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Research Article

Effect of Foliar Application of Potassium Sources on Quality of Peach (*Prunus persica* L.) cv. Shan-i-Punjab Fruit

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ABSTRACT

The aim of present study was to study the effect of foliar spray of different nutrients (potassium sulphate, potassium nitrate and potassium orthophosphate) on physic-chemical attributes in peach cv. Shan-i-Punjab at different concentrations. The experiment was conducted in randomized block design (RBD) with three replications having one tree per replication. The treatments were applied as foliar spray in the end of March. The maximum fruit weight (83.54g) and fruit length (62.8 mm) was recorded in KNO_3 (3%), closely followed by KNO_3 (2%) i.e. (81.27 g and 62.20 mm) respectively, Foliar spray of KNO_3 (2%) resulted into maximum fruit diameter (62.40 mm) as compared to all other treatments. Maximum shape index (1.06) was observed with foliar spray of KH_2PO_4 (2%). The physical quality of fruits with respect to stone weight, pulp weight, pulp stone ratio and pulp thickness was found maximum with foliar spray of KNO_3 @ 3.0% i.e. (9.32g, 74.22g, 7.96 and 1.93 mm) respectively, Minimum fruit firmness and fruit acidity was observed in foliar spray of K_2SO_4 (2%) i.e. (6.96 kg/cm2 and 0.89%) respectively, while foliar spray of K_2SO_4 @ 1.5% resulted into maximum mean TSS i.e. (8.20%). High skin color was observed with foliar spray of K_2SO_4 (1.5 and 2.0%). Foliar spray of KNO_3 at (2.0 and 3.0%) resulted into mean fruit ascorbic acid (9.32 mg/100 g fruit pulp).

Keywords: *Foliar spray, fruit weight, peach, physical quality, TSS, pulp stone ratio.*

INTRODUCTION

Peach (*Prunus persica* L.) is one of the important stone fruit mostly grown in temperate regions of the world and to a lesser extent in subtropics. It is the third most important temperate fruit cultivated in India. Presently, Low chilling peach cultivars are grown in sub-montaneous and plains of Jammu, Himachal Pradesh, Punjab, Haryana and Western Uttar Pradesh (Dhillon, 2013). India has area and production 19000 ha and 114000 MT under peach during 2017-18, respectively (NHB, 2017-18). In Haryana area under peach cultivation is increasing for the past few years. However, Shan-i-Punjab cultivar, an early maturing and less infected with fruit fly, is gaining popularity as compared to late cultivars.

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But there is problem with poor quality with small size fruits which reduces the return to the farmers. So in order to improve the productivity and quality of fruits several cultural practices were performed. The foliar application of nutrients is considered to be one of the most promising practices in fruit crops.

Potassium deficiency is one of the most significant nutrition management problems in prune culture, accounting for leaf chlorosis, scorching, early leaf and fruit abscission, limb dieback, particularly in the upper canopy and inferior fruit size and yield (Lilleland, 1932). Potassium deficiency in fruits is often observed even in K-rich soils. Fruits like banana, grapes, peach and passion fruit have high potassium requirement (Kumar et al., 2006). Although potassium does not form part of the structure of plant constituents, it regulates many vital functions like carbon assimilation, translocation of proteins and sugars, water balance in plants, maintaining turgor pressure in the cell, root development, improving quality of the fruits by maintaining desirable sugar to acid ratio, ripening of fruit and many other processes. Thus, it is the most important nutrient regulating the quality of fruits. Mimoun et al. (2009) indicated that the use of potassium foliar fertilization increased peach weight at harvest. Some aspects of fruit quality were also improved. So the present study was conducted with the aim to improve fruit quality of peach through foliar spray of potassium sources.

MATERIALS AND METHODS

Experimental site

The experiment was conducted at Experimental orchard of Department of Horticulture, CCS Haryana Agricultural University; Hisar (Haryana) situated at 215.2 m above sea level with coordinates of $29^0$10'N latitude and $75^0$46'E longitudes. It is characterized by semi-arid climate with hot and dry summer and cold winter.

