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Scientific Strawberry Cultivation

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Scientific strawberry cultivation is a significant temperate fruit based on the nutritional value, taste, and market demand of strawberries. Scientific strawberry cultivation uses advanced methods and techniques for maximum production, quality improvement, and cost reduction. The following are the main aspects of scientific strawberry cultivation:

1. Climate and Environmental Requirements

Temperature: Optimum temperature can range from 18 to 25°C.
Day Length: Requires 12 hours of daylight in protected cultivation.
Humidity: Maintain 50-80% relative humidity (RH) for optimum production.
Hardiness: Mainly temperate crop but can be grown in sub-tropics or any time of the year in greenhouses.

2. Soil Requirements

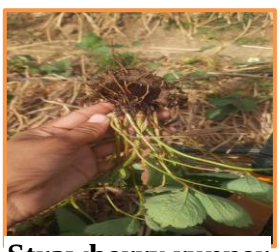
Soil: Well-drained sandy loam soil
PH: The soil pH should be between 5.7 and 6.5.
Preparation: Add organic matter like compost or manure for fertility and to improve water drainage.

3. Varieties

Recommended strawberry varieties for Indian conditions are:
Temperate varieties: Pajaro, Chandler, Tioga, Selva and Belrubi.
Local Adapted Varieties: Katrain Sweet, Pusa Early Dwarf, Local Jeolikot, and Bangalore.

4. Propagation

Runners: The most common method of propagation. Each plant produces 7-10 runners, which can increase to 15 with proper management.
Hormonal Treatment: Use IBA (Indole-3-butyric acid) 1000 ppm to stimulate runner formation.



Strawberry runner

5. Planting and Bed Preparation

Planting Time: September to October is the best period for planting.
Bed Dimensions
Width: 60 cm, Height: 45 cm, Row Spacing: 50 cm
Sow Plant Distance: Two plants per bed of 30 x 30 cm.
Density: About 24,000 plants per acre

6. Mulching

Polythene Mulching: Use black or silver sheets to retain water, prevent weeds and regulate root temperature.

Organic Mulching: Use straw mulch to protect the fruits from coming into direct contact with the soil and reduce rotting

Strawberry planting with organic mulch

7. Irrigation

Drip Irrigation: Best used in delivering both water and nutrients.

Frequency: Application is daily when nutrient solution is applied approx. 140 ml per plant.

8. Fertilizer Management

Concentration of Macronutrients (ppm):

Whereas NPK applied at dose N: 85, P: 60, K: 90, and some of minor nutrient applied that Ca: 100, Mg: 50, S: 60. Fertigate it for uniform distribution.

9. Training Systems

Main training systems used for strawberry plants are:

Spaced Row System

Matted Row System Most commonly used in India

Hill System

Plastic Mulch System

10. Pollination

Greenhouses: Artificially done

Bumble Bees: Indispensable for proper pollination; of 4,000 plants in a 500 m^2 area, adopt one hive.

11. Pest and Disease Management

Pests

Common Pests: Aphids, red spider mites, vine weevils, tarnished plant bugs.

Control: Spray Malathion (0.05%) for effective pest control.

Diseases

Major Diseases: Anthracnose, powdery mildew, crown rot, gray mold, and root rot.

Control: Crop rotation and the use of fungicides such as Carbendazim.

12. Harvesting

Maturity: Harvest when 50-75% of the fruit surface turns red.

Frequency: Pick fruits every 2-3 days during the harvesting period.

Method: Allow a little portion of the stem to remain so as not to damage it .

13. Yield

Average Yield

Field cultivation: 20-25 tons per hectare.

Protected cultivation: 50 tons per hectare.

14. Post-Harvest Management

Handling: Avoid damaging when harvesting and packaging

Storage: 0-2°C to ensure it is fresh.

Packaging: ventilated boxes or cartons, preventing moisture accumulation

15. Economic Benefits

Government subsidies on greenhouse building and drip irrigation cut the initial investment

Year-round production gives the producer an assured income

Conclusion

Scientific strawberry cultivation practices include protected cultivation, fertigation, and pest management, among others. All this ensures a high yield with superior quality and significant economic returns for the farmer.