AgriCos e-Newsletter
ISSN: 2582-7049
AgriCos e-Newsletter
Open Access Multidisciplinary Monthly Online Magazine
Volume: 04 Issue: 04 April 2023 Article No: 25

Canopy Management in Fruit Crops

Poonam Saini
SMS, Department of Horticulture, Haryana

SUMMARY

Unmanaged tree canopy not only lowers fruit production but also degrades fruit quality and quantity. Sunlight penetration and yield are both improved by proper canopy management techniques. It makes profitable cropping, high, consistent yields, and enhanced farm management practices which increases production. In order to meet with high production costs, this management method generates high and regular yields of high quality fruits with low labour requirement.

INTRODUCTION

Canopy management is a skill and art of fruit growing which needs a lot of planning and knowledge about behaviour of plant after pruning. Therefore, before taking up canopy management operation in fruit crops, certain facts and knowledge is essential. A fruit tree's canopy is its physical structure, which consists of its stem, branches, shoots, and leaves. The number and size of leaves, as well as the structure of the stem, branches, and shoots, all influence the canopy density. Canopy management of the fruit tree optimize the balance between vegetative growth and fruit production in relation to the maximum productivity and quality. A key component of the efficient use of the mechanical canopy management is to achieve a favorable canopy microclimate and balanced cropping (Morris, 2007; Terry and Kurtural, 2011). The basic concept in canopy management of a perennial tree is to make the best use of the land, the climatic factors for an increased productivity in a three dimensional approach. The production and quality of the fruits are greatly influenced by the tree's vigour, light, temperature, and humidity.

Objectives

The main goal is to maximise productivity in the shortest amount of time while preserving the orchard's tree health and fruit production. From species to species and cultivar to cultivar, the natural tree canopy of fruit trees varies widely. Climate, planting density, rootstock, mode of propagation, training, pruning, regularity of bearing, type of soil, nutrition, irrigation, intercropping, usage of growth regulators, diseases, pests, environmental pollution, etc. all have an impact on the size, form, and volume of the canopy. Long-term fruit quality is improved through canopy management as well as the development of a strong tree that can carry heavy crop loads.

Basic principles

- Maximum utilization of the light
- Avoiding the development of a microclimate which is congenial to diseases and pests
- Convenience in doing cultural operations to maximize the productivity and quality
- Acquiring the necessary canopy architecture at a reasonable price.

Ideal canopy architecture

The ideal canopy architecture should adhere to as many canopy management principles as possible. Ideal canopy architecture should fulfill as many as possible principles involved in canopy management. i.e., the canopy size should be small, spreading and open in guava and mango. The desired surface area per canopy volume can be achieved by increasing the canopy height in order to increase yields per unit area of the land. The canopy height should be at a controllable level, to minimise the inconvenience of performing cultural activities, such as harvest.

Importance of Canopy Management

Most of the fruit orchards are dense and over-crowded and their bearing is low. Due to microclimate inside the canopy, they harbour a variety of pests and disease-causing agents. They harbour various pests and disease causing agents due to change in micro-climate inside the canopy.

Pruning is usually carried out to shape trees and open up the centres, allowing free movement of air and sunlight into the tree. This facilitates the penetration of sprays through the trees making control of pests and diseases much more efficient. It reduces the cost of plantation.

Methods for managing fruit tree canopies:

There are three primary methods for managing fruit tree canopies:

Pruning: The removal of limbs or branches from the tree to give thinning effect. This is what most of us think of as canopy management, but it is only one part of a larger process. Pruning in fruit trees mostly done during dormant season is in the winter months, running from around November to early March. Pruning also helps in delay fruiting. Pruning is helpful in regulating and controlling growth, flowering and fruiting of fruit trees.

Training: Positioning limbs in specific ways to manage growth, rather than removing them. Train rather than prune when possible!

Horticultural Practice: To stop excessive tree growth cut back on water, nutrients and nitrogen rather than cutting limbs.

CONCLUSION

Canopy management of the fruit tree optimize the balance between vegetative growth and fruit production in relation to the maximum productivity and quality. It makes profitable cropping, high, consistent yields, and enhanced farm management practices which increases production.

REFERENCES

Roy Anindita, Viswanath M., Gowthami L. and Nanda S.P. (2021). Training: A tool for canopy management in fruit crops. *The Pharma Innovation Journal,* SP-10(6): 361-364.

Morris, J.R. (2007). Development and commercialization of a complete vineyard mechanization system. *Hort Technology*, 17: 411-420.

Terry, D.B. and Kurtural, S.K. (2011). Achieving vine balance of Syrah with mechanical canopy management and regulated deficit irrigation. *Amer. J. Enol. Viticult*., 62: 426-437.