Experimental material, treatments and layout

Nine year old peach cv. Shan-i-Punjab grafted on cultivar sharbati rootstocks were selected for the study. Thirty trees having uniform size and plant vigor were selected for investigation. The experiment confining of three potassium sources at three different doses viz. KNO_3 @ 1,2 & 3%; K_2SO_4 @1, 1.5 & 2.0%; KH_2PO_4 @ 1.5, 2 & 3% and compared with control (water spray). All the sprays were done at pit hardening stage by completely wetting the tree in the evening hours. Uniform cultural practices and plant protection measures were followed for these trees throughout the study period as per package of practice (Anonymous, 2013).

Data collection

Physical quality

Five representative fruits were selected from each replication at full maturity stage and subjected to physical quality analysis. Average weight was measured with the help of electric top pan balance expressed in gram. Length and diameter was recorded with Digital Vernier's Calipers and average value was expressed in millimeters (mm). Pulp weights of five randomly selected fruits from each treatment was weighed separately and then mean weight of pulp was calculated and presented as pulp weight. The five randomly selected fruits had been cut manually. The pulp thickness was measured with the assist of Digital Vernier's Calipers at the equator of fruit and the average value was calculated and expressed in millimeter (mm). The stone weight was estimated by removing or separating stone from the fruit using knife and the stone was weighted separately and presented as stone weight. The pulp to stone ratio was worked out by dividing the weight of pulp by the weight of stone. An arbitrary four-point system was followed to evaluate the fruit color as 1 to 2 (poorly colored), 2 to 3 (moderately colored) and 3 to 4 (highly colored). An average score of ten fruits was calculated in each replication keeping in mind the characteristic color. The fruits were subjected to a panel of judges for color rating.

Fruit color visually (Range)	0-25%	25-50%	50-75%	75-100%
Ranking	0-1	1-2	2-3	3-4

Chemical quality parameters

Five fruits were harvested from each tree on each date of observations at three days interval from 30th April onwards for estimating chemical quality and fruit firmness. The total soluble solids (TSS) of five randomly selected fruits were determined at room temperature by using Hand Refractmeter and the values were expressed percent. The acidity and ascorbic acid was determined by the method of AOAC (2000). Fruit firmness was measured with the help of pressure tester (Mecmesin –MDD). The tester was placed on the surface of fruit and pressure was applied until the surface was punctured. The pressure at this point was recorded and expressed as kg/cm^2.

Statistical analysis of data

The experiment was laid out on randomized block design (RBD) with three replications by taking one plant per replication. Statistical analysis of data collected during the study was processed in randomized block design as per procedure described by Panse and Sukhatme (1967).

RESULTS AND DISCUSSION

Fruit weight

Application of different concentrations of potassium nitrate, potassium sulphate and potassium orthophosphate as foliar spray significantly influenced the yield (table-1). The data indicates that the average fruit weight values under various treatments ranged between 83.54g to 67.42g. The maximum fruit weight (83.54g) was recorded in KNO_3 (3%), which was closely followed by treatment KNO_3 (2%) whereas, the minimum fruit weight (67.42g) was observed in control. In the present study, the highest fruit weight (83.54g) was observed in the plants having the foliar application of KNO_3 (3%) which was closely followed by KNO_3 (2%) i.e. 81.27g (Table 1). The increase was 23.9 and 20.5 percent, respectively, over control (67.42g). Harold and George (1996) reported that potassium assumes an imperative job in expanding the fruit weight, which may be upgraded the photosynthesis, which prompted the buildup of more starches The results are in confirmation with Rattanpal et al. (2005) who reported in Kinnow that KNO3 5% +2, 4-D 250 ppm resulted into maximum fruit weight (180.6g) who explained the reason that more carbohydrate are accumulated due to increased photosynthesis as a result of foliar application of potassium.

Fruit Size:

The maximum fruit breadth (62.4 mm) was observed with treatment KNO_3 @ 2.0% which was closely followed by KNO_3 @ 3.0 % (62.3 mm), KNO_3 @ 1.0% (61.6 mm), K_2SO_4 @ 2.0% (61.2 mm) and K_2SO_4 @ 1.5% (61.0 mm). Minimum fruit diameter (57.40 mm) was observed in control (Table 1). In the present study, KNO_3 @ 2% resulted into significantly higher fruit diameter (62.40 mm) over control (57.40 mm) but at par with the fruit diameter obtained by foliar application KNO_3 @ 1 and 3 % and K_2SO_4 @ 1.5 and 2.0%, respectively.

