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NUTRITIONAL COMPOSITION AND QUALITY EVALUATION OF PRODUCTS PREPARED FROM WILD PEACH (Prunus persica)

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The study was conducted to evaluate nutritive composition, functional constituents and to develop food products, i.e., jam and chutney in combination with cultivated peach pulp in different proportions. The fruit contain good amounts of phosphorous content (39.16 mg/100 g). The prepared products (jam and chutney) were studied for quality evaluation during storage interval of 9 months. The results for jam in terms of different blending proportions shows that the TSS (°B), pH, ascorbic acid (mg/100 g), reducing, total and non-reducing sugars (%) increased with the addition of cultivated peach pulp with mean values ranged from 68.20°B-69.57°B, 2.95-3.24, 1.88-9.22, 21.79-24.70, 56.98-63.42 and 33.43-36.78, respectively while acidity (%) decreased from 1.28-1.05. Similar trend was observed for wild peach based chutney. Storage had significant effect on the mean values for jam and chutney. The TSS (°B), acidity, reducing and non reducing sugars increased from 68.51-69.04, 0.94-1.17, 23.26-26.21 and 39.62-30.89 while pH, ascorbic acid (mg/100 g), and total sugars (%) decreased from 3.16-3.04, 6.04-4.43 and 63.31-56.96, respectively for jam during storage of 9 months. Similar observations were reported for chutney. The prepared products, viz., jam and chutney were subjected for sensory evaluation to a panel of members at different storage intervals i.e. (fresh, 3, 6 and 9 months of storage period) and the products were found as acceptable in terms of colour, taste, consistency/texture even up to storage interval of 9 months at ambient conditions.

Keywords: Wild peach, Nutritional composition, Products, Quality evaluation, Storage stability, Organoleptic evaluation

INTRODUCTION

Himachal Prademsh is a State of horticulture of India. Majority of the fruits are cultivated in the state. Besides, major fruit crops, underutilized fruits are also grown wildly in the state. Underutilized fruits are the fruits which are neither cultivated nor grown in an organized farming system but they grow wildly. Wild peach is an underutilized fruit of Himachal Pradesh but due to their smaller size, improper shape, poor colour, the fruit could not fetch good market value and gone as waste. The fruit is cheap but highly nutritious and possesses great therapeutic value. The fruit is eaten by children and local people in fresh as well as in dehydrated form. *Prunus persica* is commonly known as *aaru* mostly found in Solan, Shimla and Kangra districts of Himachal Pradesh. The kernel is utilized in the form of oil. The oil is used for the massage by the local people. The fruit is yellowish orange in colour. The fruit ripens in the month of June-July. Fruits are usually slight bitter and acidic

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in taste. By keeping in view the significance of this fruit attempts have been made to utilize the fruit into the preparation of RTS beverage in different combinations with cultivated apricot.

MATERIALS AND METHODS

The wild peach fruit and cultivated peach fruit were procured from local market (Palampur) Kangra district of Himachal Pradesh. The fruits were sorted, graded and washed under running tap water to remove adhering dirt, etc. The wild peach fruit was analyzed for their physico-chemical analysis. The specific parameters viz fruit colour, flesh colour and shape were assessed by visual appearance. Physical methods, viz., length and breadth of the fruit were assessed by using vernier caliper. The weight of the fruit was assessed by electronic weighing balance. The TSS and pH content was measured by hand refractometer and pH meter, respectively. The moisture, protein, fat, ash and fibre and sugars were estimated by (AOAC, 1990). The carbohydrates were determined as (NIN, 1983).

