

## Studies on suitability of low chilling peach cultivars for irrigated arid ecosystem

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### ABSTRACT

Six peach varieties namely, Early Grandi, Florida Prince, Shane-e – Punjab, Flordasun, Prabhat and Sharbati were evaluated for flowering, fruiting and quality characteristics of fruits. The observation for flowering reveals that flowering initiation was earlier in Florida Prince, Florida Sun and Prabhat and reach maturity during end of April and were found suitable for irrigated arid ecosystem. Florida Sun and Sharbati were found more susceptible to fruit fly incidence. Generally all varieties are suitable for canning.

**Key words :** Low chilling peach, Flowering, Fruiting, Yield, Value addition.

**P**each [*Prunus persica* (L.) Batsch] is a temperate juicy fruit of excellent appearance and quality, however, gaining popularity currently in submountainous region, plains of northern India (Chanana *et al.*, 1992) and under irrigated arid ecosystem. Due to availability of low chilling cultivars it is possible to grow it in sub tropical climate of Northern plains under irrigated arid ecosystem (Kahlon *et al.*, 1992; Nijjar and Khajuria, 1979; Josan *et al.*, 1999). The produce comes in the market early season particularly of low chilling cultivars grown in the warmer region. Peaches are highly valued as a Table fruit for their attractive colour and palatability. In comparison with other fruits, peaches are rich source of protein as well as amino acids (Gopalan *et al.*, 1987). The fruits can be processed as canned and dried products, frozen preserves, jam nectar and marmalade etc. Peaches are also good source of low calorific diet. Although, can be successfully grown under arid ecosystem having sure source of irrigation, this fruit has not gained momentum for commercial production. The major problem is lack of cultivars suitable for arid ecosystem having irrigation facilities. Hence, studies were carried out to find suitable low chilling peaches under arid ecosystem of northern plains.

### MATERIALS AND METHODS

The present studies were carried out at farmer's orchard at Abohar, Punjab, during 2003-2004 on 8 years old peach trees. Six peach varieties namely, Early Grandi, Florida Prince, Shane-e -Punjab, Flordasun, Prabhat and Sharbati were evaluated for flowering, fruiting and quality characteristics of fruits. The trees were planted at 6.5 x 6.5 m apart. The flowering behaviour of all the six varieties were recorded visually. A random sample of 20 fruits was

collected from each replication for physico-chemical characteristics, which were analysed as per standard methods. TSS of the fruits was estimated by using a hand held refractometer (ERMA, Japan) with a scale of 0-32 Brix (least count 0.2 B). Titrable acidity, ascorbic acid were estimated by methods given by Rangana (1986). External colour of the fruits in terms of L, a and b values was determined using Hunterlab miniscan XE Plus Calorimeter (HAL, USA, Model 45/O-L). 'L' value indicates the lightness or darkness, 'a' red or green, 'b' as yellow or blue. The data was subjected to ANOVA test for statistical analysis.

### RESULTS AND DISCUSSION

#### *Flowering and fruiting:*

The visual observation for flowering reveals that flowering initiation was earlier in Florida Prince, Florida Sun and Prabhat, whereas, it was found late in Shan-e-Punjab and Earli grandi (Table 1). The period of full bloom varied from all the cultivars between 10/2 to 27/2. Duration of flowering varied from 33 (Early Grandi and Shan-e-Punjab) to 46 (Florida Prince). To some extent same trend of flowering behaviour was observed by Josan *et al.* (1999), Nijjar and Khajuria (1979) and Singh (1967) under Ludhiana conditions. Cultivars Florida Prince, Florida Sun, and Prabhat were earlier to attain maturity followed by Shan-e-Punjab and Early Grandi, whereas, Sharbati was late to attain maturity (Table 1). Florida Sun and Prabhat were also found to be early as reported by Josan *et al.* (1999).

#### *Fruit yield and quality:*

Average fruit yield was found maximum in Florida Sun (52.2 kg/tree), which was followed by Shan-e-Punjab