Potassium spray has significant effect on fruit length. The maximum fruit length was observed in T3 KNO_3 3% concentration (62.80 mm) which was satisfactory at par with T2 KNO_3 2% concentration (62.20 mm), and T6 K_2SO_4 2% concentration (62.10 mm) respectively. whereas, minimum fruit length in T7 KH_2PO_4 1.5 % concentration (57.10 mm) was recorded with control (58.80 mm) in T10. In the present study maximum fruit length (62.8 mm) was recorded with treatment of potassium nitrate at 3% concentration which was significantly higher overall the treatments including control. The diameter and length of the fruits increased with the application of potassium treatments due to the reason of lesser competition between the fruits and the leaves for the available potassium through root uptake and resulted into higher translocation of carbohydrates towards fruits (Evans & Sorgur, 1966). Also the increase in fruit size might be due to the higher accumulation of photosynthates in response to potassium application. Hansen (1970) reported that photosynthates are supplied to fruits by leaves and fruit act metabolic sink, which was probably higher on account of potassium fertilization, resulted in to increased fruit size. Gill et al. (2012) reported that foliar

application of KNO3 @ 1.5 percent increased both length and breadth in pear cultivar 'Patharnakh' depicting the involvement of potassium in improving the size.

Table 1: Effect of foliar spray of potassium sources on size of peach cv. Shan-i-Punjab

Treatments	Avg. fruit weight (g)	Fruit diameter (mm)	Fruit length (mm)
T1 : KNO_3 1.0 %	75.12	61.60	61.00
T2 : KNO_3 2.0 %	81.27	62.40	62.20
T3 : KNO_3 3.0%	83.54	62.30	62.80
T4 : K_2SO_4 1.0 %	71.03	57.90	61.00
T5 : K_2SO_4 1.5%	75.76	61.00	61.80
T6 : K_2SO_4 2.0%	78.16	61.20	62.10
T7 : KH_2PO_4 1.5%	68.18	56.10	57.10
T8 : KH_2PO_4 2.0 %	71.23	57.70	61.10
T9 : KH_2PO_4 3.0 %	75.10	59.80	61.40
T10 : Control (Water spray)	67.42	57.40	58.80
C.D. at 5%	6.74	1.70	2.50

Pulp weight:

Pulp weight increased significantly with various treatments over control and values ranged from (74.22g to 58.12g) (table-2). The maximum pulp weight (74.22g) was recorded with treatment T3 KNO_3@ 3%, which was significant at par with KNO_3 2% and significantly higher over the other treatments. The minimum pulp weight (58.12g) was recorded in control which was at par with KH_2PO_4 @ 1.0 and 2.0% and K_2SO_4 @ 1.5%.

Pulp thickness:

The pulp thickness increased significantly by various treatments except KH_2PO_4 1.5 and 2.0% and value ranged from 1.93 to 1.72 mm. The maximum pulp thickness (1.93 mm) was recorded with treatment KNO_3 @ 3%, KNO_3 @ 2.0% and K_2SO_4 @ 3.0% which was significantly at par with KNO_3 1.0%, K_2SO_4 @ 1 and 1.5%. The minimum pulp thickness (1.72 mm) was recorded in control which was at par with KH_2PO_4 @ 1.5 and 2.0% and K_2SO_4 @ 1.0%. The percent increase in the pulp weight and pulp thickness with the foliar application of KNO_3 and K_2SO_4 was due to higher translocation of the photosynthates toward the fruit with the availability of potassium through foliar application resulting in reduction of competition between the vegetative parts like leaves and fruits for available potassium through root uptake (Evans & Sorgur1966).