Total carbohydrates(%) = 100 – (moisture% + protein% + fat% + fibre% + ash%)

The acidity, sugars and minerals were estimated (Ranganna, 2007). The ascorbic acid, β-carotene, Vitamin A, anthocyannin and pectin were assessed by the method (Srivastava and Kumar, 2003). The tannins, simple and total phenols were estimated by the method (Mekker *et al.*, 1993). The NDF, ADF and hemicellulose contents were estimated by the method given by (Vansoest and Wine, 1967). The available/digestible carbohydrates were determined by subtracting NDF from total carbohydrate. The unavailable/ indigestible carbohydrates were determined by subtracting available carbohydrate from total carbohydrate. The total energy was calculated by multiplying by the protein, fat and total carbohydrate by 4.0, 9.0 and 4.0, respectively and summing up the values. The available energy was calculated by multiplying by the per cent protein, fat and available carbohydrate by 4.0, 9.0 and 4.0, respectively and summing up the values. The values were reported as KCal/100 g on dry matter basis.

Sample Preparation and Product Formulation

The procured fruits (wild and cultivated peach) were washed thoroughly under running tap water. The juice was obtained by hot pulping method and stones were separated manually. The boiled material was cooled to room temperature and ground into a domestic grinder to obtain homogeneous pulp. The pulp was sieved with the help of muslin cloth. 1.0 g sodium benzoate was added to 1 litre of pulp and stored in pre-sterilized glass bottles for preparation of jam and chutney. The food products were prepared as per the FPO specifications. The prepared products were stored in air tight plastic containers. The products were assessed for their nutritional analysis as per the methods (Ranganna, 2007). The 9 point Hedonic scale (Larmond, 1977) was employed for the sensory evaluation of prepared products. The prepared products were evaluated organoleptically for colour, taste, flavour, texture/consistency and overall acceptability to a panel of 10 judges by using 9 point Hedonic scale.

RESULTS AND DISCUSSION

The specific parameters of *wild peach* fruit shows that the fruit and flesh colour was observed as greenish yellow and yellow with round shape. The fruit had fuzzy skin with slight bitter and acidic in taste. The flesh firmness was soft and pulpy. The mean values for length, breadth and weight were recorded as 3.13 (cm), 2.95 (cm) and 22.52 (g), respectively. The specific gravity of the fruit was 1.02 g/ml. The mean values for TSS (^{o}B), pH, acidity (%), total sugar, reducing sugar and non-reducing sugars were reported as 9.00, 3.54, 1.69, 5.21, 2.31and 2.75, respectively. The data on proximate composition reveal that moisture, fat, fibre, ash, protein and total carbohydrate contents were reported as 68.05, 0.33, 1.16, 1.68, 2.08 and 26.74%, respectively. The dietary fibre constituent's, viz., NDF, ADF and hemi-cellulose contents were noted as 18.60, 12.86 and 5.73%. The results of the present investigation are in agreement with (Parmar and Kaushal, 1987). The available, unavailable carbohydrate (%), total energy and available energy (Kcal) were reported as 9.29, 18.60, 122.72 and 48.32, respectively. The mean values of anti-nutrients viz., tannins, simple and total phenols were reported as 1.01, 10.12 and 11.13%, respectively.

Table 2 shows functional constituents vitamin C, and pectin contents were noted as 2.53 mg/100 g and 0.77%, respectively. The data on mineral content shows that the fruit had highest content of phosphorus (39.16 mg/100 g) while the mean values for calcium, magnesium, iron and potassium 18.00, 0.35, 2.24 and 6.24 mg/100 g, respectively.

