I J T A
© Serials Publications
National Academy of Agricultural Science (NAAS)
Rating : 3. 03

# Performance of Peach and Nectarine for Yield and Quality Traits

*A.K. Shukla*[*], *K.K. Pramanick*[*] *S.G. Watpade*[*], *Jitender Verma and J. Kumar*

***Abstract:*** *Seven peach and nectarine genotypes viz; Shan-E-Punjab, Snow Queen, EC- 174084, Silver King, Sun Crest, July Elberta, Red Globe were evaluated for yield and quality traits from 2013 to 2016 at ICAR-IARI Regional Station, Shimla. Based on observation recorded it was found that fruit weight varied from 67.18-193.8g. Fruit length and fruit width (LxW) was maximum in Sun Crest (72.07mm x 79.16mm) with minimum in Snow Queen (34.66mm x 35.07 mm). Pulp and Stone weight were highest in Shan-e-Punjab (180.82 g and 12.98g). Fruit yield was recorded to be maximum in Shan-e-Punjab (21.39kg/tree) with minimum in Red Globe (5.12kg/tree. Pulp thickness of peach and nectarine genotypes were varied from 16.59-28.24mm with maximum in Shan-e-Punjab (28.24mm). Total Soluble Solids (TSS) was recorded highest in Shan-e-Punjab (13.4%) and minimum in Sun Crest (9.45%). Total Sugar in different genotypes of peach and nectarine was varied from 9.85- 14.15% with maximum in Shan-e-Punjab (14.15%). Titrable acidity varied from 0.42-0.95% in different genotypes.*

***Key words:*** *Peach, Nectarine, Genotypes, Yield, Quality.*

## INTRODUCTION

The hilly terrains of HP, J&K and Uttrakhand are most suitable for cultivation of stone and pome fruits in the mid and high hills. Peach (*Prunus persica* (L) Batsch.) belong to family Rosaceae is an important stone fruit grown with wide climatic ranges from temperate to subtropical tracts. It is one of the important temperate fruit crop grown mainly in Jammu and Kashmir, Himachal Pradesh, Punjab, Uttatrakhand , Nilgirihills, Jharkhand and North Eastern States (Josan et al., 1999) valued for its fresh and canned fruits. Now a day s peach has become pride to poor and marginal hilly farmers of sub-mountainous regions, plains of northern India and Southern hills (Kanwar *et al*., 2002) and also in irrigated arid and plateau ecosystem. grown in Punjab, Haryana and the adjacent areas of Western Uttar Pradesh, Uttarakhand and Himachal Pradesh. The demand for stone fruits and their processed products has increased because of rise in health concerns and nutritional awareness. It is also a rich source of vitamin A, C, iron and proteins. The harvesting season of peach ranges from May to September. Peach is generally consumed as fresh, however, delicious squash and other processed products could be prepared from its mature fruit. Skin of the fruit that is either velvety (peaches) or smooth (nectarines) in different cultivars due to single gene mutation (dominant to recessive). The flesh is very delicate and easily bruised in some cultivars, but is fairly firm in some commercial varieties, especially when green like July Alberta. It is the most preferred and legendary fruit species among the stone fruits which is grown under low temperature in hilly areas of the temperate world. Due to stunning colours and high texture, peaches are generally used as table fruits. Introduction of new crops or crop cultivars provide an ample opportunity for crop diversification in a particular weather condition to check economical feasibility for growing them commercially It is relatively performed well at an altitude ranging between 600-1000 m from msl (Jena 2015). With

* ICAR-Indian Agricultural Research Institute, Regional Station, Amartara Cottage, Shimla-171004, *Email: akshuklahort@gmail.com*

advance of breeding efforts low chilling peach cultivars have been developed and their cultivation stretches from temperate regions to subtropical worlds. Keeping this in view peach and nectarine genotypes were studied to assess the performance with context to yield and quality characteristics and yield for commercial cultivation.

## MATERIALS AND METHODS

The present studies were carried out at Horticultural Research Farm of ICAR-IARI, Regional Station, Shimla from 2013 to 2016 on bearing peach and nectarine trees. Seven peach and nectarine genotypes namely Shan-E-Punjab, Snow Queen, E.C- 174084, Silver King, Sun Crest, July Elberta, Red Globe were evaluated yield and fruit quality parameters. The trees were planted at 4×4 M under square system of planting.. Fruit weight was measured with digital Vernier Callipers, TSS of the fruits was estimated by Atago Digital refractometer with a scale of 0-32 0 Brix, Titrable acidity, total sugar were estimated by methods given by Rangana (1997). Study was laid out in randomized block design considering three replications.

