THE ASIAN JOURNAL OF HORTICULTURE Volume 8 | Issue 1 | June, 2013 | 93-96



Research Paper

Article history : Received : 27.09.2012 Revised : 10.03.2013 Accepted : 26.03.2013

Members of the Research Forum

Associated Authors: Department of Horticulture, Regional Horticultural Research Station (Dr. Y.S. Parmar University of Horticulture and Forestry), Bajaura, KULLU (H.P.) INDIA

Author for correspondence : JAYANT KUMAR Department of Horticulture, Regional Horticultural Research Station (Dr. Y.S. Parmar University of Horticulture and Forestry), Bajaura, KULLU (H.P.) INDIA Email : jayantkumar_in@yahoo.com

Studies on the effect of growth regulators on production of apple nursery plants

JAYANT KUMAR, V.P. SHARMA¹ AND DISHA THAKUR¹

ABSTRACT : The field experiments were carried out to study the effect of growth regulators on production of apple nursery plants at Regional Horticultural Research Station, Bajaura. In first experiment bench grafted plants of apple cvs Red Chief and Oregon Spur were dipped in indole-3-butyric acid (1000 ppm IBA, 500 ppm IBA, 250 ppm IBA, 125ppm IBA and control) before planting in the month of March to induce more root and shoot growth. The bench grafted plants of Red chief and Oregon Spur were planted at a distance of 22.5 x 22.5 cm and were given uniform cultural practices. The data were recorded in December after the plants had entered in to dormancy. Treatment of plants with 500ppm IBA resulted in the maximum plant height (137.6 cm and 154.6 cm), trunk diameter (1.03 cm and 1.10 cm), plant weight (136.3 g and 151.3 g), number of roots (8.09 and 9.04) and length of roots 29.0 cm and 39.1 cm). The minimum growth was recorded with control. In second experiment bench grafted plants of apple cvs Vance Delicious and Scarlet Gala were planted at a distance of 22.5cm x 22.5cm in the month of March. They were sprayed with gibberellic acid @ 100, 50, 25 and 12.5 ppm and benzyl adenine @ 50, 25, 12.5, 6.25 ppm, and GA + BA @ 12.5 ppm + 6.25 ppm on 15th May. Spray of GA @ 12.5ppm resulted in the maximum plant height (143 cm and 139 cm), trunk diameter (1.09 cm and 1.10 cm), plant weight 139 g and 133g), number of roots (10.0 and 9.6) and length of roots (27.7 cm and 31.4 cm). The minimum growth was recorded with control. In third experiment bench grafted plants of cvs Top Red and Scarlet Gala were sprayed with triacontenol in the month of April @0.25ml/,0.5ml/1,0.75ml/1,1ml/ 1,1.25ml/l and 1.5ml/l. Spray of tricontenol @ 0.75 ml/l resulted in maximum plant height (109.0 cm and 109.3 cm), trunk diameter (0.84 cm and 0.94 cm), plant weight (103.6g and 80.3g), number of roots (8.40 and 6.96) and length of roots (24.2cm and 23.1 cm), whereas the minimum growth was recorded with control. The studies revealed that if rootstock has problem of poor growth, then plants can be dipped in 500ppm IBA solution. If they do not grow well they can be sprayed with GA @ 12.5ppm or triacontenol 0.75ml/l.

KEY WORDS : Growth regulators, Apple, Nursery plants

HOW TO CITE THIS ARTICLE : Kumar, Jayant, Sharma, V.P. and Thakur, Disha (2013). Studies on the effect of growth regulators on production of apple nursery plants, Asian J. Hort., 8(1): 93-96.

pple is the major temperate fruit crop of Himachal Pradesh accounting for 64.5 % total area under fruits and 94 % of total fruit production. At present the total area under apple is 54725 ha and production is 51081 metric tones (Anonymous, 2008). Apple is most remunerative crop as far as the income is concerned. Therefore large plantations are coming up in new areas and old orchards are being replaced as they have completed their life cycle. There is a huge demand of good quality apple plants every year. The temperate fruits are usually propagated on rootstock rather than on their own

roots, because growing of fruit tree on rootstock have many advantages. The rootstock exerts, not only a, considerable influence on growth, precocity and cropping of the scion cultivar grafted on them but they also impart resistance to scion cultivars against adverse biotic and abiotic factors. Seedling rootstocks are most commonly and widely used rootstocks for apples in Himachal Pradesh. Bench grafted plants are raised on seedling rootstocks. The plants are salable in one year. The major problem for planting of orchard is availability of healthy and large size plants with good root