Quality Evaluation of Wild Peach Based Products

Jam

Table 3 represent effect of blending and storage on

Table 1: Specific Parameters of Wild Peach

Parameters	Observations/Mean Values
Specific Parameters	
Fruit colour	Greenish yellow
Flesh colour	Yellow
Shape	Round
Appearance	Fuzzy skin
Taste	Slightly acidic and slightly bitter
Flesh firmness	Soft and pulpy
Physical Parameters	
Length (cm)	3.13
Breadth (cm)	2.95
Weight (g)	22.52
Specific gravity (g/ml)	1.02
Nutritional Parameters	
TSS (^{o}B)	9
Ph	3.54
Acidity (% Citric acid)	1.69
Reducing sugars (%)	5.21
Total sugars (%)	2.31
Non- reducing sugars (%)	2.75
Proximate Composition	
Moisture (%)	68.05
Fat (%)	0.33
Fibre (%)	1.16
Ash (%)	1.68
Protein (%)	2.08
Total carbohydrates (%)	26.74
Other Parameters	
NDF (%)	18.6
ADF (%)	12.86
Hemicellulose (%)	5.73
Available Carbohydrates (%)	9.29
Unavailable Carbohydrates (%)	18.6
Total Energy (Kcal/100 g)	122.72
Available Energy (Kcal/100 g)	48.32
Anti-Nutritional Parameters	
Tannins (%)	1.01
Simple Phenols (%)	10.12
Total Phenols (%)	11.13

Table 2: Functional Constituents in Wild Peach

Functional Constituents	
Vitamin C (mg/100 g)	2.33
Pectin (%)	0.77
Minerals	
Calcium (mg/100 g)	18
Phosphorous (mg/100 g)	39.16
Magnesium	0.35
Iron (mg/100 g)	2.24
Potassium (mg/100 g)	6.24

nutritional parameters of wild peach jam blended with cultivated peach in varying proportions. The TSS varied significantly with the blending of cultivated peach pulp. Sood (2006) reported similar trend in akha mango blended jam. Katoch (2006) observed an increase in TSS with varying proportions of apple and guava. Storage resulted in an increase in TSS. The mean TSS values were ranged from 68.51 to 69.04 during 9 months of storage. Prasad and Mali (2006) and Kannan and Thirumanan (2004) reported an increase in TSS from (68.0 to 68.3^{o}B) and (69.0 to 71.5^{o}B) during storage interval of 12 and 6 months in bael and jamun jam, respectively. The pH content varied significantly and increases with the increase levels of cultivated peach pulp. Katoch (2006) observed similar trend when seabuckthorn jam was blended with apple and guava pulp in proportion of 50:25:25 and reported pH 3.0 for control seabuckthorn jam and 3.2 for seabuckthorn: guava and pulp (50:25:25). The mean values for storage varied non-significantly up to 3 months and after that the values varied significantly. Kanana and Thirumanan (2004) observed decrease in pH content from 3.25 to 3.18 after storage of 6 months. Data pertaining to the mean values of acidity (% malic acid) for with and without blending of cultivated peach and effect of storage on acidity shows that the acidity content increases with the increase of blending proportions cultivated peach pulp. The mean values for acidity increases with the increase of storage period and the per cent acidity ranged from 1.07 to 1.25. The increase in acidity might be due to inherited acidity present in wild peach and cultivated peach pulp and leading to the formation of organic acids by degradation of ascorbic acid and utilization of sugars to yield organic acids. Prasad and Mali (2006) and Kumari (2007) also reported

Table 3: Effect of Blending and Storage on Nutritional Parameters of Wild Peach Based Jam

Parameters	Blends	Storage (Months)				
	WA : CA	Fresh	3	6	9	Mean
TSS (^{o}B)	100:00	68.03	68	68.27	68.47	68.2
	75:25	68.07	68.1	68.43	68.67	68.32
	50:50	68.33	68.3	68.57	68.87	68.52
	25:75	68.8	68.8	69.03	69.33	68.98
	00:100	69.33	69.4	69.66	69.86	69.57
	Mean	68.51	68.5	68.79	69.04	
pH	100:00	3	2.96	2.93	2.91	2.95
	75:25	3.08	3.02	2.98	2.94	3.01
	50:50	3.17	3.13	3.07	3.04	3.1
	25:75	3.26	3.24	3.19	3.15	3.21
	00:100	3.3	3.25	3.21	3.18	3.24
	Mean	3.16	3.12	3.07	3.04	
Acidity (% Malic acid)	100:00	1.21	1.25	1.29	1.36	1.28
	75:25	1.13	1.19	1.24	1.29	1.22
	50:50	1.07	1.13	1.21	1.26	1.17
	25:75	1.01	1.05	1.12	1.18	1.09
	00:100	0.94	1	1.08	1.17	1.05
	Mean	1.07	1.12	1.19	1.25	
Ascorbic acid (mg/100 g)	100:00	2.32	2	1.73	1.45	1.88
	75:25	3.45	3.16	2.61	1.77	2.75
	50:50	5.97	5.5	4.85	4.2	5.13
	25:75	8.3	7.81	7.18	6.53	7.45
	00:100	10.17	9.75	8.75	8.21	9.22
	Mean	6.04	5.65	5.02	4.43	
Reducing sugars (%)	100:00	20.26	21.1	22.45	23.38	21.79
	75:25	20.71	21.7	22.85	23.67	22.23
	50:50	21.3	22.1	23.25	24.18	22.69
	25:75	22.44	23	23.68	24.35	23.37
	00:100	23.26	24.2	25.17	26.21	24.7
	Mean	21.56	22.4	23.48	24.36	

