



## INTERNATIONAL JOURNAL OF TROPICAL AGRICULTURE

ISSN : 0254-8755

available at <http://www.serialsjournals.com>

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Volume 36 • Number 4 • 2018

### Genetic variability in peach and nectarine

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**Abstract:** A study was undertaken to assess genetic variability in peach and nectarine genotypes (Snow Queen, Shan-E-Punjab EC- 174084, Silver King, July Elberta, Sun Crest, Red Globe) for horticultural traits at Horticultural Research Farm, Dhanda under ICAR-IARI Regional Station, Shimla. Based on data recorded it was observed that fruit weight varied from 67.18-193.8g. Fruit size (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 maximum in Shan-e-Punjab (21.39kg/tree) with minimum in Red Globe (5.12kg/tree). Pulp thickness 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%). Total Sugar 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, Temperate, ecosystem.

#### INTRODUCTION

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, Uttarakhand, Nilgiri hills, Jharkhand and North Eastern States (Josan *et al.*, 1999) valued for its fresh and canned fruits. The total area under peach

cultivation in India is 18000 hectares with the production of 1.06 Lakh metric tons (NHB, 2016-17).

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, proteins etc. The harvesting season of peach ranges from May to September depending on climate, height and varietal

features. Skin of the fruit that is either velvety (peaches) or smooth (nectarines) in different cultivars due to single gene mutation (dominant to recessive). It is the most preferred and widely fruit species among the stone fruits which is grown under wider ranges of climate. Due to stunning colours and high texture, peaches are generally used as table fruits. Introduction of new crops or crop genotypes 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 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, Dhanda under ICAR-IARI, Regional Station, Shimla to assess variability for horticultural

traits in peach and nectarine. Seven peach and nectarine genotypes namely Shan-E-Punjab, Snow Queen, E.C- 174084, Silver King, Sun Crest, July Elberta, Red Globe were assessed for horticultural traits. The trees were planted at 4X4 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 as per standard procedure described by AOAC, (1980). Study was laid out in randomized block design considering three replications.

### RESULTS AND DISCUSSION

#### Variability for yield and quality parameters

Pooled data depicted in fig 1 revealed that fruit size (LxW) was maximum in Sun Crest (72.07mm x 79.16mm) with minimum in Snow Queen (34.66mm x 35.07 mm) rest were in between. 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). Pulp weight was found highest in Shan-e-Punjab (180.82 g) and minimum in EC-

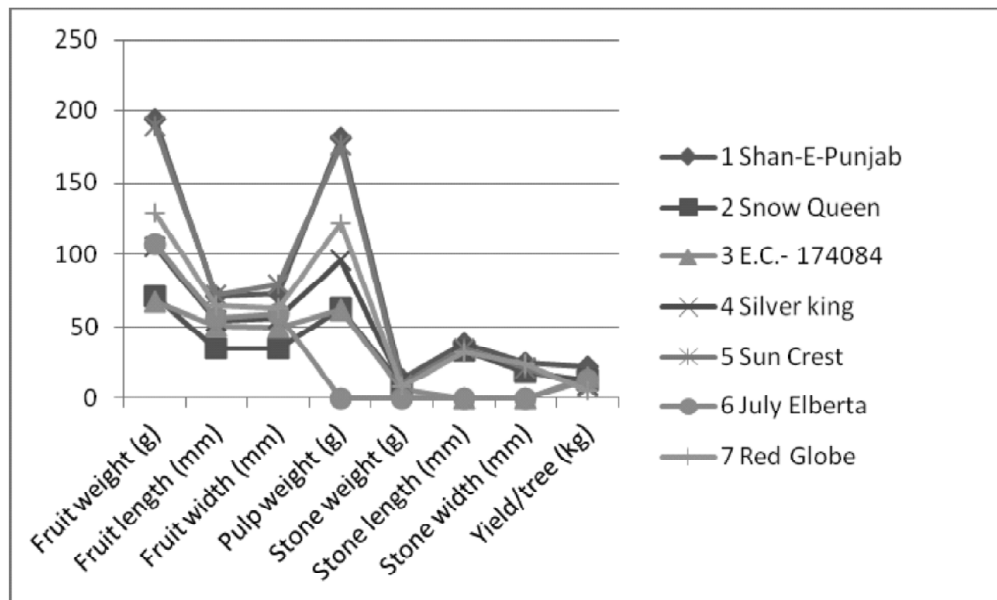


Figure 1: Variability for fruit characters

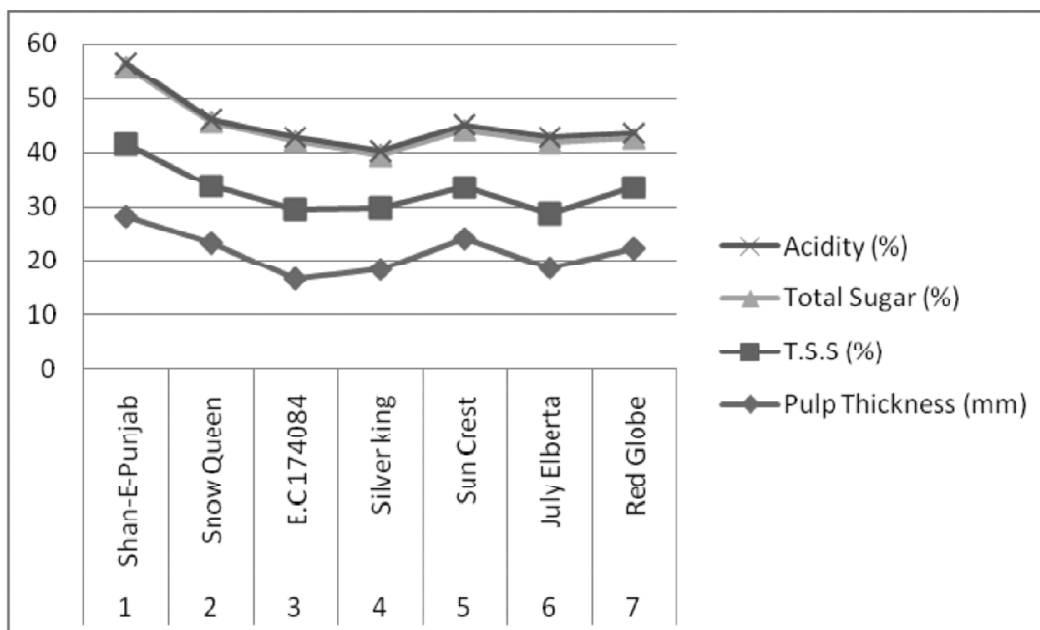


Figure 2: Variability for Quality parameters

174084 (61.28g) rest were in between. Stone weight was maximum in Shan-e-Punjab (12.98g) with minimum in EC-174084 (5.90g) rest were in between. Stone size (LxW) was highest in Shan-e-Punjab (38.45 mm x 24.9mm) and minimum stone size was reported in EC-174084 (25.32mm x 14.61mm). Fruit yield (Fig1) 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). Perusal of data on quality parameters depicted in fig. 2 elucidates that total soluble solids (TSS) varied from 9.45-13.4% with highest in Shan-e-Punjab (13.4%) and lowest in found in Sun Crest (9.45%). Pulp thickness of peach and nectarine genotypes were varied from 16.59-28.24mm with maximum in Shan-e-Punjab (28.24mm). 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. Variation in different horticultural traits were also reported by Joshi *et al* (2017), Chadha *et al* (1968), Kher (2001) in peaches.

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