Stone weight:

Application of different concentrations of potassium nitrate, potassium sulphate and potassium orthophosphate (3%) as foliar spray significantly influenced stone weight over control (table-2). The stone weight under various treatments ranged from (9.32g to 8.70g). Maximum stone weight (9.32g) was recorded with treatment KNO3 (3%), which was statistically at par with treatment KNO_3 @2% (9.20g). Minimum stone weight (8.70g) was observed in control which was at par with KH_2PO_4 @ 1.5% and 2.0%. Application of different concentrations of potassium nitrate, potassium sulphate and potassium orthophosphate (3%) as foliar spray significantly influenced stone weight over control.

Pulp stone ratio

Application of different concentrations of potassium nitrate, potassium sulphate and potassium orthophosphate as foliar spray increased pulp; stone ratio over control. The pulp stone ratio under various treatments ranged from (7.96 to 6.75). Maximum pulp stone ratio (7.96) was recorded with treatment KNO_3 @ 3% followed by KNO_3 @ 2.0% and K_2SO_4 @ 2.0%. However, minimum pulp stone ratio (6.75) was observed in control. In the present study, pulp stone ratio was found to be increased with the foliar application of potassium sources like potassium nitrate, potassium sulphate, and potassium

orthophosphate and this might be due to the reason that foliar applied potassium increased both translocation of photosynthates towards fruits improving their pulp and stone weight resulting into increased pulp stone ratio. The results are in confirmation with the results of Yadav et al. (2014) who reported that foliar application of various potassium sources (K_2SO_4, KNO_3, KCl and KH_2PO_4) increased the pulp stone ratio in ber.

Table 2: Effect of foliar spray of potassium sources on physical quality of peach cv. Shan-i- Punjab

Treatments	Pulp weight (g)	Pulp thickness (mm)	Stone weight (g)	Pulp stone ratio
T1 : KNO_3 1.0 %	66.00	1.90	9.12	7.24
T2 : KNO_3 2.0 %	72.07	1.93	9.20	7.83
T3 : KNO_3 3.0 %	74.22	1.93	9.32	7.96
T4 : K_2SO_4 1.0 %	62.20	1.75	8.83	7.04
T5 : K_2SO_4 1.5%	66.81	1.91	8.95	7.46
T6 : K_2SO_4 2.0 %	69.08	1.93	9.08	7.61
T7 : KH_2PO_4 1.5%	59.48	1.65	8.70	6.84
T8 : KH_2PO_4 2.0 %	62.41	1.73	8.82	7.08
T9 : KH_2PO_4 3.0 %	66.12	1.83	8.98	7.36
T10: Control (Water spray)	58.12	1.72	8.70	6.75
C.D. at 5%	4.81	0.10	0.13	-

Skin colour:

The skin color was highly yellow with red blush with the foliar application of K_2SO_4 @ 1.0% and K_2SO_4 @ 1.5% (table-3). Moderately yellow with red blush color was observed in treatment KNO_3 2%, KNO_3 3%, K_2SO_4 1%, KH_2PO_4 2% and KH_2PO_4 3%. Poor Yellow with red blush color was observed with the foliar spray of KNO_3 @ 1.0%, KH_2PO_4 1.5% and Control (water spray). The skin colour was observed as highly yellow with red blush with the foliar application of potassium sulphate at 1.0% and 1.5%, respectively. This might be due to the reason that potassium appears to enhance anthocyanin accumulation and resulting in red coloration of apple fruits (Ritenour & Khemira, 2007). The results are in confirmation with the results obtained by Singh and Kaur (2018) where they reported that foliar application of KNO_3 3.0 percent yielded yellow coloured fruits with red blush in peach variety Shan-i-Punjab.

Table 3: Effect of potassium sources on skin color in peach cv. Shan-i-Punjab

Treatments	Rank
T1 : KNO_3 1.0 %	Poor color (1-2)
T2 : KNO_3 2.0 %	Moderate color (2-3)
T3 : KNO_3 3.0 %	Moderate color (2-3)
T4 : K_2SO_4 1.0 %	Moderate color (2-3)
T5 : K_2SO_4 1.5%	High color (3-4)
T6 : K_2SO_4 2%	High color (3-4)
T7 : KH_2PO_4 1.5%	Poor color (1-2)
T8 : KH_2PO_4 2.0 %	Moderate color (2-3)
T9 : KH_2PO_4 3.0 %	Moderate color (2-3)
T10 : Control (Water spray)	Poor color (1-2)

