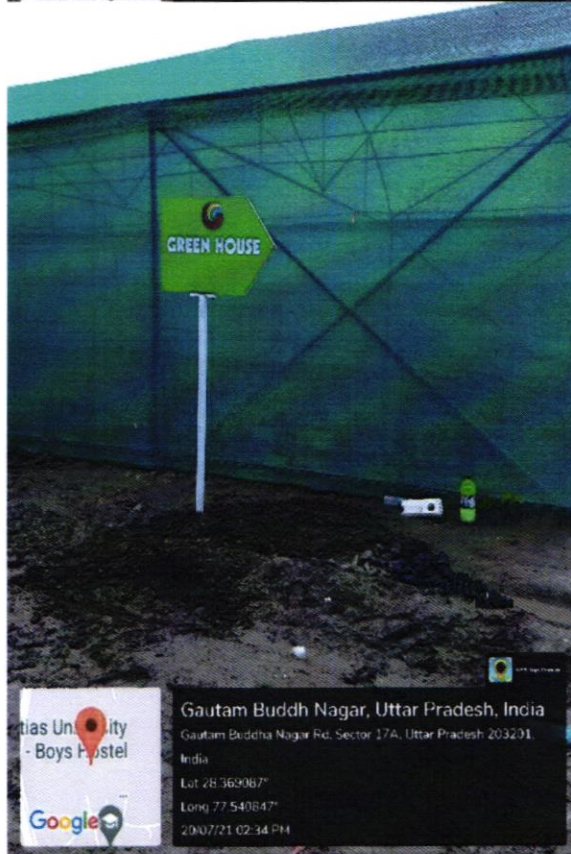
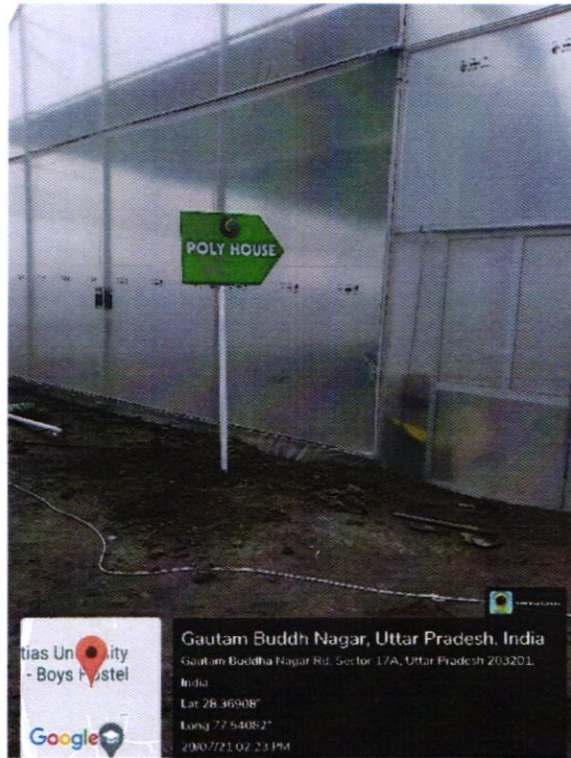
Green House



Galgotias University

Plot No. 2, Yamuna Expressway,
Opposite, Buddha International Circuit,
Sector 17A, Greater Noida,
Uttar Pradesh 203201, India

PROTECTED CULTIVATION FACILITY



Green House



Fig:1 Polyhouse (250 sqm -25 x 10) naturally ventilated

Polyhouse farming is slowly gaining popularity in India. A farmer can make huge profit from polyhouse farming. The protected farming is also the term used for this. There are some courses like “protected cultivation and secondary agriculture “ in the course curriculum of Bsc Agri Hons that are especially introduced by ICAR with a view to make students learn about the cultivation of crops in these structures.

Polyhouse or a greenhouse is a house or a structure made of translucent material like glass or polyethylene where the plants grow and develop under controlled climatic conditions. The size of structure can differ from small -100 sqm to 4000 sqm . Above all, a greenhouse is a glass house whose interiors become warm when exposed to sunbeams as the house stops the greenhouse gas to leave. So when it is cold outside, the temperature inside is survival friendly and warm for the plants.

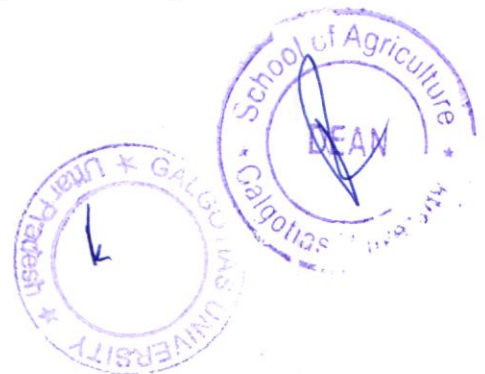
1 : Difference between Green net house and Polyhouse Farming

Polyhouse is a type of greenhouse or we can say that it is a smaller version of greenhouse, where polyethylene is used as the cover. In developing countries like India, polyhouse farming is a popular greenhouse technology due to its low cost of construction and easy maintenance.

The Green Net house structures are covered with a 60-80 % shading net to avoid plants from direct exposure to sunlight and frost.

2: Crops grown in Polyhouse

- Fruits that can be grown are Papaya, Strawberry etc.



- Vegetables that can be grown include Cabbage, Bitter Gourd, Capsicum, Radish, Cauliflower, Chili, Coriander, Onion, Spinach, Tomato etc.
- Flowers like Carnation, Gerbera, Marigold, Orchid, and Rose can also be easily grown.

