Practical - 10

TRAINING IN GRAPE ON HEAD AND BOWER SYSTEMS

Exercise

Training in grape on head and bower systems, if available.

Objectives

- To learn about training of grape vines on head and bower systems.

Delivery schedule: 01 period

Student expectations/learning objectives

- To learn training of grape vines on head system for high productivity and fruit quality.
- To learn training of grape vines on bower system for high productivity and fruit quality.

Handouts/material/equipment's & tools required: Practical note book, pen and pencil to note down the important points on training systems of grapevine. Secateurs, grafting knife, aluminum tags and other item required for performing training on grape vines.

Pre-learning required: Pre-requisite knowledge about training of fruit crops and its importance in fruit production.

Introduction

For teachers…

- Make students to understand the difference between training and pruning of grape.
- Practically show the different systems of training in grapevines to the students, if

Naturally, grape vine is a slender climber clinging with the help of tendrils and bearing scantly fruits at the top. To domesticate grapevines, channelizing its energy from vegetative growth to enhanced bearing, an artificial support is a must. In fact, improper training may lead to complete barrenness of the grapevine. In grape training is a distinct process and numerous systems have been evolved to create microclimate to manipulate the physiology of grape vines for increased production and improved berry quality. The basic objective of training grape vines is to give desired shape that maintains its vigour for a long time and facilitate requisite leaf exposure and cultural operations. Grapevines generally bears on new season growth which emerge from the previous season mixed buds. Grapevines can not be grown satisfactorily without some form of support, temporary or permanent, to obtain a well formed vine with a strong strait trunk quickly and economically. Various form of support like, bowers (arbours), stakes and trellis have been devised. The sort time support or stakes, especially in hard pruned vines provide support until the vines are large and rigid enough to stand on their own. The permanent support, bowers and trellis are required for vines that are either cane-prunned or cordon-trained.

Bower system of training

Bower is consisting of a criss-cross network of wires usually 2.5 meters above ground supported by pillars

made of concrete, stone, iron angle or bamboo. The training of grapevine on bower is done to form two major limbs on which several cordons are developed one on either side of each limb running along each wire. This is most popular system of grape training. The two primary limbs are developed bi-directionally and the secondary cordons are developed on the main arms so that the vines covers the over head area of about 9 square metres when planted at 3.0 m x 3.0 m. Short or long fruiting spurs are allowed to develop on the secondary cordons only. The formation of two primary limbs is encouraged by pinching off the apical shoot close to the wire. Two vigorous shoots growing in opposite directions are selected at the wire level for training as primary arms. One secondary limb is allowed to develop along each wire from these two primary. Generally, the entire length of primary arms is attained in two years. In three meters, there are usually eight wires and, therefore, eight secondary cordons should be developed on either sides, i.e. approximately four on either side of primary cordon. Once the primary and secondary cordons have been developed, the rest of the pruning is similar to that on any other cordon system.

Bower system of training

Head system of training

In this system grape vines are allowed to grow single stem initially upto a height of 1.0-1.2 m. Although, initial support are provided by means of bamboo or wooden poles which are subsequently withdrawn. As a result, the trunk of the climbers support their own canopy without any artificial framework. The tip of the grapevine is trimmed to a specific height and allowed to grow four well spaced laterals in four directions to keep balance and avoid crowding of laterals,upto a distance of about 0.7-0.8 m and again the apex of the laterals are trimmed to form bushes. This is one of the chepest methods of training grapevines.

Head system of training

Students Activities

1. Visit to a vineyard in its initial stage of establishment and attempt training of the grapevines with the help of trained personnel.
2. Write down the sequential steps involved in training of grapevines.
3. Make attempt to train other fruit plants of your locality.

Study Material

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- Chadha, K. L., Bindra, A. S. and Bal, J. S. (1993). Training and pruning in grape. In: Advances in Horticulture Vol. 2, Eds. K. L. Chadha and O. P. Pareek, Malhotra Publishing House, New Delhi, pages 687-705

- Chadha, K. L. (2001). Handbook of Horticulture. ICAR, New Delhi.

- Chattopadhyay, T. K. (2008). A textbook on Pomology, Vol. 4 (Sub-tropical fruits), Kalyani publishers, Ludhiana, India.

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