Fruit firmness:

Fruit firmness decreased significantly with every increase in date of observation (table-4). Maximum fruit firmness (9.22 kg/cm2) was recorded on 30th April and minimum (5.69 kg/cm2) on 12th May irrespective of treatments. All the treatments except KH_2PO_4 @ 1.5% were found significantly effective in decreasing the fruit firmness over control irrespective of days. Minimum fruit firmness

(6.96 kg/cm2) was observed in treatment K_2SO_4 @ 3.0% closely followed by KNO_3 @ 3.0 % and K_2SO_4 (1.5%) irrespective of days. Maximum value (8.03 kg/cm2) was found in treatment control.

Interaction of treatment and days were also observed significant and minimum fruit firmness (4.76 kg/cm2) was recorded on 12th May with treatment K_2SO_4 @ 2.0%, closely followed by K_2SO_4 @ 1.5% & KNO_3 @ 3.0% on 12th May. Maximum value (9.63 kg/cm2) found in treatment control on 30th April. The study revealed that potassium nitrate (1, 2, and 3%), potassium sulphate (1, 1.5 and 2%) and potassium orthophosphate (2 and 3%) significantly decreased the fruit firmness over control irrespective of days. Hernandez-Fuentes et al. (2002) found that with the application of fertilizers with high nitrogen content reduced the fruit firmness of Zacatecas-type peach. Foliar application of K_2SO_4 @ 2.00% resulted into reduction in fruit firmness by 7.79 percent over control. Mengel (2002) was of the view that potassium as foliar nutrient is well adapted as when it is sprayed on leaves is quickly translocated to other plant parts. The results are in confirmation with the results obtained by Sotiropoulos et al. (2010) who reported low flesh firmness with potassium nitrate (KNO_3) and Chelan-K treatments peach cultivar 'Andross'. Wani and Khajwall (1997) pointed out that potassium applications increased osmoregulation of cell vacuoles and maintained the equilibra, and regulating the fruit firmness.

Table 4: Effect of foliar spray of potassium sources on fruit firmness (kg/cm2) in peach cv. Shan-i-Punjab

Treatments	**30 April**	**03 May**	**06 May**	**09 May**	**12 May**	**Mean**
T1 : KNO_3 1.0 %	9.37	8.48	7.68	7.12	5.84	**7.70**
T2 : KNO_3 2.0 %	9.07	8.32	7.45	6.95	5.52	**7.46**
T3 : KNO_3 3.0 %	8.90	8.08	7.10	6.66	4.96	**7.14**
T4 : K_2SO_4 1.0 %	9.28	8.39	7.53	7.03	5.26	**7.50**
T5 : K_2SO_4 1.5%	9.12	8.20	7.18	6.48	4.98	**7.19**
T6 : K_2SO_4 2.0 %	8.88	8.10	6.92	6.12	4.76	**6.96**
T7 : KH_2PO_4 1.5%	9.37	8.52	7.79	7.15	6.46	**7.86**
T8 : KH_2PO_4 2.0%	9.32	8.42	7.56	6.98	6.40	**7.74**
T9 : KH_2PO_4 3.0%	9.21	8.31	7.48	6.72	6.10	**7.56**
T10 : Control (Water spray)	9.63	8.80	7.94	7.15	6.66	**8.03**
Mean	**9.22**	**8.36**	**7.46**	**6.84**	**5.69**	

C.D. at 5% Treatments (T) : 0.27
Days (D) : 0.70
T x D : 1.02

Total soluble solids:

A perusal of the data of fruit TSS content reveals that treatments, day and their interaction influenced TSS significantly (table-5). Among various treatments, all the treatments except KH_2PO_4 @1.5 and 2.0% increased the TSS content significantly over control irrespective of days. Maximum TSS (8.31%) was observed in treatment K_2SO_4 @ 2.0% closely followed by K_2SO_4 @ 1.5% and further statistically higher over the other treatments irrespective of days. However, minimum TSS (7.11%) was recorded in control.