Table 3 (Cont.)

Total sugars (%)	100:00	60.51	58.6	55.98	52.83	56.98
	75:25	61.44	60.5	57.71	55.16	58.71
	50:50	63.43	61.5	60.51	57.71	60.78
	25:75	65.28	62.6	61.5	58.61	61.99
	00:100	65.9	64.7	62.6	60.51	63.42
	Mean	63.31	61.6	59.66	56.96	
Non- reducing sugars (%)	100:00	38.22	35.7	31.84	27.97	33.43
	75:25	38.75	36.8	35.51	29.87	35.29
	50:50	40.49	37.4	35.37	31.5	36.18
	25:75	40.11	37.6	35.93	32.54	36.55
	00:100	40.51	38.5	35.57	32.57	36.78
	Mean	39.62	37.2	34.84	30.89	

CD (P≤0.05)	TSS	pH	Acidity	Ascorbic Acid	Reducing Sugars	Total Sugars	Non-Reducing Sugars
Between Blends (A)	0.04	0.05	0.01	0.11	1.67	0.24	1.56
Between Storage (B)	0.04	0.05	0.01	0.1	1.49	0.21	1.4
Between Blends x Storage (AXB)	0.09	0.01	0.03	0.22	3.34	0.48	3.13

similar trend in ber jam and whey based mango jam respectively.

A significant increase in ascorbic acid content was reported in terms of blending proportions. The mean values for all the blends varied significantly and ranged from 1.88 to 9.92 mg/100 g. The highest ascorbic acid content was reported in pure cultivated peach jam. Irrespective of the blending proportions, the mean storage values decreased significantly from 6.04 to 4.43 mg/100 g with the increase of storage period. Loss of ascorbic acid may be due to the oxidation of ascorbic acid in the stored product. Sood (2006) reported an increase in vitamin C content, with the increase blending proportions of akha:mango jam. However, the results with respect to effect of storage on ascorbic acid content are in conformation with those of reported by Kanana and Thirumaran (2004) in jamun jam. The mean values for reducing, total and non-reducing sugars content with

respect to blending proportions and storage intervals are presented in Table 3. The data exhibit that reducing sugars increased with the increased levels of cultivated peach pulp. The mean values up to the blending proportions of 25:75 varied non-significantly. Irrespective of the blending proportions, the values during storage followed an increasing trend in all the blending proportions. The increase in the reducing sugars might be due to the hydrolysis of non-reducing sugars. Kanan and Thirumaran (2004) reported an increase in reducing sugars during 90 days of storage interval in jamun jam. The total sugar content increased with the addition of cultivated peach pulp. The mean values varied significantly when all the blends were compared with each other. However, a decrease in total sugar content was observed in all the blends during storage interval of 9 months. The mean values varied significantly from 63.31 to 56.96% from 0 to 9 months of storage period. Kanan and Thirumaran (2004) and Kumari (2007) reported a decrease in total sugars in jamun and whey based mango jam. These findings give credence to the present results. The mean values for non-reducing sugars with and without blending of cultivated peach jam ranged from 33.43 to 36.78%. A significant difference in the mean values was observed with the addition of 25, 75 and 100% of cultivated peach pulp. However, the mean values during storage significantly decreased from 39.62 to 30.89% with the enhancement of storage interval. This decrease in non-reducing sugars might be due to the hydrolysis of non-reducing sugars to reducing sugars during storage. Prasad and Mali (2006) found reduction in non-reducing sugars from 47.75 to 3.63 in ber jam during 12 months of storage.

