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Effect of Organic Manure on Cultivation of Strawberry Cv. Winter Dawn under Prayagraj Agro-Climatic Condition

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Abstract

Strawberry is one of the temperate zone fruit crop but now days work have been done on low chilling variety that can be well establish in the sub tropical or tropical zone. Winter dawn is a variety which can withstand in sub tropical climate of Prayagraj. The cultivation of strawberry can provide a high return to farmers as its cost benefit ratio ranges from 1:2 to 1:4 that is one can get a high return. The use organic manure like FYM, Vermicompost, Poultry manure, biochar etc. is becoming an essential to use in farming as it leads to the Sustainable development that is development without deteriorating the fertility of the soil.

Introduction

A member of the Rosaceae family and an octaploid (2n=8x=56), the strawberry is called *Fragariaananassa*Duch. This fruit is well-known for its distinctive aroma, vivid red colour, juicy texture, and harmonious balance of sweetness and sourness. As a non-climacteric, it only reaches maturity on plants. Large amounts of them are consumed, either as fresh fruits or as ingredients in various dishes like jams, juices, pies, and ice cream, among others. In addition to being a good source of iron and vitamin C, strawberries also contain significant amounts of non-essential bioactive polyphenols, flavanols, and anthocyanins. Due to its highly perishable nature, this can only be kept at 0°C and 90–95 RH for 7–10 days. Furthermore, strawberries' high water content of about 90% makes them susceptible to spoiling damage.

Propagation of strawberry:-

Commercial strawberry cultivars are primarily multiplied asexually through vegetative cuttings, which are created by burying the runners, or vegetative stolons.

Climate:-

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The best climate for strawberry growth is a temperate one. A subtropical environment is suitable for growing several cultivars. It is a short-day plant that is primarily grown in the hills of India. It needs 8 hours of sunshine each day, and a moderate temperature is necessary for the development of flower buds. The subtropical climate types do not require cooling and continue to grow somewhat in the winter.

Soil and Land Preparation-

An organically rich, well-drained medium loam soil is necessary for strawberry growth. On this instance, plants are cultivated in acidic red soil that ranges in pH from 5.7 to 6.5. Hoeing should be done lightly, and the soil should have plenty of moisture. Deep ploughing and harrowing should be used to make the soil friable, eliminate weeds, and prepare the ground for strawberry planting. Raised beds are used for planting runners. Planting distance varies depending on the type of terrain and its variety. A 45 x 30 cm space is used.

Time of Planting

The best months to plant runners are October and November. Early planting causes plants to be weak, which lowers fruit yield and quality.

Irrigation

Since strawberries have shallow roots, they require more frequent irrigations with smaller amounts of water each time. To lessen water stress in the leaf, the soil needs to be irrigated often. After planting, irrigate the plants immediately, and then every day until the runners are established. This prevents the plants from drying out. Between the rows, irrigation is applied in furrows.

Plant Protection Measures

Cutworms and red spider mites are significant strawberry pests. Monocrotophos + 0.25 percent Wettable sulphur can be used to manage the mites. Before planting, the soil must be dusted with 50 kg/ha of 5 percent chlordane or heptachlor dust, and the dust must be completely mixed into the soil to control cutworms. We can breed disease-resistant strawberry varietals to combat strawberry diseases.

Winter Dawn Variety

A brand-new and distinctive kind of strawberry that was developed from seed by a hand-pollinated cross of FL 95-316 and FL 93-103. The new strawberry variety known as

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"Winter Dawn" stands out for its high production of medium- to large-sized fruit from November through February and its modest resistance to Botrytis and anthracnose. 'Winter Dawn' is a cultivar with a brief day. After being moved to the fruiting field, it produces comparatively few runners compared to how many it produces in the summer nursery.

Organic Manure

To keep soil moist and preserve its physiochemical properties, there must be a sufficient amount of organic matter in the soil. The main component of the majority of production systems is various forms of organic growing media. Field soils are typically unsuitable for growing plants, hence organic fertilisers are used worldwide to improve soil fertility by adjusting soil structure, pH, biophysical conditions, and availability of critical nutrients. This prevents soil degradation and food contamination. Here, organic media such as biochar, FYM, poultry manure, and vermicompost are employed.

Mode of Action of Organic Manure

These media are preferred because they encourage soil microbial activity, enhance oxygen availability, maintain normal soil temperature, boost soil porosity and water infiltration, and also promote plant growth by reducing plant disease, yield, and quality.

Mulching in Strawberry

Mulching strawberry plants lowers the effects of freezing, controls weed growth, and, most critically, lessens the likelihood of fruit softening. It also promotes early cropping and boosts overall yield. Clean straw, black, and double-colored polythene are some of the materials that are frequently utilised for mulching.

Biology

The strawberry plant grows from seed or runner plants and continues to grow until it reaches senescence. A strawberry plant lives from germination until its leaves have withered, which denotes the transition from life to death. Genetically, the seedlings differ from the parent plants. As an alternative, mature strawberry plants self-produce by means of clones or daughter plants that are extended from them by means of stolons to root some distance from the mother plant and become established as independent, albeit genetically similar, plants. Tri-lobed leaflets that are capable of photosynthesizing will cover the plants' woody stems. From the strawberry plant's central hub, the crown, both roots and leaves spread out. Within

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the crowns of plants, flower buds start to grow. The runners are usually between 8-18 inches long, depending on the variety.

Flowering and Yield

Strawberry plants produce many times more strawberries than they weigh throughout the course of their lifetime. When the plant's output is taken into account, they are among the most productive species. Three to four weeks after the first flower opens, strawberries start to ripen, and they continue to ripen for around three weeks. Fruits are naturally crimson and tasty and are covered in tiny seeds that can help the plant reproduce. The fruit ripens in the lowlands from early January to early February, and in the high elevations from May to June. The yield varies depending on the location and the season. The suggested cultivars typically yield between 200 and 500 g per plant. An excellent output is 20–25 tonnes per hectare.

Harvesting

When berries are bright red all over and at their tastiest during the warmest portion of the day, they should be plucked by pinching off the stem at the crown. Fresh-market strawberries must be gathered in a way that prevents or minimises bruising, skin disturbances, and fruit juice bleeding.

Conclusion

Organic manures and fertilizers reduce the farmers' dependency on chemical fertilizers. Organic manures are easily available at cheap cost. It leads to sustainable development. Organic manuresmaintain the soil health and even healthy fruits are produced.

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