## RESULTS AND DISCUSSION

### Yield and Yield parameters

Data presented in fig 1 revealed that highest fruit weight was recorded in Shan-e-Punjab (193.8g) followed by Sun Crest (188.66g), Red Globe (129.17g) whereas minimum was found in EC-174084 (67.18g). Fruit length and fruit bread (L×W) was maximum in Sun Crest (72.07mm × 79.16mm) with minimum in Snow Queen (34.66mm × 35.07 mm) rest were in between. Pulp weight was found highest in Shan-e-Punjab (180.82 g) followed by Sun Crest (176.24g), Red Globe (121.61g) and minimum in EC-174084 (61.28g) rest were in between. Stone weigh was maximum in Shan-e-Punjab (12.98g) with minimum in EC-174084 (5.90g) rest were in between. Stone size (L×W) was highest in Shan-e-Punjab (38.45 mm × 24.9mm) and minimum stone size was reported in EC-174084 (25.32mm x 14.61mm). Fruit yield was recorded to be maximum in Shan-e-Punjab (21.39kg/tree) with minimum in Red Globe (5.12kg/tree) rest were in between. Variation in yield and yield parameters was also recorded by Jena (2015), Kanwar et al (2002).

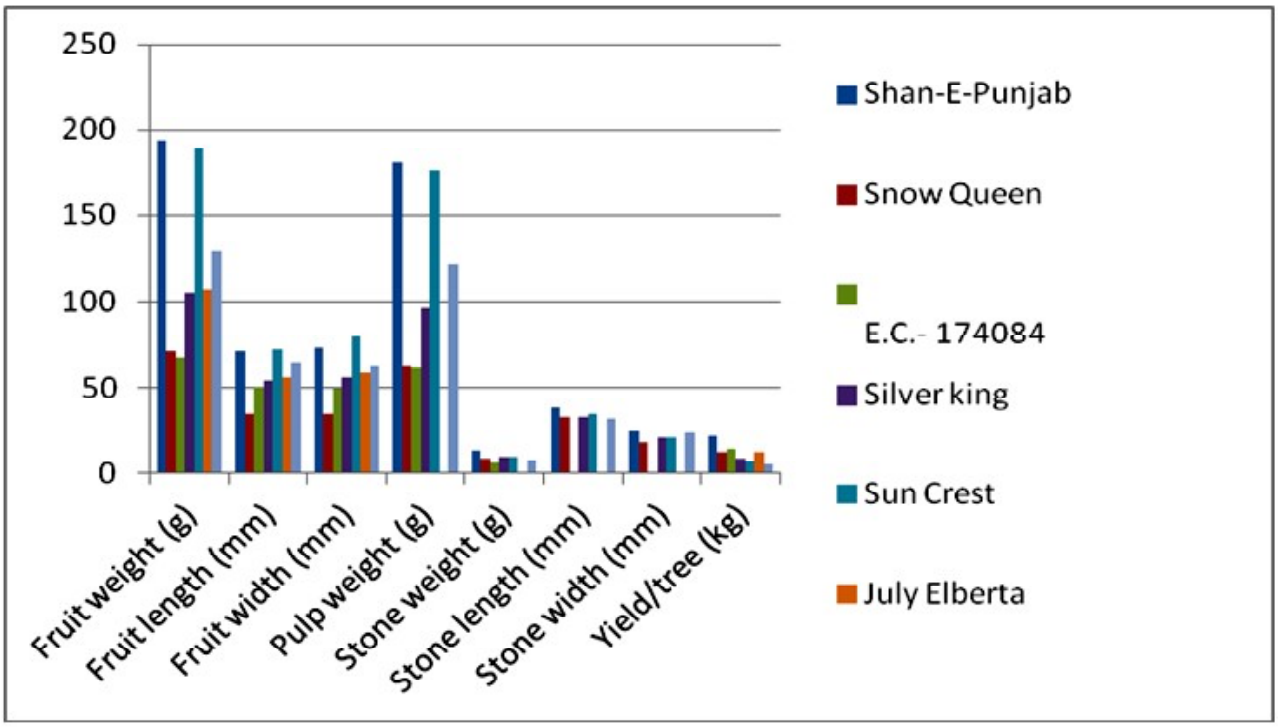


**Figure 1: Performance of Peach and Nectarine for yield parameters**

**Quality traits**

Data on quality attributing traits was presented in fig. 2 elucidates that pulp thickness of peach and nectarine genotypes were varied from 16.59-28.24mm with maximum in Shan-e-Punjab (28.24mm). Total Soluble Solids (TSS) was recorded highest in Shan-e-Punjab (13.4%) followed by EC 174084 (13.0%), Red Globe (11.32%) however minimum was found in Sun Crest (9.45%). Total Sugar in different genotypes of peach and nectarine was varied from 9.85-14.15% with maximum in Shan-e-Punjab (14.15%). Titrable acidity varied from 0.42-0.95% in different genotypes. Physico-chemical variation in different peaches were also reported by Chadha *etal* (1968), Kher (2001).