Organoleptic Evaluation of Jam

Data with respect to effect of blending and storage on organoleptic scores of wild peach jam blended with cultivated peach are given in (Table 4). The scores for colour varied non-significantly when all the blends were compared with each other. The mean colour scores ranged from 8.00 to 8.15 for all the blends. However, storage had non-significant effect on colour. The taste scores were noted highest and lowest for jam prepared from pure cultivated peach pulp (7.92) and wild peach pulp (6.80). On a whole, the blending of cultivated peach produced a significant effect and resulted in better acceptability of the product up to the blending of 50:50 to 00:100 proportions of wild peach: cultivated peach pulp. The taste scores decreases, with the increase of storage interval. The mean sensory scores for flavour varied significantly when pure/wild peach based jam was compared with their counterparts. The flavour score for freshly prepared wild peach based jam was 6.90 which gradually increased to 7.60, 7.90, 8.10 and 8.30 with the addition of 25, 50, 75 and 100% of cultivated peach pulp. However, the mean scores for different storage interval decreased significantly with the increase of storage period. The scores with respect to consistency exhibit that there was a marginal difference in consistency of jam prepared from different levels of cultivated peach pulp. However, storage had a non-significant effect on consistency up to 6 months of storage interval but thereafter, the scores varied significantly. In terms of overall acceptability a significant difference in scores was observed when pure wild peach jam (7.50) was compared with equal proportions of pure wild peach : cultivated peach (7.86) and further for 25:75 and 00:100 (8.02 and 8.08). With storage, the overall acceptability of the product decreases. The results are in conformation with (Prasad and Mali, 2006; and Shivani, 2011) for ber and nectarine jam.

Chutney

Data in Table 5 represent effect of blending and storage on the nutritional parameters of chutney prepared from wild peach blended with cultivated peach. The initial mean TSS for wild peach chutney was 68.25°B which significantly increased with the increase blending proportions of cultivated peach 68.48°B (75:25), 68.65°B (50:50), 68.79°B (25:75) and 69.00°B (00:100). Whereas the mean values for storage varied non-significantly till 3 month and after that a significant increase in TSS was observed. Mishra (2008) reported an increase in TSS from 60.17 to 63.20°B during 6 month of storage in papaya chutney. Awasthi (2007) observed an increase in TSS in kachnar chutney blended with raw mango. The data on pH content reveal that as the blending proportion of cultivated peach pulp increased the pH content increases significantly and the values decreases with the increase of storage period. Nigam (2002) and Awasthi (2007) reported similar observations in kachnar chutney and amla chutney. The data on per cent acidity (as malic acid) shows that as the concentration of cultivated peach pulp increases, the values for acidity decreases. Irrespective of the blends, storage had a significant effect on acidity. The per cent acidity increased from 1.67 to 2.07 from the initial day of storage. The results are in confirmation with those of reported by Lal *et al.* (1989) and Sharma (2011). Further perusal of data reveal that as the concentration of cultivated peach pulp increased, the ascorbic acid content increases significantly. The highest ascorbic acid content

Table 4: Effect of Blending and Storage on Organoleptic Scores (9 Point Hedonic Scale) of Wild Peach Based Jam