3: Benefits of Polyhouse Farming

Polyhouse is very beneficial for the farmers specially those who prefer organic farming. here are few of the benefits of a polyhouse:

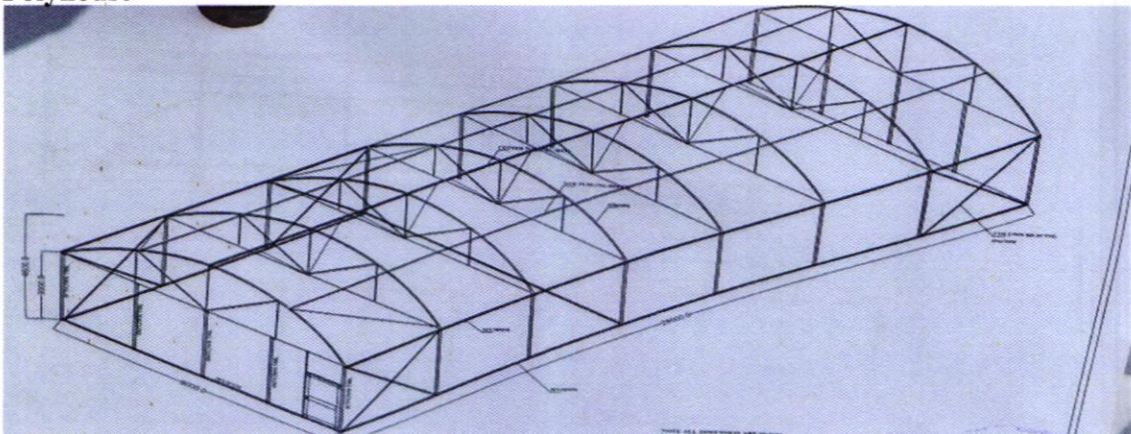
1. Your plants are grown under controlled temperature thus there is less chances of crop loss or damage.
2. You can grow crops throughout the year and will not have to wait for any particular season.
3. There are less pests and insects in a polyhouse.
4. External climate will not have any impact of the growth of crops.
5. Quality of produce is obviously higher in polyhouse.
6. Good drainage and aeration
7. Propagation of Ornamental Crops can also be done effortlessly in a polyhouse.
8. Poly House gives the right environmental facilities to your plants in any season.
9. It also increases yield for about 5 to 10 times.
10. Less cropping period
11. Fertilizer application is easier and is controlled automatically with the help of drip irrigation.

4: Polyhouse cultivation in SOAG :

In order to meet practical requirement and hands on training of protected cultivation farming. the university has created the facility of polyhouse (25 x 10) sqm and green net house (28x 9) sqm in university farm.

5: Dimension

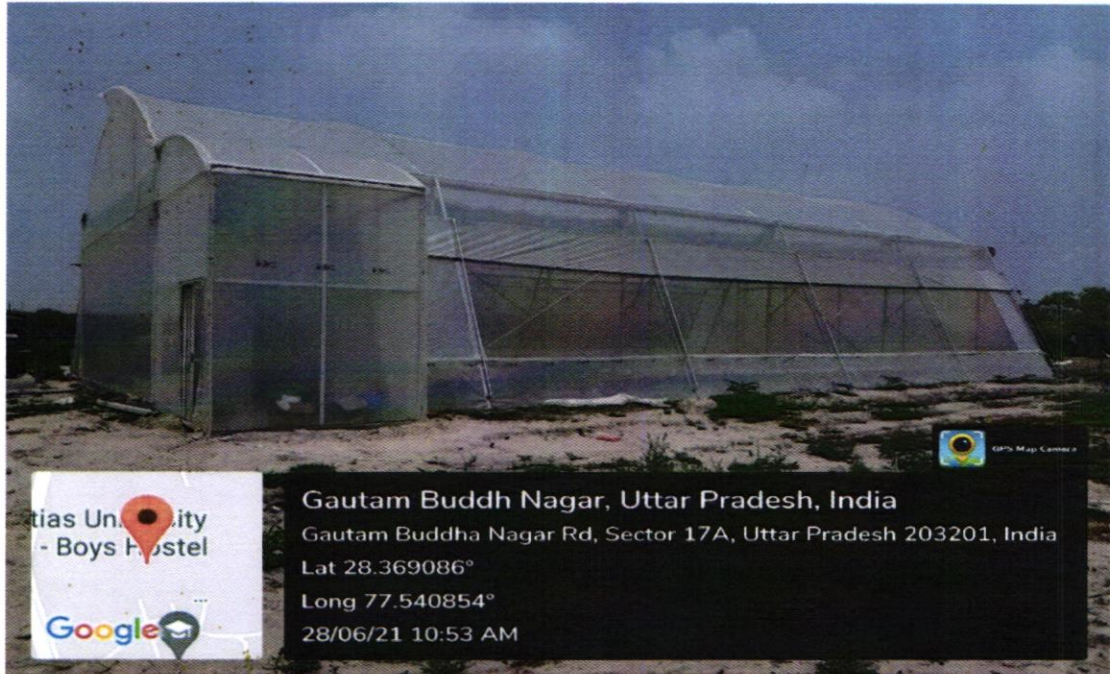
Polyhouse



The polyhouse is 25 mts in length and 10 mts in width with corridors of 2 mts width in both sides. There is an anteroom in the entry making it double door structure . the cost of polyhouse is 4.25 lakhs +taxes @18 % and transport

NATURALLY VENTILATED POLYHOUSE Total Area:

250 m²



Polyhouse

STRUCTURE:

All galvanized steel is used to End wall and side wall framing Aluminum corner trims, aluminum ridge bar and Galvanized gutter trim Brackets & fasteners as required to assemble frame. This includes all the elements required for joining and water tighten components (such as fittings, clamps, screws and nuts plated against corrosion). (1 Complete Set),

DOUBLE DOOR ROOM:

Double Door Room: Size 2.1m x 2.1m x 2.43m (L x W x H) covered with 200 micron polyfilm and fixed aluminum profile. (1 No.)