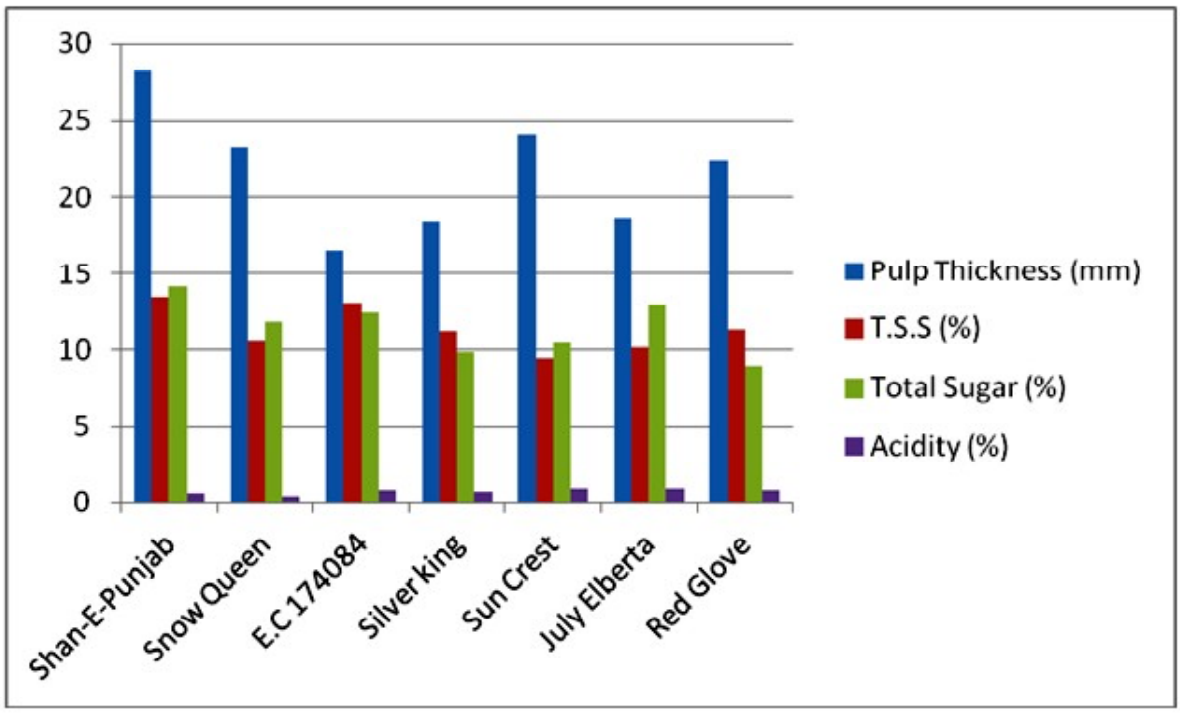


**Figure 2: Performance of Peach and Nectarine for quality parameters**

## *References*

Chadha KL, Gupta MR and Singh SN 1968. Physico- chemical characters of some peach varieties grown at the regional fruit research sub-station, Bahadurgarh. *Journal of Research*, Punjab Agricultural University 6(1):78-81.

Jana B.R. 2015.Performance of Some Low Chill Peach, [*Prunus persica* (L) Batsch] Under Eastern Plateau Regions of India. *Int.J.Curr.Microbiol.App.Sci* (2015) 4(12): 752-757.

Josan JS, Thind SK, Arora PK and Kumar A 2009. Performance of some low chilling peach cultivars under north Indian conditions. Environment and Ecology 27(4B): 1923-1926.

Kanwar JS, Chanana YR and Kaundal GS 2002. Development of new cultivars of peach for the sub-tropics of India. Acta Horticulturae 592: 103-107.

Kher R and Dorjay T 2001. Evaluation of some cultivars of peach under Jammu conditions. Haryana Journal of Horticultural Sciences 28(3/ 4): 201-202.

Rangana S 1997. Hand book of analysis and quality control of fruits and vegetables products, 2nd Edition. Tata McGraw Hill Publ. Co. Ltd., New Delhi.