

Short communication

Low chill peaches and nectarines

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ABSTRACT

A fruit crop is influenced by the climate change. The winter chilling requirements vary with each cultivar. The trees begin to bloom once their chilling requirement is met. Temperate fruits do require winter chilling to break dormancy. For enhancing the production of fruits low chill cultivars of different fruit crops have been bred throughout the world. These can be introduced for cultivation in low hill regions. The low chill peaches and nectarine clones developed in the past 20 years are promising for commercial production. A number of low chill peaches and nectarines developed through breeding at different research stations all over the world have been tested and released for commercial production. These accessions have adapted to low chill areas in subtropical and tropical areas. Important pomological traits along with their chill units are briefly outlined so as to provide ready information to the orchardists about the suitability of the cultivars to be grown in areas with low chill requirements.

Keywords: chilling requirements; cultivar; peaches; nectarine; clones

Horticulture in the present scenario of cultivation is the most suitable vocation in Himachal Pradesh. Land being the most limiting factor, the food requirements of the ever increasing population can only be met by increasing the productivity per unit area through better and successful crop planning with minimal loss to nature through erosion, cutting of land etc. The hilly terrains of HP, J&K and Uttarakhand are most suitable for cultivation of stone and pome fruits in the mid and high hills. Over the years new fruit crop varieties have regularly been introduced so that in due course of time the

most ideal cultivars may replace the old ones. Also the new introductions generally induce genetic variability which is the backbone of any crop improvement programme.

Climate conditions of an area markedly influence the performance of a given fruit crop. For fruit trees to successfully grow and fruit their biological clocks must be satisfied with a fixed amount of winter chilling which varies with each cultivar. Once the chilling requirement is met with the trees begin to bloom. Fruit trees

normally thrive in zones with ecological conditions similar to their original habitat. Temperate fruits require winter chilling to break dormancy whereas this requirement is not needed in tropical or subtropical climates.

A lot has been achieved through introduction however as much of the efforts have remained towards fruit cultivation in the mid and high hills only. The low hills of the region have for long remained neglected. With the global warming this area is being rendered barren. In number of countries low chill cultivars of different fruit crops have been bred to plug the gap to bring more area under cultivation resulting in higher production. From the available germplasm of low chill cultivars efforts should be made to introduce such types and their cultivation be extended in low hill region.

Recent attempts have led to the development of low chill cultivars of peaches, nectarines and apple which can successfully be grown in tropical and

subtropical areas. The low chill peaches and nectarine clones developed in the past 20 years are promising for commercial production. Subtropically adapted cultivars (<300 chill units) are suitable for cultivation in Shiwalik foothills, plains of Punjab, Nilgiri hills, Kodaikanal etc. A number of low chill peaches and nectarines developed through breeding at different research stations all over the world particularly at the University of Florida have been tested and released for commercial production. These accessions have adapted to low chill areas in subtropical and tropical areas. Through judicious introduction a variation may be added to the fruit bowl of subtropical fruits and large unexploited areas in different parts of India can be subjected for cultivation of such peaches.

Important pomological traits along with their chill units are briefly outlined so as to provide ready information to the orchardists about the suitability of the cultivars to be grown in areas with low chill requirements (Table 1 & 2).

Table 1. Pomological traits and chill unit requirements of peach

Cultivar	Chilling units	Important pomological traits
Flordared	50-100	Fruit small to medium, round, skin 30-50%, light red blush, flesh white, moderately firm, freestone, ripens late, suitable for very warmer seasons
Flordaprince	<150	Fruits large, high quality, flavourful, set large amount of flower buds, flesh yellow, firm, ripens 80-85 days from full bloom

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Flordabelle	150	Fruit medium large, nearly round, skin 40-80%, red blushed, flesh yellow, firm, free stone, suitable for warm areas
Flordaglo	150	Fruit medium large, skin 90%, red blush, ripens 85 days after bloom, set high amount of flower buds, moderately resistant to bacterial leaf spot
Flordabeauty	150	Fruit medium large, skin 40% red blush, flesh yellow, firm, ripens 100 days after bloom, moderately susceptible to bacterial leaf spot
Tropical Beauty	150	High yielding and quality adapted to subtropical regions, more frost tolerant, ripens about 85 days after bloom, flesh dark yellow, resistant to browning
Tropical Sweet	175	Self-fertile, more frost resistant, ripen 90 days after bloom, flesh dark yellow to pale orange, resistant to browning, ripens during April to early May
Tropical Snow	200	High yielding and quality, white flesh, free stone, ripens in mid May about 90 days after bloom, skin 25-50% with red blush
Valle Grande	200	Fruits large, flesh yellow, good flavoured, firm, resistant to browning, 60-80% red blushed, ripens 80 days after bloom, susceptible to rust, moderately tolerant to bacterial spot
Flordastar	225	Fruit medium small with 60% red blush, flesh yellow with some red, firm, ripens 75 days after bloom, highly resistant to bacterial spot
Flordadawn	250	Fruit medium small, skin striped red 60%, red blush, flesh yellow, semi-clingstone, ripens 60 days after bloom, resistant to bacterial spot

Earli Grande	275	Suitable for mild winter areas, 25-75% red blush, flesh yellow, firm, early maturing
Flordagold	300	Attractive, early ripening, roundish, skin 75-80% red, firm, flesh yellow, does not brown easily
Flordasun	300	Fruit small, nearly round, skin yellow, faintly blushed, ripens uniformly, fruit set medium to heavy, require thinning, self-fruitful

Table 2. Pomological traits and chill unit requirements of nectarine

Cultivar	Chilling units	Important pomological traits
Sundowner	250	Fruit medium sized, skin 90%, red blush, flesh yellow, ripens 90 days after bloom, resistant to leaf spot
Sunhome	300	Fruit medium small, skin 100% red blush, and flesh yellow firm, smooth relatively non-browning, ripens 90 days from bloom
Sunripe	350	Fruit medium large, skin 90% red blush, high quality firm, ery sweet, freestone, susceptible to bacterial leaf spot
Snow Queen	150-300	Early- mid, white flesh, one of the best low chill white fleshed nectarines
Sun Red	250-400	Early, yellow, semi- freestone
Desert Dawn	100 or less	Early, yellow and semi-freestone, fruits require heavy thinning
Desert Delight	100 or less	Early, yellow freestone, fruit is larger and better quality than Desert Dawn, one of the best new low chill varieties
Gulf Pride	100 or less	Early-mid, yellow, freestone, large fruit, one of the best low chill nectarines
Panamint	100 or less	Yellow, mid season, a very dependable variety

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