Door: Size: 1.9m x 0.91m long & wide, normally lockable made of 200 micron polyfilm, top & bottom tracks, jambs, flashings & installation hardware. (2 Nos.)



CLADDING:

Attaching the Plastic on Roof & Side walls of Polyhouse by 200 micron UV stabilized poly film having 85% light transmission, multi layered, anti-drip. This is attached with the structure by the spring & GRP profile & GRP clamps, which click into it. (1 Complete Set).

OVER HEAD FOGGING SYSTEM:

Heavy duty motor with screen filter, nozzles, pipes, polymer water tank 500 ltr. (Make: NETAFIM) (1 Complete Set).

INTERNAL SHADING SYSTEM:

70:30% shading net (monofilament shade net) with manual rolling arrangement connecting pipe etc. can be rolled when not required. (1 Complete Set).

DRIP IRRIGATION SYSTEM:

The system is provided with pressurized drip irrigation system with Filter, Valve, Fertilizer pump, Air valve, Pressure relief valve, Pressure gauge, Head unit assembly with PVC fitting & Water tanks etc.(1 Complete Set).

VENTILATION SYSTEM:

Side Ventilation: PH. long x 2 Nos. Roll-up plastic curtains, open able to 2 m. in

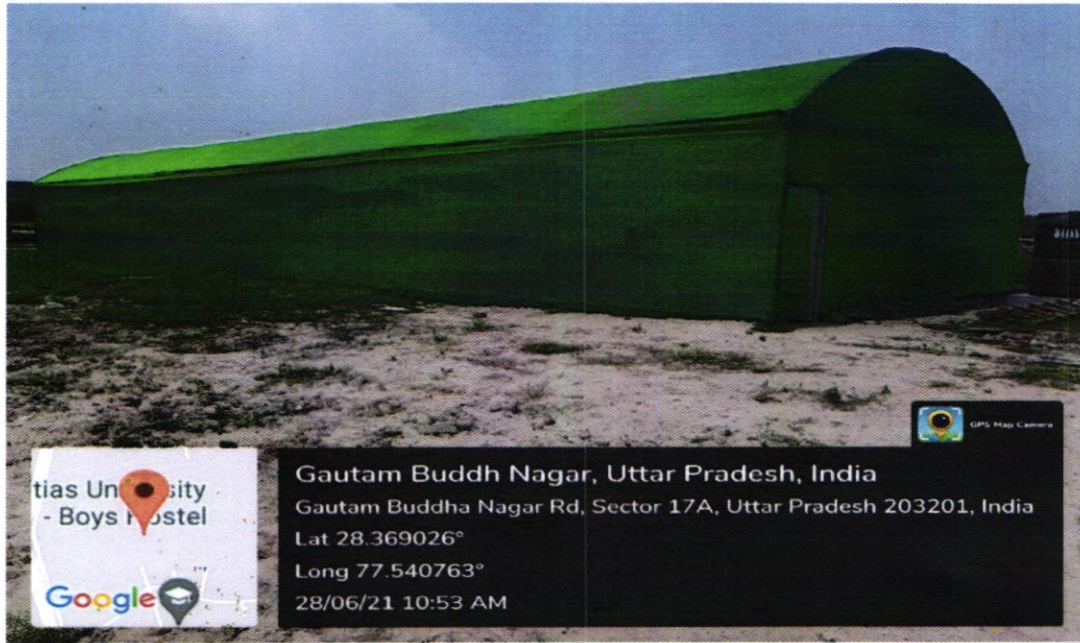
height (open from down to up) on two sides with crank mechanism. 40 mesh nylon insect-screen (UV stabilized) to be fixed inside the curtain on sides.

Top Ventilation: Fixed Ridge Ventilation 1 m. to 1.2 m. covered with 50 mesh nylon insect net. (1 Complete Set).

ELECTRICAL WIRING:

High quality ISI approved fittings with FR grade copper cable and rigid standard of safety with proper M.C.B.





SHADE NET HOUSE Size: 250sq.m.

Shape: Arc

STRUCTURE:

Made by latest G.I. pipe 32mm & 25mm±1mm Squire GI Pipe.

DOOR:

Size 6'-3" × 3' (H×W) one no. with lock and pinion system.

ROOF SCREEN & SIDE COVERS:

70:30% UV Stabilized Monofilament shading net, color- green/black combination.

MICRO FOGGING SYSTEM (MISTING):

With micro filter return gutter control valve assembly pressure gauge.

Humidification through micro misting system, Polymer water storage tank- 500 ltr. Capacity with 1hp mono block pump set.

PILTZ TIMER:

for humidity code no. 002264-00306,

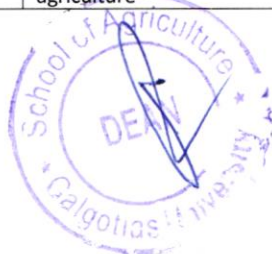


ELECTRICAL WIRING:

High quality ISI approved fittings with FR grade copper cable and rigid standard of safety with proper M.C.B.

