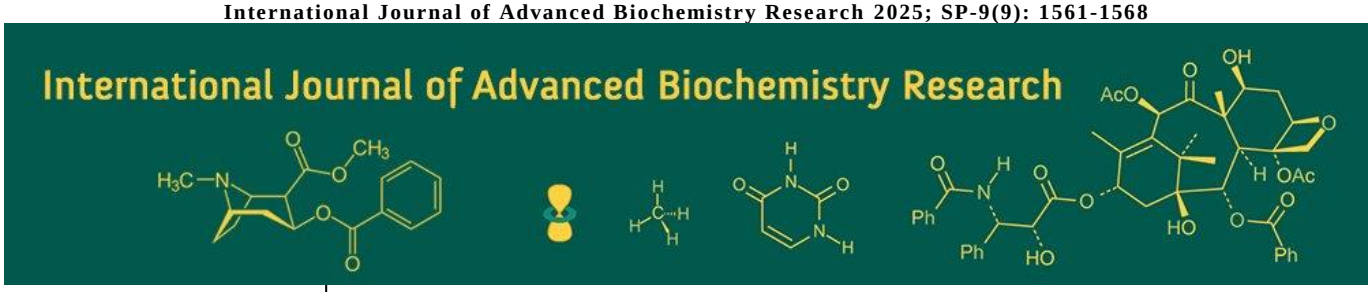

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To evaluate the sensory parameters of muskmelon (*Cucumis melo* L.) ready to serve (RTS) blended with pineapple (*Ananas comosus* L.) and aromatic crops

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Abstract
The present investigation titled "To Evaluate the Sensory parameters of Muskmelon (*Cucumis melo* L.) Ready to Serve (RTS) blended
with pineapple (*Ananas comosus* L.) and aromatic crops" was carried out in the Department of Post-Harvest Management, College of Horticulture and Research Station, Sankara-Patan, Durg (C.G.) during the academic year 2024-25. The experiment was laid out in a Completely Randomized Design (CRD) with ten treatments and three replications. The treatments comprised different blending ratios of muskmelon juice (100%, 87%, 77%, 67%) with pineapple juice (10%, 20%, 30%) and aromatic crop extracts (lemongrass, rose, mint @ 3%). Standardized processing techniques including juice extraction, blending, filtration, bottling, pasteurization, and storage in sterilized 200 ml bottles under ambient conditions were adopted. This study aimed to develop Muskmelon-pineapple RTS beverages, evaluate their sensory attributes, and assess consumer acceptability during storage. Sensory evaluation was conducted by a semi-trained panel using a 9-point hedonic scale over 45 days of storage. Results indicated that T_9 (67%Muskmelon + 30% pineapple +Mint 3%) consistently received the highest scores for colour, appearance, flavour, taste, and overall acceptability It achieved the highest scores in sensory attributes including taste (7.13),colour (6.95),appearance (6.95), and flavour (6.80). Treatments with rose (T_6) and lemongrass (T_3) also performed better than the control, whereas T0 (100% muskmelon juice) exhibited the least acceptability due to faster deterioration in sugar stability, acidity balance, and sensory quality.

Keywords: Muskmelon, beverage, organoleptic evaluation, overall acceptability, pineapple, RTS, taste

Introduction
Muskmelon (*Cucumis melo* L.), a member of the Cucurbitaceae family, is a globally cherished fruit known for its sweet, juicy flesh and aromatic profile. Its high nutritional value, including vitamins, minerals and antioxidants, makes it a popular choice for both fresh consumption and processed products (Lester, 2006) [12]. Similarly, pineapple (*Ananas comosus* L.), a tropical fruit from the Bromeliaceae family, is celebrated for its tangy-sweet flavor, rich vitamin C content and enzymatic properties, particularly bromelain, which aids digestion (Mohd Ali *et al.* 2020) [14]. The development of ready-to-serve (RTS) beverages, which are convenient, shelf-stable and nutritionally dense, has gained significant attention in the food industry as consumer demand for functional foods rises (Biswas *et al.* 2016) [3]. Blending muskmelon and pineapple with aromatic crops - such as herbs or spices - offers a novel approach to enhance sensory attributes, nutritional quality and shelf life of RTS beverages, aligning with modern trends toward natural and health-promoting products.
Sensory evaluation is a critical component in the development of any new beverage, as consumer preference is shaped by parameters such as appearance, aroma, flavour, mouthfeel, and overall acceptability (Amerine *et al.*, 1965) [1]. Previous studies on fruit-vegetable blends, such as carrot-mango and carrot-pineapple, have demonstrated improvements in both sensory and nutritional attributes (Lakshmi *et al.*, 2015) [11]. However, limited scientific evidence is available on the sensory acceptance of Muskmelon -pineapple RTS blended with aromatic crops, which presents a significant research gap. Therefore, the present investigation was undertaken to characterize the sensory attributes and assess consumer acceptability of a nutrient-enriched beetroot-pineapple blended RTS beverage.

