

Research Paper :

Effect of plant growth regulators and fungicides on quality of Nagpur Mandarin



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SUMMARY

Fruits retained on each tree under study were counted prior to first application of spray. Randomly ten fruits were selected from dropped and retained fruits on tree in September, October and November and comparative quality analysis was carried out. Comparative analysis of retained and dropped fruits in the months of September, October and November showed the ascending order for average weight, average volume, TSS and number of seeds and found maximum i.e. 152.13 g, 161.27 cc, 9.68 % and 10.67 seeds/fruit, respectively in retained fruits in the month of November and minimum 109.80 g, 114.94 cc, 8.20 % and 9.22 seeds/fruit, respectively in the month of September in dropped fruits. The minimum acidity (0.92 %) and ascorbic acid (51.10 mg/100 ml juice) was observed in retained fruits in November. While maximum acidity (1.48 %) and ascorbic acid (80.52 mg/100 ml juice) were found in dropped fruits in September. The number of seeds per fruit was not significantly influenced by the application of plant growth regulators and fungicides. Maximum cost benefit ratio (1:2.72) was observed in treatment T₅ (2,4-D 10 ppm + Carbendazim 0.1 %).

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Citrus is grown in 49 countries of the world and it is choicest fruit having high consumer preference both as a fresh fruit as well as refreshing processed juice. Brazil ranks first in production followed by USA and China. Other important citrus growing countries are Spain, Mexico, India, Italy, Egypt etc. Maharashtra stands first in area under citrus cultivation.

Fruit drop, particularly at pre-harvest stage is a very complex problem and is known to be the net result of lack of adequate production of hormones within the tissue of plant, nutrient deficiency and pathological causes resulting in heavy monetary loss. Under adverse conditions, the losses go to such an extent that, it renders the citrus cultivation unprofitable to the orchardists. Pre-harvest fruit drop occurs mostly due to physiological factors mostly due to formation of abscission layer, pathological factors *i.e.* due to styler end rot and stem end rot and also due to entomological factors.

In India, the problem of pre-harvest fruit

drop in citrus has not been tackled extensively, although some work using plant growth regulators only has been done, but hardly any attempt has so far been made to evaluate the relative efficacy of plant growth regulators when mix with other materials. Very little attention has been paid to Nagpur mandarin and thus little information is available on the effect of plant growth regulators and fungicides on pre-harvest fruit drop in Nagpur mandarin.

The investigation of many research workers such as Sharma and Randhawa (1967), Jawanda *et al.* (1972) observed that several plant growth regulators minimize the fruit drop to a considerable extent.

Keeping in view the past research work on controlling pre-harvest fruit drop by using growth regulators and fungicides, a very limited research work have been carried out on above aspect under this region particularly in Nagpur mandarin. Present investigation on the effect of plant growth regulators and fungicides on intensity of fruit drop in Nagpur

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