List of Plants Grown in Green net house

S. No	Name	Botanical Name	Characters	Numbers	Rate	Amount	Categories
1	Araucaria	<i>Araucaria heterophylla</i>	Popular ornamental tree in gardens, planted singly or in avenues	5	150	750	Ornamental Plant
2	Cochia	<i>kochia trichophylla</i>	It is self-seeding, high-yielding, water-efficient plant. Good source of protein	5	20	100	Ornamental Plant
3	Tulsi	<i>Ocimum tenuiflorum</i>	Provides healing power strengthening effect on the kidney and for curing diabetes	20	20	400	Medicinal Plant
4	Brahmi	<i>Bacopa monnieri</i>	Herb of grace, is a staple plant in traditional Ayurvedic medicine	5	100	500	Medicinal Plant
5	Ashwagandha	<i>Withania somnifera</i>	Used to help improve physical and mental performance	5	100	500	Medicinal Plant
6	Stevia	<i>Stevia rebaudiana</i>	Control the blood sugar, cholesterol level in the body and blood pressure	5	100	500	Medicinal Plant
7	Kala Bansa	<i>Barleria prionitis L.</i>	It is used for the treatment of Asthma, Pain of urinary tract infections and other conditions	5	100	500	Medicinal Plant
8	Giloy	<i>Tinospora cordifolia</i>	Used for diabetes, high cholesterol, allergic rhinitis	5	100	500	Medicinal Plant
9	Ajwain	<i>Trachyspermum ammi</i>	Both the leaves and the seed-like fruit of the plant are consumed by humans	5	100	500	Medicinal Plant
10	Shami	<i>Prosopis cineraria</i>	Prosperity to the home and the house is also get prevented from the negative energy of anyone	5	100	500	Medicinal Plant
11	Peperomia	<i>Peperomia Obtusifolia</i>	Peperomia in traditional medicine to treat a headache, acne, joint pains	4	250	1000	Medicinal Plant
12	yukka	<i>Achnatherum brachychaetum</i>	Important for food and agriculture	2	200	400	Fodder Grass



13	Curry leaves	<i>Murraya koenigii</i>	It helps in the treatment of dysentery, diarrhea, diabetes, morning sickness	5	30	150	Medicinal Plant
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14	Amla	<i>Phyllanthus emblica</i>	Antioxidants, which reduce the risk of chronic health conditions like heart disease, diabetes, and cancer	5	30	150	Medicinal Plant
15	Mehndi	<i>Lawsonia inermis L.</i>	Cooling the body and relieving the Bride of any stress before her big day	5	30	150	Medicinal Plant
16	Areca palm	<i>Chrysalidocarpus lutescens.</i>	absorbing indoor air pollutants like Acetone, Xylene, Toluene	5	250	1250	Medicinal Plant
17	Victoria	<i>Victoria amazonica</i>	Particularly, live plants make an important contribution to fuel	5	150	750	Ornamental Plant
18	Money Plant	<i>Epipremnum aureum</i>	Money plants are ideal for removing airborne pollutants from indoor air	5	150	750	Ornamental Plant
19	Marginata	<i>Dracaena marginata</i>	An attractive plant with green sword-like, red-edged leaves	5	200	1000	Ornamental Plant
20	Janadu	<i>Thaumatococcus xanadu</i>	It is a wonderful philodendron to grow as a houseplant	4	250	1000	Ornamental Plant
21	Laal Dracaena	<i>Dracaena Colouroma</i>	Plant lovers to decorate Lawn, balconies and drawing rooms	5	150	750	Ornamental Plant
22	Epimedium	<i>Epimedium grandiflorum</i>	Used to treat conditions from hay fever, to atherosclerosis, nerve pain fatigue	5	150	750	Medicinal Plant
23	Alonia	<i>Angelonia Alonia Big Indigo</i>	Impressive strides in ornamental plant	5	100	500	Ornamental Plant
24	Astelia	<i>Astelia chathamica</i>	Support other plant life, and provide food for the birds	4	150	600	Ornamental Plant
25	Pandanus	<i>Pandanus amaryllifolius</i>	Botanical fragrance that is used as a flavor enhancer	4	100	400	Ornamental Plant
26	Red Aglaonema	<i>Aglaonema commutatum</i>	Evergreen perennial that generally resembles dieffenbachia in appearance	4	250	1000	Flowering plant
27	Monstera	<i>Monstera adansonii</i>	It can purify the air and is useful in humidifying air conditions	3	250	750	Flowering plant
28	Sita Ashok	<i>Saraca asoca</i>	Helps in conception and maintain body temperature	2	500	1000	Medicinal Plant
29	Paan patti	<i>Piper betle</i>	Aromatic flavor and are widely consumed as a mouth freshener	3	250	750	Medicinal Plant
30	Raisin	<i>Hovenia dulcis</i>	Raisins contain substantial amounts of beneficial minerals	5	100	500	Medicinal Plant



