

REASONS FOR FLOWER DROP IN FRUIT CROPS AND THEIR MANAGEMENTHomeshvari ¹ and Badri Lal Nagar ²**Introduction:**

Fruit tree crop production is estimated using flowering efficiency and subsequent fruit set from the same flowers. Although many aspects of the abscission method have been examined previously, we focused on the causes and management of fruit tree flower drop in this review. The term "abscission" refers to the natural process by which plant components separate from the main body of the plant. Put another way, it can be said that the loss of fruit, leaves, sepals, stamens, petals, styles, and flowers is a normal aspect of plant development. Many studies have demonstrated that there are a number of factors that contribute to fruit drop, including high levels of Abscisic acid (ABA), low levels of Indole-3-acetic acid (IAA), inadequate photosynthetic yield, incorrect nitrogen delivery, wrong fertilization, auxin deficit, and excessive crop loads. The administration of certain plant growth hormones, such as GA₃ with Zn and ethylene and 1-MCP, has proved effective in reducing this issue. The study's conclusions showed that ethylene production in a particular

quantity is one of the main causes of floral detachment. Furthermore, the primary cause of flower drooping or dropping is not the NPK state of the leaves. It is a nutritious option for poultry, livestock, fish,

**FLOWER DROP IN PAPAYA****FRUIT DROP IN APPLE****Homeshvari ¹ and Badri Lal Nagar ²**

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OVERVIEW

The level of fruit production is currently declining for a variety of reasons, including disease, pest infestation, flower dropping before fruit ripens, and so on. All of these factors undoubtedly affect fruit crop yield, which in turn lowers overall net production. For example, in citrus, 80–90% of all flowers drop because of inadequate nutrient levels or environmental conditions, and in pomegranates, flower drop can be caused by a variety of factors, including disease, pests, cold temperatures, and lack of pollination.

Considering all of these problems into account, it became necessary to investigate how to resolve them; the question now was, how? The fundamental idea behind all the causes is blossom drop, which is why all the force went into the research. Flower drop has a significant effect on crop yield since lost flowers lead to lost fruit, which in turn causes yield loss and financial loss for the horticultural sector. That essentially means that flowers determine whether a crop succeeds or fails. Numerous internal and external factors, such as plant wounds or disease invasions, as well as unstable or unbalanced environmental circumstances, can cause flowers to drop. Plants also shed their flowers following pollination.

Reproductive organs dropping off Male or bisexual flowers are prevalent in many

species; most of the time, the petals fall, but different species have different floral part drops, including styles, sepals, and stamens. Flower drop can be caused by a variety of variables, including physiological disorders and environmental issues. For the sake of this discussion, we will concentrate on the primary causes of flower drop and strategies to address them.

FACTORS FOR FRUIT CROP FLOWER DROPS

- Inconsistent use of nitrogen,
- Poor fertilization,
- Climatic factors (wind, rainfall etc.)
- Massive crop load,
- Uneven ripening
- Internal auxin deficiency

Photosynthates and nutrition have a direct or indirect impact on physiological flower abscission. Hormone changes at the abscission site cause flower drop, and the development of flowers into harvestable fruit is typically influenced by a limited reservoir or supply of photosynthates and a lower than ideal level of nutrition. The abscised flowers and fruits had a high ABA content, low IAA, and poor supply of photosynthate (low total sugar content in the leaf tissue), according to Rai *et al.*, 2013 study on the ABA, IAA, and carbohydrate contents in relation to flower and fruit drop on mangosteen trees. A high ABA concentration, low IAA, and insufficient photosynthate supply could have contributed

to the excessive abscission of flowers and fruits. According to these findings, it was advised to use synthetic IAA in conjunction with excellent agricultural techniques to stop mangosteen fruit and flower abscission.

ROLE OF PGR'S IN FLOWER DROP

The influence of growth regulators on floral bud drop in Thomson Seedless grape fruit characteristics and minimal floral drop when GA₃ and IAA are applied at 20 ppm and 20 ppm, respectively.

The study conducted by Saleem *et al.* examined the effects of development controller application on the vegetative and regeneration behavior of 'Blood Red' sweet orange. They concluded that the administration of GA at 45 mg/l reduced both the bloom decrease and the natural product drop. Effect of GA₃ and zinc sprays on Washington Navel Orange trees grown in sandy soil for improving fruit quality and productivity. They came to the conclusion in this study that applying GA₃ at 10 ppm along with Zn reduces the percentage of natural product drop and increases plant output. Effects of 1-MCP (1-methylcyclopropene) and ethylene on bud and blossom drop in mini-Phalaenopsis (orchid) cultivars were observed, and it was found that 1-MCP (1-methylcyclopropene) was an ethylene inhibitor that reduced ethylene-induced floral bud drop. 1-MCP pretreatment successfully inhibited the ethylene-induced

rise in ABA levels. 1-MCP has the ability to predict ethylene activity and suppress senescence forms, such as decreased water content, elevated ABA content, and increased membrane penetrability.

CONCLUSION

Mangosteen flowers and fruits exhibit excessive abscission, which may be attributed to high ABA content, low IAA, and low photosynthate supply. Low photosynthate content was observed in the lower sugar content, which depletes nutrients from shoots with abscised flowers and fruit more than those withheld blossoms and fruit. Conversely, clearing out N, P, and K status did not affect abscission of flowers and fruits. It is much recommended to maintain the level of photosynthates and IAA content as directed by the analyst in order to reduce the rate of abscission. In addition, since ethylene-related factors may be the cause of flower drop, ethylene content should also be taken into account in order to maintain low abscission rates and high yield rates. Abscission rates in three different fruits (Washington navel orange, Blood red sweet orange, and Thomson seedless grape) are reduced by applying GA, IAA, and 1-MCP at different rates. Therefore, during fruit generation and postharvest periods, these components should be kept in place to extend yield and have great quality gather.