

## Review: Premature Fruit Drop

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**ABSTRACT-** Coffee is used to stimulate beverage crop there are some species but two species of coffee is Arabica and *C. canephora* called as Arabica and robusta coffee. Mostly 6-10% fruit fall occurring in early stage during in month of June – July, there is various factor for fruit drop like cool temperatures, high relative humidity, inadequate drainage of water, improper handling of bushes facilitate in infection to stalk rot and black rot increase the fruit fall.

Wet feet are occurred due to reduction in carbohydrate reserve and nutrients, reduction in endogenous level of cytokinin's with high content of abscisic acid. Additional drop pre mature berries due to different sized cause by carbohydrate reserves. Studies say that reduces pre-mature fruit drop is done by using plant growth regulators, adoption of good agronomic practices and enhance crop yield by 12-20% by using defoliation. In this paper reduce the fruit fall by defoliation and use of plant growth regulator to overcome the losses of crop.

**Keyword-**

Pre – mature fruit drop, defoliation, wet feet condition, fruit fall

### I. INTRODUCTION-

Most of the countries like central American, African and Asian countries grown of coffee in open condition except few countries like Indonesia, Mexico and India it is grown under shade. In India growth of coffee under two tier shade canopies, the native forest tree are top tier and fast growing tree are lower tier. Most prominent plantation crops of coffee grown in India and cultivate area is 0.41 million, "mainly in the Southern states of Karnataka, Kerala and Tamil Nadu and to a small extent of about 58,000 ha in few other states like Andhra Pradesh, Odisha and North Eastern states, which are considered non-traditional areas." (Anonymous 2013). The development, growth and crop yield depend on cultivation practices, cultivar and growing environment. In India coffee grown in high rainfall

areas in monsoon season fungal disease like stalk rot and black rot attack in coffee crop. During the dry spell period of 6-3 months in a year noticed that the yield was reduced.

The significant illnesses and nuisances were liable for around 11% of the yearly drop in natural product, or 63%. Huanglongbing (HLB) had a drop pace of 3.3 percent, dark spot had a drop pace of 2.6 percent, disease had a drop pace of 1.0 percent, and citrus ulcer had a drop pace of 0.3 percent. The typical measure of organic product drop (million 40.8 kg boxes) and the worth of yield misfortunes (million US dollars) throughout the span of the five seasons were 12.7 and 66.2, individually, for organic product drill/natural product flies; 11.0 and 57.9 for HLB; 8.1 and 42.2 for dark spot; 3.1 and 15.6 for disease; and 0.9 and 4.9 for citrus infection.



### Growth and development of berries-

The development and growth have "bismoidal curve in nature" (Anonymous 2013) with linear growth in robusta coffee and 2 slow and 2 fast growth stages in Arabica coffee. 5 development stages stages of coffee fruit. In south India after fertilizer berry development pass through different growth phase in Arabica coffee. "Such as pin head stage, which is the initial stage up to 42 days after blossom, rapid swelling from 42

to 102 days; suspended and slow growth phase from 103 to 117 days; endosperm filling stage from 118 to 152 days Slow growth phase from 153 to 182 days and final endosperm filling from 183 to 212 and ripening 212 days after blossom”. The variation is come in growth of crop due to seasonal condition and rainfall pattern. Due to low rainfall unhealthy blossom, post set and poor fruit set loses result is poor quality and reduced crop production. High rainfall soil saturation induced poor berry growth and fruit drop.

**Pre-mature fruit drop in coffee-**

3 period of fruit fall in Arabica coffee.

Stage	week	Duration	Reason of fall
I	4	During the pinhead stage	Consequence of improper or no fertilization
II	5 to 11	During the endosperm filling stage	Appears to be linked to the beginning of endosperm formation.
III	After 11	Fruit grow	Associated at least partially with depletion in carbohydrate status.

Due to harsh climatic and disease incidence condition, high humidity and low temperature provide the condition of raise a disease like infestation of black rot and stock rot, which result fruit fall. By the defoliation substantial crop losers.

**Remedial measures for control of pre-mature fruit drop-**

Various studies done for overcome fruit fall is that timely use technologies such as plant growth regular and adoption of proper agronomical package of practices.

**Soil management-**

Soil management is essential to maintain balance development and growth of coffee for

improve fruit set and reduce pre- mature fruit fall. drain out excess water by opening of cradle pits. “These pits help in providing aeration to roots and keep the root system active during monsoon period “(Venkataramanan et al. 2000).Trenches and drainage canals facilitate drain out excess of wave.

**II. CONCLUSION-**

Various factor influence fruit fall like soil management, hormonal imbalance, low and high level of rain fall and nutrition of plant. If we maintain the balance of this factor we will able to overcome the fruit fall.

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