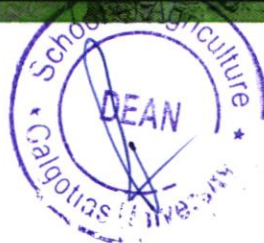
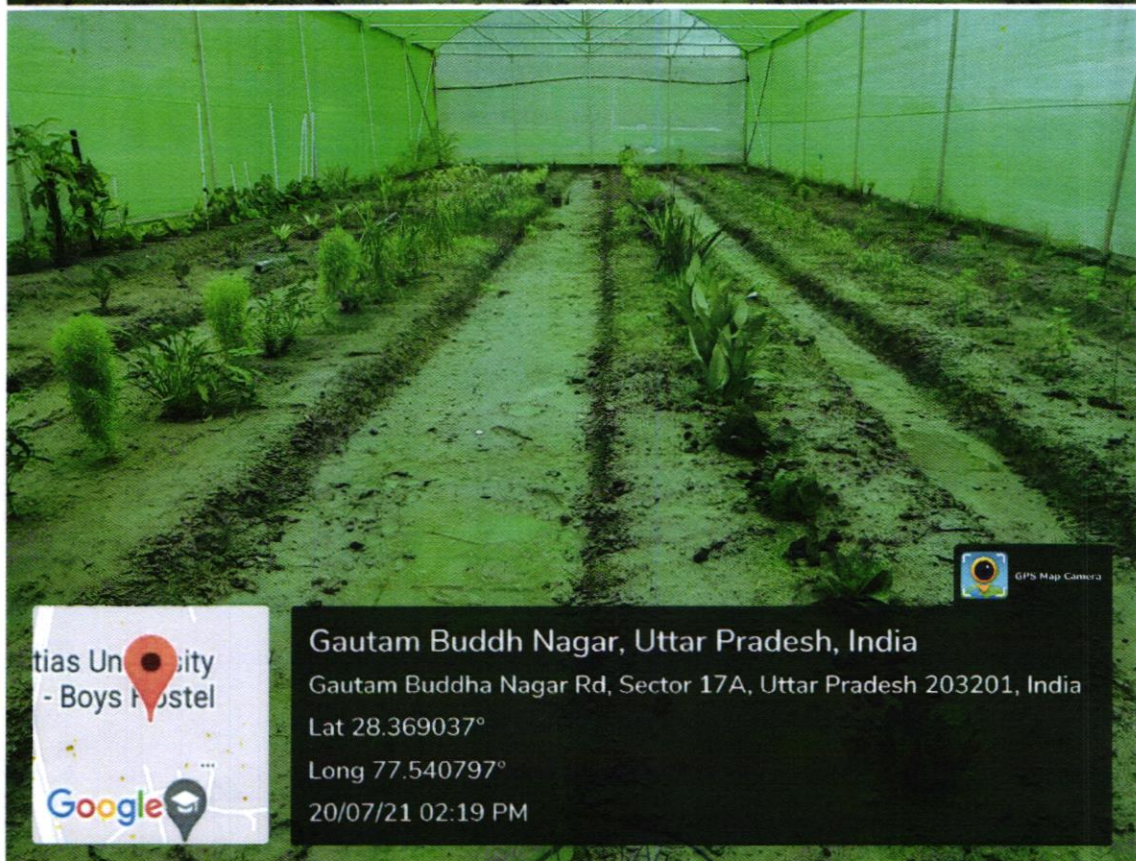
31	Jade	<i>Crassula ovata</i>	Improves Indoor Air Quality. Increases indoor Humidity	2	40	80	Medicinal Plant
32	Angelonia	<i>angustifolia 'Dangel on</i>	The fruity fragrance of grape soda, and the easy care of garden stalwarts	4	250	1000	Flowering plant
33	Rubber plant	<i>Ficus elastica</i>	Non allergic properties	4	180	720	Medicinal Plant
34	Alpinia	<i>Alpinia officinarum</i>	Antioxidant and anticancer agent	2	200	400	Medicinal Plant
35	Green Dracaena	<i>Dracaena deremensis</i>	Indoor plant	5	200	1000	Medicinal Plant
36	Chaudi patti dracaena	<i>Dracanea fragrans</i>	They make excellent houseplants because they are drought tolerant	5	200	1000	Ornamental Plant
37	Philodendron	<i>Philodendron scandens</i>	Important source of food for bats and monkeys in the wild	2	300	600	Flowering plant
38	Croton	<i>Codiaeum variegatum</i>	cleansing the stomach and intestines	4	150	600	Medicinal Plant
39	Gold dust dracaena	<i>Dracaena surculosa</i>	Reduce indoor air pollutants	2	150	300	Medicinal Plant
40	Rhapis	<i>Rhapis excelsa</i>	Raffia palm also provides an important cultural drink	5	200	1000	Medicinal Plant
41	Seaforthia palm	<i>Ptychosperma elegans</i>	grown for ornamental value	2	200	400	Ornamental Plant
42	Song of India	<i>Dracaena reflexa</i>	cure malarial symptoms, poisoning, dysentery, diarrhea, dysmenorrhea, and to be useful as an antipyretic and hemostatic agent	5	220	1100	Medicinal Plant
43	Diffin plant	<i>Dieffenbachia camille</i>	Air purifier, ornamental indoor plant, sap used as antidote against snake bites, rheumatism and gout	5	100	500	Medicinal Plant
44	Dove plant	<i>Aglonema dove</i>	drought tolerant, air purifier, good luck bringer houseplant,	10	100	1000	Ornamental Plant
45	Schefflera	<i>Schefflera arboricola</i>	shrub/tree with poisonous and medicinal properties, increase blood circulation	4	100	400	shrub/tree/medicinal plant
46	Aralia	<i>Polyscias fructicosa</i>	medicinal plant, antitoxin antibacterial and antiinflammatory	4	150	600	Medicinal Plant
47	ZZ Plant	<i>Zamioculcas zamiifolia</i>	drought tolerant, medicinal uses	4	250	1000	Medicinal herb
48	Syngonium	<i>syngonium podophyllum</i>	air purifying climber plants	2	200	400	Ornamental/medicinal Plant
49	Sansevieria	<i>Dracaena spp.</i>	air purifier, anti allergic	1	700	700	Ornamental/medicinal Plant
50	Sansevieria	<i>Dracaena spp.</i>	air purifier, anti allergic	5	250	1250	Ornamental/medicinal Plant

