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EFFECT OF GROWING CONDITIONS ON GROWTH AND YIELD OF STRAWBERRY (*Fragaria ananassa* Duch.)

S.N. AMBAD, S.S. SAWANT, AND M.B. NAYAKWADI

See end of article for authors' affiliations

Correspondence to :
S.N. AMBAD
Department of Horticulture
College of Agriculture,
Shivaji Nagar,
PUNE (M.S.) INDIA

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ABSTRACT

The present investigation was carried out at Plasticulture Development Centre, MPKV Rahuri (India) during 2000-01. The experiment was laid out in Factorial Randomized Block Design (FRBD) with four growing conditions and three cultivars of Strawberry. The results indicated that growing condition of low tunnel with mulch recorded maximum plant spread (31.01 cm) and earliest 50% flowering (57 days). Similarly fruit characters such as number of fruits per plant (19.28), average size of fruit (3.43 cm) and weight of fruit (10.19 g) were significantly better under low tunnel with mulch condition. The yield per square meter (1.18 kg) and per hectare (11.84 t) was also significantly higher in the same treatment. The cultivar Chandler was proved to be the best in production (11.78 t/ha). Among all treatments production under low tunnel with polyethylene mulch and Cv.Chandler proved superior in biometric and yield characters.

Key words : Strawberry, Growing condition, Cultivars.

The modern cultivated strawberry (*Fragaria ananassa* Duch.) belongs to the family Rosaceae and is grown in most of arable regions of the world. The fruits are enjoyed by millions of people in all kinds of climate including temperate, mediterranean, subtropical and taiga zones. Fruit is a good source of carbohydrates, vitamins and minerals etc, Blood red colour, sweet sour and pleasing flavour makes the fruit more attractive and appealing. Besides fresh consumption sizable quantity of fruits are processed in various forms worldwide. Strawberry cultivation in the developed countries viz. U.S.A. and Japan is more advanced and is a remunerative enterprise. United States of America rank first in production in the world, while Japan is competing with Italy and Poland for second position (Oda, 1989). The success of Strawberry cultivation in these countries is a result of the planting systems designed to optimize the conditions for maximum fruiting (Voth, 1972).

In India, Strawberry cultivation is restricted to the hilly regions of Shimla, Mussorie, Darjeeling, Ooty, Mahableshwar, Panchgani etc., now it is spread to plains. Strawberry production is not only influenced by environmental factors but also by microclimate modifying techniques viz. plastic mulch and low tunnel (Gast and Pollard, 1989). However, in India, use of low tunnel for Strawberry production is new concept. Nevkar *et al.* (1998) developed a walking tunnel to prevent the Strawberry plants (runners) from decaying caused by heavy rains at Mahableshwar (M.S.). However, systematic work on directly utilizing the low tunnel for augmenting the crop production is meager. Hence, present investigation was undertaken with an objective to study the effect of growing conditions on production of Strawberry.

MATERIALS AND METHODS

Three cultivars of strawberry *viz*. Selva, Chandler and Seascape were planted under four growing conditions viz. Low tunnel with mulch (LMT), Low tunnel without mulch (LTWM), Open field with mulch (OFM) and Open field without mulch (OFWM). The trial was laid in FRBD and replicated thrice.

Black mulch film of 100 µ thickness was used. Round holes (7 cm) were made to the mulch film at 45 cm x 30 cm to facilitate planting of strawberry suckers. Height of the tunnel arch was 0.75 m at the centre and UV stabilized transparent low density polythene film of 200 µ was used to cover the tunnel. All recommended packages were followed. Observations were recorded on randomly selected plants (5) from each plot for plant spread, number of fruits per plant, size and weight of fruit. While, days to 50 % flowering and yield was also recorded.

RESULTS AND DISCUSSION

Effect of growing conditions :

The results presented in Table 1 revealed that growing conditions under study significantly influenced growth and production of all the three cultivars of