Parameters	Blends	Storage (Months)				
	WA : CA	Fresh	3	6	9	Mean
Colour	100:00	8	8	8	8	8
	75:25	8	8	8	8	8.02
	50:50	8.2	8.2	8	8.2	8.15
	25:75	8.2	8	8	8.2	8.15
	00:100	8	8	8	7	8.02
	Mean	8	8	8	7.88	
Taste	100:00	7.2	7	6.6	6.4	6.8
	75:25	7.5	7.1	6.9	6.5	7
	50:50	8	7.6	7.1	6.8	7.37
	25:75	7.9	8	7.5	7.1	7.62
	00:100	8.4	8.2	7.7	7.4	7.92
	Mean	7.8	7.58	7.16	6.84	
Flavour	100:00	6.9	6.7	6.3	6.1	6.5
	75:25	7.6	7.2	6.8	6.6	7.05
	50:50	7.9	7.5	7.2	6.7	7.32
	25:75	8.1	7.8	7.7	7	7.65
	00:100	8.3	8	7.7	7.2	7.8
	Mean	7.76	7.44	7.14	6.72	
Consistency	100:00	8.8	8.8	8.7	8.5	8.7
	75:25	8.6	8.6	8.7	8.4	8.62
	50:50	8.6	8.6	8.5	8.5	8.57
	25:75	8.7	8.7	8.7	8.5	8.65
	00:100	8.6	8.6	8.6	8.5	8.6
	Mean	8.66	8.66	8.64	8.48	
Overall Acceptability	100:00	7.72	7.62	7.4	7.25	7.5
	75:25	7.92	7.8	7.6	7.37	7.67
	50:50	8.17	8	7.7	7.55	7.86
	25:75	8.22	8.17	7.97	7.7	8.02
	00:100	8.32	8.25	7.8	7.77	8.08
	Mean	8.07	7.97	7.73	7.53	

Table 4 (Cont.)

CD (P≤0.05)	Colour	Taste	Flavour	Consistency	Overall Acceptability
Between Blends (A)	0.34	0.37	0.38	0.21	0.19
Between Storage (B)	0.3	0.34	0.34	0.19	0.17
Between Blends x Storage (AXB)	0.67	0.75	0.76	0.44	0.38

was recorded in pure cultivated peach based chutney (8.85 mg/100 g) as compared to chutney containing varying proportions of wild peach to cultivated peach pulp. With storage, the ascorbic acid content in all the blends decreased with the increase of storage interval. Mishra (2008) reported an increase in ascorbic acid content with blending proportions of papaya:aloe and decrease in ascorbic acid content during storage. The reason for loss of ascorbic acid during storage is attributable to its slow oxidation due to the presence of some dissolved oxygen and its interaction with other organic constituents of chutney formulations which oxidizes it to dehydro ascorbic acid (Awasthi, 2007). The mean values for reducing sugars increased significantly as the concentration of wild peach:cultivated peach increased. Irrespective of blending proportion, storage produced a significant increasing trend with values ranged from 37.03 to 39.49%. The results are in confirmation with those reported by Nigam (2002) and Awasthi (2007). The mean value for total sugar content of wild peach based chutney was 53.10 which varied non-significantly to 54.04 (75:25) and after that the values varied significantly 55.23, 56.04 and 58.25 for 50, 25 and 100% of cultivated peach pulp. However, with storage the values for total sugar content shows a non-significant decrease in difference till 3 month of storage and after that the values varied significantly as 55.11 and 53.25 for 6 and 9 months of storage, respectively. Maillard reaction and other chemical reactions of sugar with acids during the storage might be the reason for decrease in total sugar content. The results are in agreement with those reported by Nigam (2002), Awasthi (2007) and Mishra (2008). The addition of cultivated peach pulp in wild peach chutney resulted in an increase of non-reducing sugar content from 15.80 to 16.72. Storage had a significant effect on non-reducing sugar content. The decrease in non-reducing sugar content in chutney may be

Table 5: Effect of Blending and Storage on Nutritional Parameters of Wild Peach Based Chutney