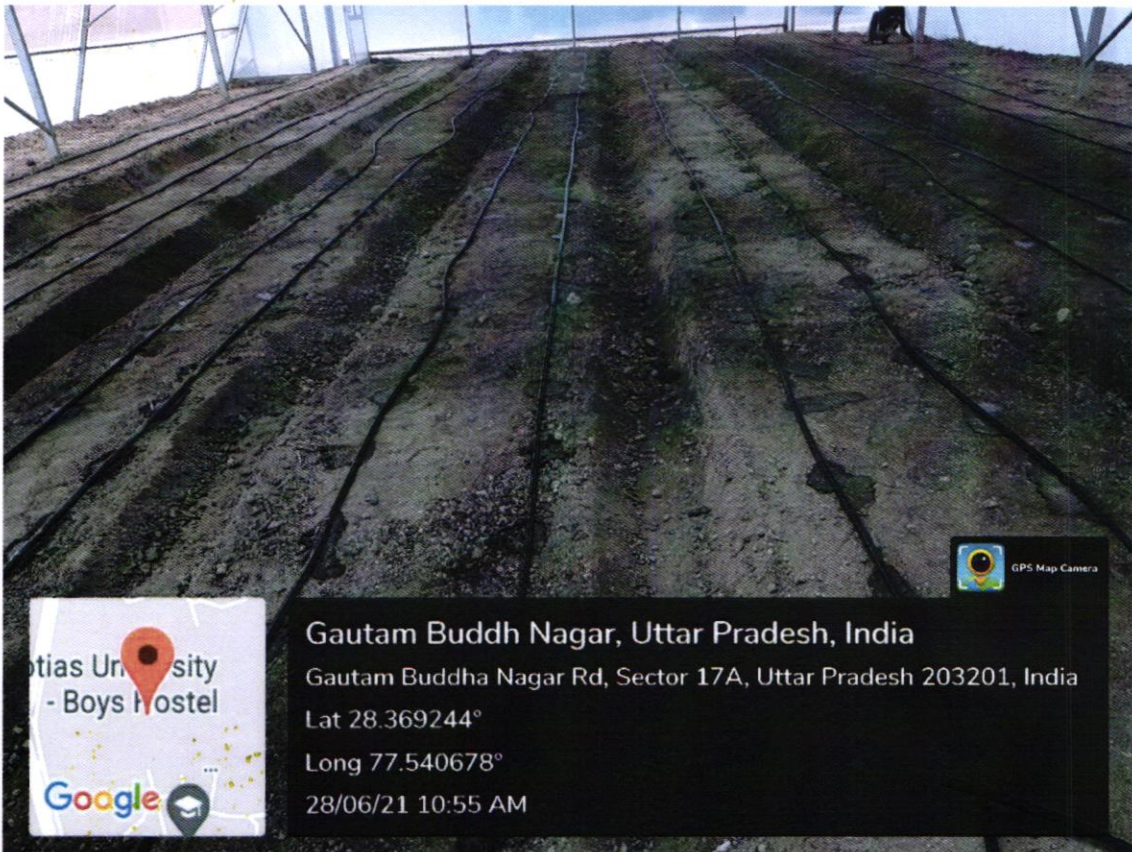


51	Sansevieria	<i>Dracaena</i> spp.	air purifyer, anti allergic	5	150	750	Ornamental/medicinal Plant
52	Sansevieria	<i>Dracaena</i> spp.	air purifyer, anti allergic	2	500	1000	Ornamental/medicinal Plant
53	Sansevieria	<i>Dracaena</i> spp.	air purifyer, anti allergic				



The Seven beds has been prepared inside the green net house and are planted with shade plants