Among various observation days, TSS content decreased gradually with increasing days, but decreased significantly from 6th to 9th May and from 9th to 12th May. Maximum TSS (10.16%) was observed on 12th May irrespective of treatments and minimum 6.22%

on 30th April. While comparing the interaction (treatments x days), maximum TSS (10.72%) was found in K_2SO_4 @ 2.0 on 12th May and minimum (9.51%) in control on 12th May. The TSS content in the fruits of Shan-i-Punjab was influenced significantly by all the nutrient treatments and their interaction except KH_2PO_4. It might be possible due to the reason that potassium treatment could be attributed to enhance photosynthetic efficiency of the leaves and a possible increase in translocation of assimilates into the fruit (Singh et al., 1982). Potassium foliar application in terms of potassium nitrate might result into increased K fertilization enhancing fruit soluble solids and coloring. Even, Havlin et al. (2007) was of the view that foliar application of potassium is related with role of potassium in translocation of sugars from leaves to fruits.

Table 5: Effect of foliar spray of potassium sources on fruit TSS (%) in peach cv. Shan-i- Punjab

Treatments	30 April	03 May	06 May	09 May	12 May	Mean
T1 : KNO_3 1.0 %	6.21	6.60	7.22	8.40	10.12	7.71
T2 : KNO_3 2.0 %	6.33	6.92	7.25	8.75	10.30	7.91
T3 : KNO_3 3.0 %	6.37	6.95	7.42	8.95	10.45	8.03
T4 : K_2SO_4 1.0%	6.49	6.95	7.45	8.87	10.45	8.04
T5 : K_2SO_4 1.5%	6.66	7.12	7.60	9.00	10.62	8.20
T6 : K_2SO_4 2.0%	6.80	7.15	7.75	9.15	10.72	8.31
T7 : KH_2PO_4 1.5%	5.75	6.15	6.66	7.80	9.70	7.27
T8 : KH_2PO_4 2.0%	5.85	6.22	6.82	7.87	9.83	7.32
T9 : KH_2PO_4 3.0%	5.90	6.35	6.88	7.91	9.85	7.38
T10 : Control (Water spray)	5.82	6.15	6.53	7.55	9.51	7.11
Mean	**6.22**	**6.66**	**7.16**	**8.43**	**10.16**	

C.D. at 5% Treatments (T) : 0.21
Days (D) : 0.78
T x D : 1.04

Acidity:

Fruit acidity influenced significantly with various treatments, days and their interaction (Table 6). All the treatments except KNO_3 @ 1.0 and KH_2PO_4 @ 1.5 and 2.0% decreased the fruit acidity over control. Minimum acidity (0.89%) was recorded in treatment K_2SO_4 @ 2.0% and it was found at par with all treatments except control, whereas, maximum acidity (1.10%) was found in control. Acidity content decreased gradually with increasing date of observation irrespective of treatments. After 9th May, significant decrease in acidity was observed and lowest acidity (0.42%) was found on 12th May. The interaction was also found significant and minimum acidity (0.32%) was observed in treatment K_2SO_4 @ 2.0% on 12th May and as with treatments on 12th May except control. In the present study, all the treatments except KNO3 @ 1.0% and KH_2PO_4 @ 1.5% and 2.0% decreased the fruit acidity over control. Foliar application of K_2SO_4 @ 2.0% resulted into decreased fruit acidity (0.89%). This might be due to the fact that increased TSS content resulted into decreased fruit acidity as pointed by Prasad et al. (2015).

Table 6: Effect of foliar spray of potassium sources on fruit acidity (%) in peach cv. Shan-i-Punjab