Materials and method

The specific treatments included in the present study are T0 (100% Muskmelon juice), T_1 Muskmelon Juice 87%+ Pineapple Juice10%+Lemongrass 3%, T_2 Muskmelon Juice 77%+ Pineapple Juice 20%+ Lemongrass 3%, T_3 Muskmelon Juice 67%+ Pineapple Juice30%+ Lemongrass 3%, T_4 Muskmelon Juice 87%+ Pineapple Juice 10%+ Rose 3%, T5 Muskmelon Juice 77%+ Pineapple Juice 20%+ Rose 3%, T_6 Muskmelon Juice 67%+ Pineapple Juice 30%+ Rose 3%, T_7 Muskmelon Juice 87%+ Pineapple Juice 10%+ Mint 3% T_8 Muskmelon Juice 77% +Pineapple Juice 20%+ Mint 3% T_9 Muskmelon Juice 67%+ Pineapple Juice 30%+ Mint 3% and was conducted in the 2024-25 academic year in the Processing Laboratory of the Department of Post-Harvest Management, College of Horticulture and Research Station, Mahatma Gandhi Univercity of Horticulture & Forestry, Durg, Chhattisgarh. The experiment was carried out using a Completely Randomized Design (CRD) with three replications.

Preparation of Muskmelon RTS blended with Pineapple and aromatic crops: Fresh, healthy, and uniformly matured Muskmelon (*Cucumis melo* L.), and pineapple (*Ananas comosus L.*) fruits were procured from the local market, while damaged, diseased, or immature fruits were discarded. The selected fruits were thoroughly washed under running tap water to remove adhering dirt and surface contaminants, followed by air drying to minimize surface moisture. Muskmelon were peeled, cut into small pieces, and their juice extracted using a mixer-grinder and filtered through a double-layered muslin cloth; a similar procedure was followed for pineapple after peeling and coring. The clarified juices were blended in different proportions according to treatment formulations and thoroughly homogenized. The blends were standardized to 10° Brix total soluble solids (TSS) using cane sugar, acidified with 0.3% citric acid, and preserved with sodium benzoate at 600 ppm. The prepared beverages were hot-filled into pre-sterilized glass bottles (200 mL capacity), sealed immediately with airtight closures, and pasteurized in boiling water at 100 °C for 15 minutes. After cooling to room temperature, the bottles were stored under ambient laboratory conditions for 45 days.

Sensory evaluation: The sensory acceptability of the Muskmelon RTS blended with Pineapple and aromatic crops, RTS beverage was evaluated by a semi-trained panel of five judges drawn from different age groups and dietary habits, comprising assistant professors from various departments of the College of Horticulture and Research Station, Sankara-Patan, Durg (C.G.). The evaluation was carried out using the 9-point hedonic scale described by Amerine *et al.* (1965) [1], in which panelists rated each attribute on a scale from 1 to 9, where 1 = dislike extremely, 2 = dislike very much, 3 = dislike moderately, 4 = dislike slightly, 5 = neither liked nor disliked, 6 = like slightly, 7 = like moderately, 8 = like very much, and 9 = like extremely. Each panelist received coded samples of the different treatments along with a score sheet to record their observations. The sensory parameters assessed included taste, colour, appearance, flavour, and overall acceptability. To maintain uniformity, the samples were presented under identical conditions, and drinking water was provided to the panelists between evaluations to cleanse the palate. The recorded scores were statistically analyzed to identify significant differences among treatments and to determine the relative contribution of each sensory attribute to overall product quality.