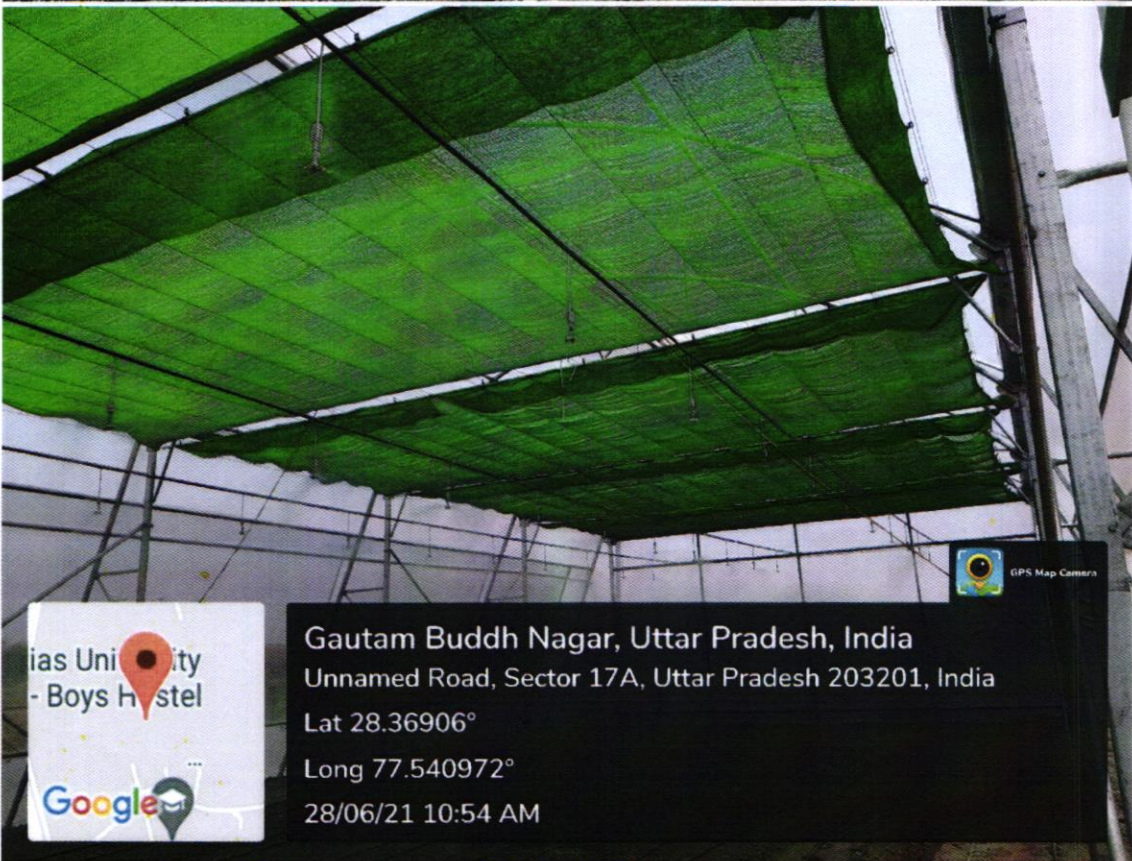




Galgotias University
- Boys Hostel



Gautam Buddh Nagar, Uttar Pradesh, India
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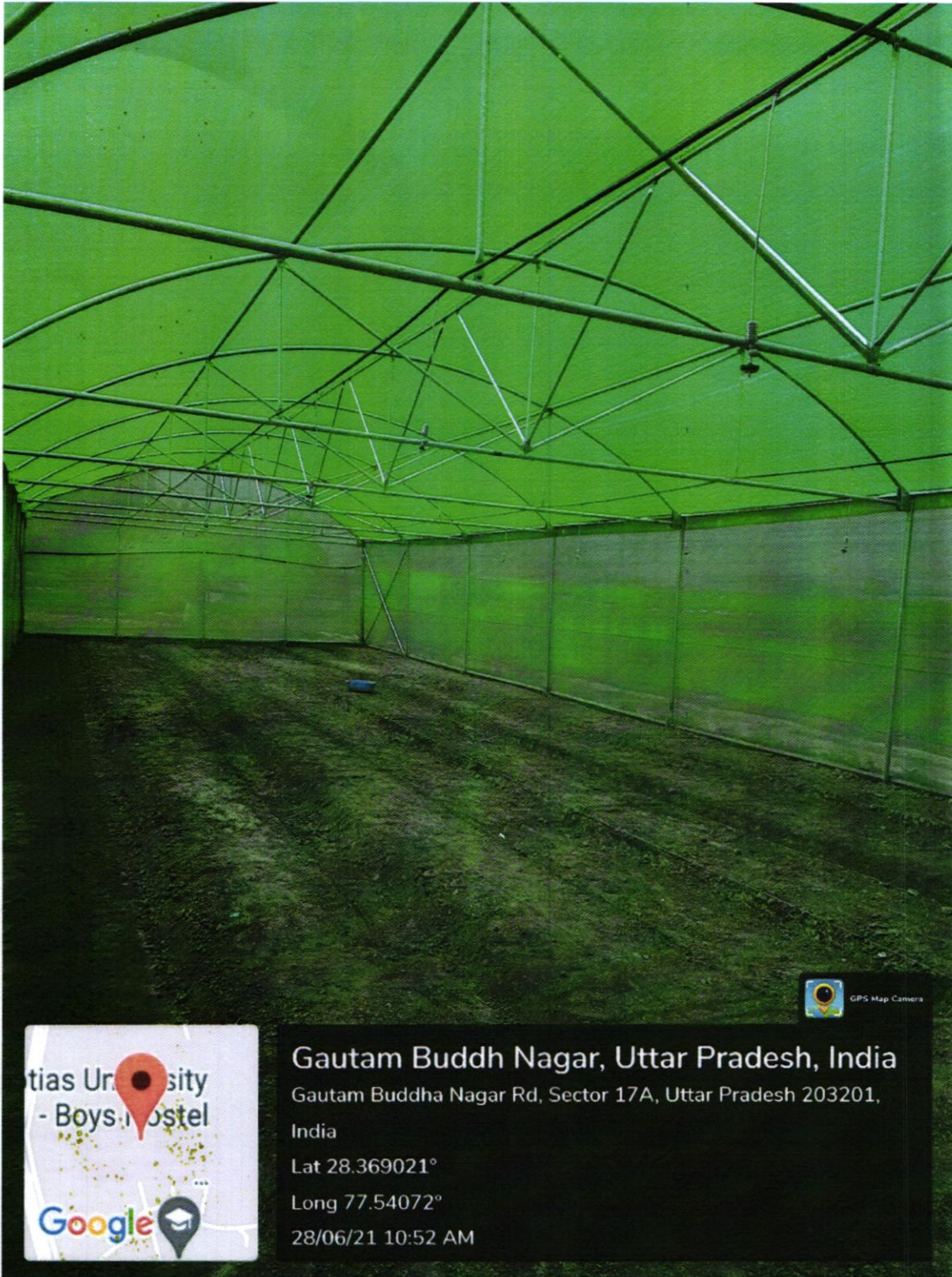


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- Boys Hostel



Gautam Buddh Nagar, Uttar Pradesh, India
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Gautam Buddh Nagar, Uttar Pradesh, India

