

**FRUIT CRACKING: A NEW EMERGING PROBLEM OF NECTARINES****RAKESH KUMAR, PARSHANT BAKSHI, RAVNEET KOUR AND UPMA DUTTA**

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Nectarines are very prone to fruit cracking. It causes a great loss to the growers. The cracked fruits lose their value and they are not marketable because of the poor fruit quality and the secondary infection of fungal diseases. It can be overcome by taking effective precautions such as growing of tolerant variety, proper irrigation management, harvesting at proper stage of maturity, foliar spray of micronutrients and maintenance of soil moisture of the orchard.

Nectarines [*Prunus persica* (L.) Batsch] var. nectarina is one of the most nutritious and high value fruit from the nutritional security point of view. It belongs to family Rosaceae and is native to China. It is being commercially grown in Himachal Pradesh and has immense scope of its cultivation in J& K. Snow queen and Silver king nectarines were introduced in Regional Horticulture Research Sub-Station, Baderwah, Jammu and Kashmir and have shown promising results. The established nectarines do not require much care after planting and also its market value is very high. Nectarines provide twice the vitamin A, slightly more vitamin C and much more potassium than peaches. Nectarine colours are brighter than those seen in peach which because the fuzz on the peach tends to dilute the bright colour of the skin. The common nectarine diseases are leaf curl and brown rot but under Baderwah climatic conditions it was observed that its fruit suffer from a new malady known as fruit cracking at the time of fruit ripening. Cracked fruits deteriorate rapidly and often invite the secondary infections caused by the micro-organisms and insects and pests and lose their market value. Cracked fruits are also susceptible to various diseases during storage. It has been observed that the shape of the fruits plays an important role in fruit cracking. Both kidney and heart shaped cultivars have deeper stem cavity and the rain drops can stay there for the longer time giving possibility for more water absorption through skin. Although, many studies have dealt with this complex, the basic mechanism involved in fruit cracking remains unclear. In nectarine, generally radial cracking has been noted, where in the surface of the ripe fruit cracked radially from the distal to proximal end. The mechanism behind the cracking is that



the water uptake through the fruit skin cause the separation of cuticle to the cell wall which resulted in associated swelling of the epidermal cell wall region.

Fruit cracking in nectarines may be associated with various factors:-

**Water uptake :** It is the main cause of fruit cracking especially when water is supplied to the fruit through the tree's vascular system. This builds up tensile forces acting on the skin from inside the fruit. This cracking can occur in the orchard which is over-irrigated and is exacerbated when rain follows shortly after irrigation.

**Environmental influence:** In general, there is a linear increase in cracking with temperature from 25-35°C. Of course, the temperature also affects many other factors such as permeability of cell walls and biochemical processes of the cells. It is very important to know the influence of temperature on fruit cracking if we want to find some measure against fruit cracking, because usually the temperature is higher

underneath the skin than outside.

**Nutrient:** Nutrients like Potassium, Zinc, Boron, and Manganese are involved in physiological processes during fruit growth period and thus their deficiency results in fruit cracking.

**Hormone:** Low auxin content in the seed is directly responsible to fruit cracking.

**Cultural practices:** Lack of cultural practices in orchard such as training, pruning, weeding, hoeing, time of harvesting and improper fertilizer schedule may be the cause of fruit cracking.

**Possibility of prevention:**

*Over ripening:* Early picking of fruits is also a remedial measure to overcome cracking. This does not allow over maturity or over ripening which causes cracking of fruit.

*Rain cover protection:* The application of rain protecting covers are the best solution to have high value of marketable fresh nectarine fruit and to reduce the fruit cracking.

*Spray of minerals or other chemicals :* These are many reports in the literature suggesting that sprays of mineral salts, fungicides and other chemicals reduce the fruit

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