Treatments	30 April	03 May	06 May	09 May	12 May	Mean
T1 : KNO_3 1.0 %	1.22	1.27	1.10	0.98	0.46	**1.00**
T2 : KNO_3 2.0 %	1.25	1.18	1.15	0.90	0.38	**0.97**
T3 : KNO_3 3.0 %	1.25	1.12	1.02	0.76	0.34	**0.90**
T4 : K_2SO_4 1.0 %	1.25	1.20	1.06	0.94	0.36	**0.96**
T5 : K_2SO_4 1.5%	1.22	1.22	1.12	0.87	0.35	**0.96**
T6 : K_2SO_4 2.0 %	1.22	1.15	1.02	0.74	0.32	**0.89**
T7 : KH_2PO_4 1.5%	1.22	1.20	1.16	0.96	0.46	**1.00**
T8 : KH_2PO_4 2%	1.25	1.20	1.08	0.98	0.42	**0.99**
T9 : KH_2PO_4 3.0 %	1.20	1.18	1.02	1.02	0.42	**0.97**
T10 : Control (Water spray)	1.22	1.22	1.20	1.12	0.72	**1.10**
Mean	**1.23**	**1.19**	**1.09**	**0.93**	**0.42**	

C.D. at 5% Treatments (T) : 0.12
Days (D) : 0.19
T x D : 0.35

Ascorbic acid:

Data pertaining to influence of foliar application of various sources of potassium on fruit ascorbic acid in peach cv. Shan-i-Punjab clearly shows that none of the treatment affected the fruit ascorbic acid (table-7). No interaction effect was observed between date and treatments. Numerically maximum ascorbic acid (9.32 mg/100g fruit pulp) was observed in KNO_3 @ 2.0 and 3.0% and minimum (9.00 mg/100g fruit pulp) in K_2SO_4 @ 1.0%. Ascorbic acid content increased non-significantly up to 6th May and then after decreased significantly from 9th to 12th May. Maximum ascorbic acid (9.73 mg/100 g fruit pulp) was found on 6th May and minimum (7.48 mg/100g fruit pulp) on 12th May. In the present study, foliar application of K_2SO_4 at 1.0% and KH_2PO_4 1.5% resulted into decreased ascorbic acid content (9.00 and 9.01 mg/100 fruit pulp) respectively, in peach which might be due to neutralization of organic acids due to high potassium level in tissues resulting in a reduction in acidity and their by reduction in ascorbic acid content (Tisdale & Nelson, 1966). Even Dutta et al. (2011) reported in mango, the increased ascorbic acid content with foliar application of K_2SO_4 (1.0%).

Table 7: Effect of foliar spray of potassium sources on fruit ascorbic acid (mg/100g fruit pulp) in peach cv. Shan-i-Punjab

Treatments	30 April	03 May	06 May	09 May	12 May	Mean
T1 : KNO_3 1.0 %	9.78	9.82	9.84	9.26	7.38	**9.18**
T2 : KNO_3 2.0 %	9.94	9.94	9.82	9.42	7.46	**9.32**
T3 : KNO_3 3.0 %	9.82	9.82	9.82	9.42	7.70	**9.32**
T4 : K_2SO_4 1.0 %	9.26	9.42	9.62	9.26	7.46	**9.00**
T5 : K_2SO_4 1.5%	9.42	9.78	9.82	9.18	7.70	**9.18**
T6 : K_2SO_4 2.0 %	9.78	9.42	9.78	9.26	7.54	**9.16**
T7 : KH_2PO_4 1.5%	9.26	9.42	9.62	9.42	7.34	**9.01**
T8 : KH_2PO_4 2.0%	9.78	9.78	9.78	9.34	7.26	**9.19**
T9 : KH_2PO_4 3.0%	9.94	9.62	9.82	9.18	7.46	**9.20**
T10 : Control (Water spray)	9.62	9.78	9.62	9.26	7.46	**9.15**
Mean	**9.66**	**9.68**	**9.73**	**9.30**	**7.48**	

C.D. at 5% Treatments (T) : NS
Days (D) : 1.18
T x D : NS

CONCLUSION

The above results concluded that foliar application of KNO_3 (3%) successfully resulted into maximum yield, maximum fruit weight, fruit length, stone weight, pulp stone ratio, maximum pulp thickness, fruit ascorbic acid. Foliar spray of K_2SO_4 (1.5%) resulted into precocity in maturity and TSS while its foliar spray at 2.0% successfully resulted into minimum fruit firmness and fruit acidity. Both levels (1.5 and 2.0%) of K_2SO_4 as foliar spray resulted into high skin colour. Foliar spray of KH_2PO_4 (2%) resulted into maximum shape index.

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