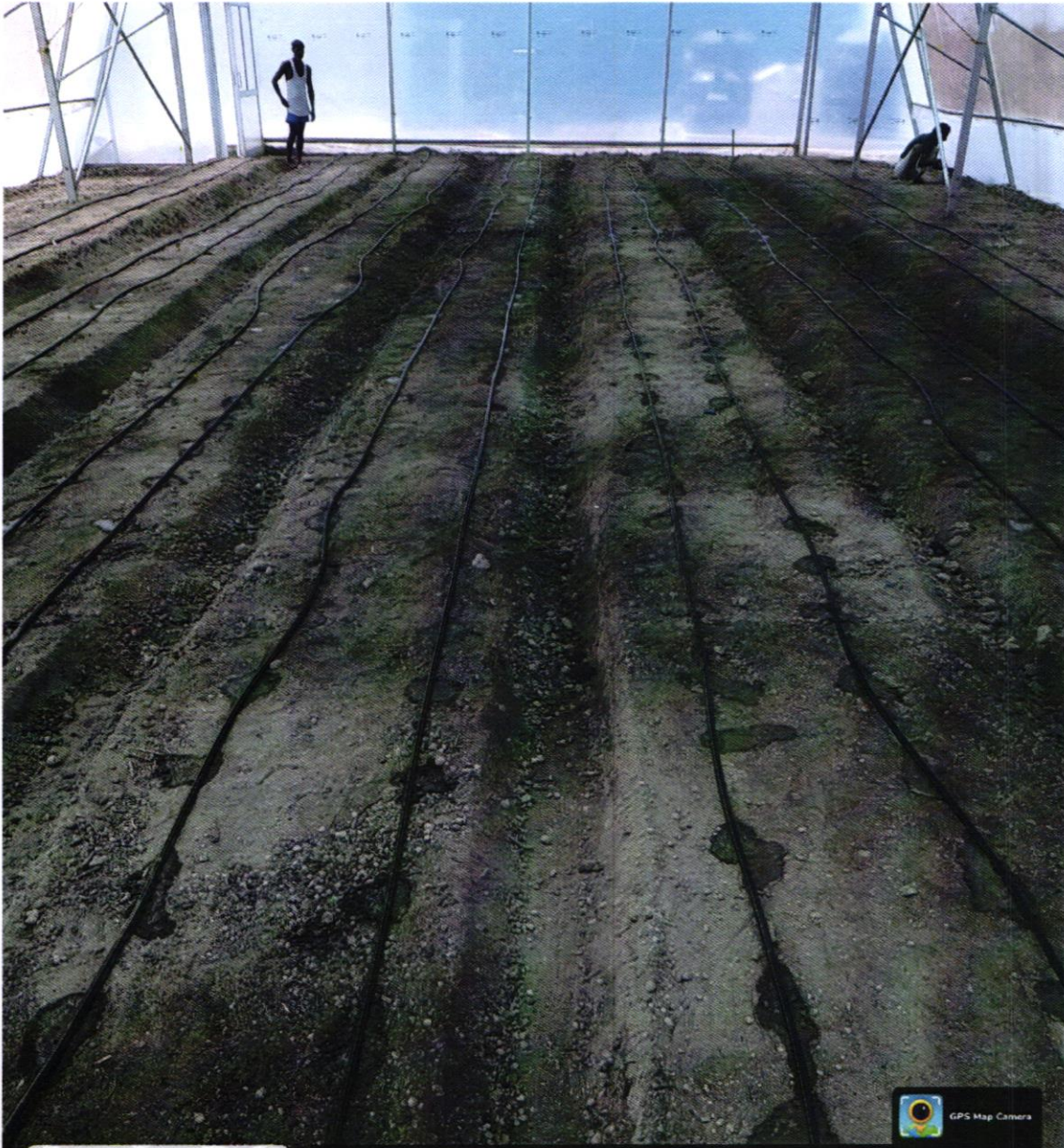
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Gautam Buddh Nagar, Uttar Pradesh, India

Gautam Buddha Nagar Rd, Sector 17A, Uttar Pradesh 203201,
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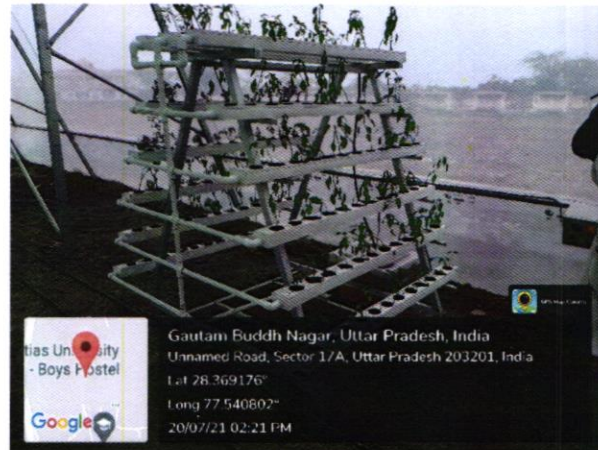
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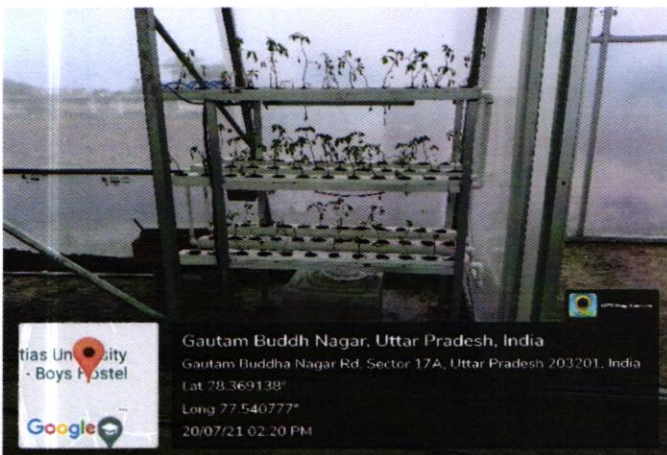


Hydroponics facility inside polyhouse

Three different models of the hydroponics has been installed inside the polyhouse structure



Hydroponics-1- A shaped



Hydroponics-2- vertical



Hydroponics-3-horizontal