Parameters	Blends	Storage (Months)				
	WA : CA	Fresh	3	6	9	Mean
TSS (^{o}B)	100:00	68.06	68.1	68.33	68.57	68.25
	75:25	68.2	68.3	68.63	68.77	68.48
	50:50	68.3	68.5	68.76	69.06	68.65
	25:75	68.5	68.5	68.87	69.26	68.79
	00:100	68.8	68.5	68.16	69.56	69
	Mean	68.37	68.4	68.75	69.05	
pH	100:00	2.82	2.8	2.76	2.72	2.78
	75:25	2.87	2.85	2.8	2.76	2.82
	50:50	3.09	3.04	2.96	2.83	2.98
	25:75	3.17	3.15	3.06	2.99	3.09
	00:100	3.26	3.25	3.18	3.1	3.19
	Mean	3.04	3.02	2.95	2.88	
Acidity (% malic acid)	100:00	1.91	1.7	2.09	2.22	1.98
	75:25	1.82	1.78	2.03	2.13	1.94
	50:50	1.75	1.86	1.97	2.02	1.9
	25:75	1.67	1.96	1.87	1.97	1.87
	00:100	1.19	1.96	1.82	1.98	1.74
	Mean	1.67	1.85	1.96	2.07	
Ascorbic acid (mg/100 g)	100:00	2.19	2.15	1.87	1.59	1.95
	75:25	2.42	2.24	2.01	1.77	2.11
	50:50	5.51	5.13	4.57	4.38	4.89
	25:75	8.02	7.61	7.45	6.06	7.28
	00:100	10.03	9.44	8.36	7.6	8.85
	Mean	5.63	5.31	4.85	4.28	
Reducing sugars (%)	100:00	35.37	35.7	37.13	38.65	36.72
	75:25	36.06	37.5	37.89	38.66	37.53
	50:50	37.12	38.3	38.65	39.47	38.38
	25:75	37.89	39.1	39.47	39.89	39.08
	00:100	38.71	39.5	40.31	40.76	39.83
	Mean	37.03	38	38.69	39.49	

Table 5 (Cont.)

Total sugars (%)	100:00	55.16	54.4	52.14	50.69	53.1
	75:25	55.98	55.2	53.57	51.45	54.04
	50:50	56.89	56.1	55.15	52.83	55.23
	25:75	57.71	56.9	55.98	53.57	56.04
	00:100	58.7	57.9	58.71	57.71	58.25
	Mean	56.89	56.1	55.11	53.25	
Non-reducing sugars (%)	100:00	18.78	17.7	14.25	12.42	15.8
	75:25	18.92	16.8	15.8	12.14	15.91
	50:50	19.67	16.9	15.69	12.56	16.21
	25:75	18.82	16.9	15.68	12.99	16.1
	00:100	19.22	17.5	17.43	12.76	16.72
	Mean	19.08	17.2	15.77	12.57	

CD (P≤0.05)	TSS	pH	Acidity	Ascorbic Acid	Reducing Sugars	Total Sugars	Non-Reducing Sugars
Between Blends (A)	0.07	0.01	0.03	0.11	0.75	1.84	0.92
Between Storage (B)	0.06	0.01	0.02	0.1	0.67	1.64	1.9
Between Blends x Storage (AXB)	0.15	0.15	0.06	0.23	1.5	3.68	2.26

due to higher rate of conversion of the non-reducing sugar to the reducing sugar (Awasthi, 2007; and Prabha, 2008).

