

Regulation of Flowering in Horticultural Crops

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India is the second largest producer of fruits and vegetables in the world yet the productivity is not sufficient to provide diet to our growing population. India is rich in horticultural crop diversity starting from tropical, subtropical to temperate regions with fifteen agro climatic zones in total. A good quality production at any time can be ensured by regulating the crop in such a way that they could produce a good crop with high productivity and ensure profitable returns. Crop regulation planning is about identifying, selecting, implementing and monitoring methods to control the yield and quality of fruits and vegetable crops. Time of flowering can be accordingly adjusted, that is early flowering or can be delayed flowering according to the demand of the market by use of various tools and techniques of flowering regulations. To be sustainable, this must be achieved where more food can be produced in limited area and with the regulation of flowering and fruiting techniques there are chances of increasing the yield and thereby productivity which in turn can fulfil the needs of many people.

Flowering is a critical step in fructification, as the absence of flowers results in the absence of fruit. Apart from their significance in determining crop yield, certain events occurring during flower formation and fruit set have an effect on fruitlet development, final fruit size and quality, and thus on returns (Singh et al. 2019). Thus, it is critical to understand how crops flower and fruit. Regulated crops are necessary to avoid market gluts and to ensure a consistent supply of crops along with off season availability. When commercial horticultural crops such as tomato, capsicum, cucumber, strawberry and some berries are grown under protected conditions, the time of flowering can be adjusted appropriately, either early or late through the use of various tools and techniques for flowering and fruit regulation, such as mechanical, environmental (inside protected structures), and chemically by using various growth regulators, etc.

Flower regulation's fundamental idea is to modify the plant's natural flowering and fruiting cycles in order to maximize fruit output, quality, and profitability (Boora et al. 2016). The concept of flower regulations is based on the fact that the majority of crop flowers are produced exclusively on young, succulent, rapidly merging vegetative growths. Flower regulation's primary purpose is to compel the plant to rest and produce an abundance of blossoms and fruits within a specific season. Flower regulations ensures a consistent and high-quality crop it maximizes production and profit for the grower; it reduces the cost of cultivation, as uninterrupted continuous blossom would produce light crops throughout the year and would require a high monitoring and marketing cost; and reduces the cost of cultivation, as uninterrupted continuous blossom would produce light crops throughout the year and would require a high monitoring and marketing cost (Lal et al. 2017).

Factors Affecting Flowering

1. Temperature
2. Relative Humidity
3. Light
4. Carbon-di-oxide
5. Wind Movement
6. Nutrition
7. Flower Structure
8. Pollination
9. Training and Pruning

References:

- Boora RS, Dhaliwal HS and Arora NK (2016) Crop regulation in guava-A review. *Agricultural Reviews* 37:1-9
- Lal N, Sahu N, Marboh ES, Gupta AK and Patel RK (2017) A Review on Crop Regulation in Fruit Crops. *International Journal of Current Microbiology and Applied Sciences*. 6(7): 4032-4043
- Singh J, Vishwakarma G, Singh RK, Pandey K (2019) Crop Regulation in Fruit Crops. In book: *Hi-Tech Horticulture Improved Production Techniques*, New India Publishing Agency (NIPA).