Organoleptic Evaluation of Chutney

Data pertaining to sensory scores of wild peach based chutney as affected by blending with cultivated peach and storage are presented in Table 6. The colour scores for chutney in the ratio of 100:00 and 75:25 proportions of wild peach:cultivated peach pulp was recorded as 8.00 which decreased to 7.80 (50:50), 7.60 (25:75) and further to 7.70 (00:100). With storage, the mean colour scores followed decreasing trend from 7.82 to 7.54 from the beginning of storage interval. The sensory scores with respect to taste and flavour of chutney prepared by using pure wild peach pulp and with addition of 25% of cultivated peach pulp resulted in an increase in non-significant effect and thereafter the scores for taste and flavour increased

Table 6: Effect of Blending and Storage on Organoleptic Scores (9 Point Hedonic Scale) of Wild Peach Based Chutney

Parameters	Blends	Storage (Months)				
	WA : CA	Fresh	3	6	9	Mean
Colour	100:00	8	8	8	7.8	7.95
	75:25	8	8	7.8	7.8	7.9
	50:50	7.8	7.8	7.7	7.6	7.72
	25:75	7.6	7.4	7.5	7.2	7.42
	00:100	7.7	7.6	7.5	7.3	7.52
	Mean	7.82	7.76	7.7	7.54	
Taste	100:00	7.1	6.9	6.7	6.4	6.77
	75:25	7.4	6.9	6.9	6.6	6.95
	50:50	7.6	7.4	7.1	6.8	7.22
	25:75	8	7.8	7.4	7.1	7.57
	00:100	8.2	8	7.6	7.3	7.77
	Mean	7.66	7.4	7.14	6.84	
Flavour	100:00	7.2	7	6.8	6.3	6.82
	75:25	7.3	7	6.9	6.4	6.9
	50:50	7.8	7.5	7.3	7	7.4
	25:75	8.1	7.7	7.5	7.2	7.62
	00:100	8.3	8	7.6	7.4	7.82
	Mean	7.74	7.44	7.22	6.86	
Consistency	100:00	8.2	8.2	8	7.8	8.05
	75:25	8.3	8.2	8.1	7.7	8.07
	50:50	8.2	8.3	8	7.8	8.07
	25:75	8.3	8.2	8	7.8	8.07
	00:100	8.3	8.2	8	7.7	8.05
	Mean	8.26	8.22	8.02	7.76	
Overall Acceptability	100:00	7.62	7.52	7.37	7.07	7.4
	75:25	7.75	7.52	7.42	7.12	7.46
	50:50	7.85	7.75	7.52	7.3	7.6
	25:75	8	7.77	7.6	7.32	7.67
	00:100	8.12	7.95	7.67	7.42	7.79
	Mean	7.87	7.7	7.52	7.25	

Table 6 (Cont.)

CD (P≤0.05)	Colour	Taste	Flavour	Consistency	Overall Acceptability
Between Blends (A)	0.33	0.33	0.34	0.35	0.17
Between Storage (B)	0.29	0.29	0.31	0.32	0.15
Between Blends x Storage (AXB)	0.66	0.66	0.69	0.71	0.35

significantly from 6.77 to 7.77 and 6.82 to 7.82. However, the mean taste and flavour scores for fresh to 9 months of storage decreased. The least scores for taste and flavour of wild peach based chutney may be attributed due to slight bitter taste of wild peach pulp and the reason for obtaining maximum scores for cultivated peach based chutney is due to known taste and flavour of cultivated peach. The consistency scores varied non-significantly when wild peach based chutney and other blends were compared with each other. However, the consistency scores decreased after 3 months of storage. In terms of overall acceptability scores, the chutney prepared from pure cultivated peach pulp had good acceptability scores 8.12. The chutney prepared from wild peach pulp scored as 7.62 but as the concentrations of cultivated peach pulp increases, the scores increased to 7.75, 7.85 and 8.00 for 75:25, 50:50 and 25:75 proportions of wild peach:cultivated peach pulp, respectively. With storage, the mean values decreased after 3, 6 and 9 months of storage interval. Similar findings have been reported by Kaur (2005) and Awasthi (2007).

CONCLUSION

The study revealed that wild peach was having slightly bitter taste but it is a good source of nutrients and attempts were made to develop food products (jam and chutney). The prepared food products were subjected to quality and sensory evaluation during storage interval of 9 months. Results showed that the products were acceptable up to 9 months of storage period.

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