Result and discussion

Taste

The data pertaining to the taste of Muskmelon RTS blended with Pineapple and aromatic crops during different storage intervals are presented The data pertaining to the taste of muskmelon and pineapple based RTS during different storage intervals are presented in (Table 1; Fig. 1)

At the commencement of storage (0 days), T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%) exhibited the highest taste score (8.02), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.82) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (7.51). The minimum taste score (6.40) was observed in T_0 (Muskmelon Juice 100%). By the 15th day, the peak taste score (7.71) was observed in T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.51) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (7.21). The lowest score (6.11) was recorded in T_0 (Muskmelon Juice 100%).On the 30th day of storage, T_9 retained the superior taste score (7.41), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.22) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.93). The minimum score (5.81) was observed in T_0 (Muskmelon Juice 100%).At 45 days of storage, the highest taste score (7.13) was recorded in T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (6.92) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.63). The lowest score (5.51) was noted in T_0 (Muskmelon Juice 100%).The taste scores of RTS beverages declined with storage, but blended treatments consistently outperformed the control. T_9 (muskmelon 67% + pineapple 30% + mint 3%) recorded the highest taste acceptability throughout, followed by T_6 (rose-based) and T_3 (lemongrass-based), due to their balanced sugar-acid ratio and refreshing herbal notes that enhanced palatability and masked off-flavours. In contrast, T_0 (100% muskmelon juice) showed the lowest scores at all intervals, reflecting its weaker flavour balance and faster decline in taste quality during storage. Declines in taste were attributed to oxidation of ascorbic acid, sugar degradation, and off-flavour development (Sharma *et al.*, 2020; Kumar *et al.*, 2022) [10, 17]. Similar findings were reported by Singh *et al.* (2019) and Mehta and Bhat (2021) [13, 19], confirming that blending enhances palatability and delays deterioration compared to single-fruit juices

Colour

The data pertaining to the colour of muskmelon and pineapple based RTS during different storage intervals are presented in (Table 2; Fig. 2) At the beginning of storage (0 days), T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%) recorded the highest colour score (7.83), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.53) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (7.20).

The minimum colour score (6.23) was observed in T_0 (Muskmelon Juice 100%). During the 15th day, the peak colour score (7.52) was noted in T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.21) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.93). The lowest (6.02) was recorded in T_0 (Muskmelon Juice 100%).At 30 days of storage, the maximum colour score (7.20) was found in T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.04) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.74). The minimum (5.81) was observed in T_0 (Muskmelon Juice 100%). At the conclusion of 45 days, T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%) exhibited the greatest colour score (6.95), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (6.75) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.05). The lowest (5.65) was noted in T_0 (Muskmelon Juice 100%).Color scores gradually decreased during storage; however, blended treatments maintained better visual quality than T_0. T_9 achieved the highest color acceptability, followed closely by T_6 (rose-based) and T_3 (lemongrass-based), owing to the synergistic effect of pineapple acidity and herbal additives in preserving natural pigments and preventing rapid discoloration. In contrast, T_0 (100% muskmelon juice) consistently showed the lowest scores, likely due to faster browning and pigment degradation during storage. The decreasing trend can be attributed to the degradation of natural pigments such as betalains and carotenoids, which are highly sensitive to oxygen, light, and temperature (Herbach *et al.*, 2006; Delgado-Vargas and Paredes-López, 2020) [5, 7]. Similar findings have been reported in mixed fruit RTS beverages by Shukla and Khandelwal (2021) [18]. Recent studies also confirm that pigment breakdown is a common cause of declining visual quality during storage Chauhan *et al.*, (2022) [4].

Appearance

The data pertaining to the appearance of muskmelon and pineapple based RTS during different storage intervals are presented in (Table 3; Fig. 3)At the onset of storage (0 days), T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%) recorded the highest appearance score (7.83), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.50) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (7.25). The minimum (6.20) was observed in T_0 (Muskmelon Juice 100%).At 15 days of storage, the highest appearance score (7.51) was noted in T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%), which was statistically at par with T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.95) and T_8 (Muskmelon Juice 77% + Pineapple Juice 20% + Mint 3%) (6.85). The lowest (6.02) was recorded in T_0 (Muskmelon Juice 100%).By the 30th day, the superior appearance score (7.21) was observed in T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.03) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.75). The minimum (5.80) was observed in T_0 (Muskmelon Juice 100%).Towards the end of 45 days of storage, T_9 maintained the highest appearance score (6.95), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (6.75) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.50). The lowest (5.65) was noted in T_0 (Muskmelon Juice 100%).The appearance of RTS beverages declined slightly with storage, yet blends consistently formed the control. T_9 (muskmelon 67% + pineapple 30% + mint 3%) maintained the highest scores throughout, followed by T_6 (rose-based) and T_3 (lemongrass-based), due to their appealing colour, clarity, and stability of pigments. The addition of herbs and pineapple helped retain brightness and visual appeal, whereas T_0 (100% muskmelon juice) consistently showed the lowest scores, likely due to faster browning and loss of visual freshness during storage. Similar results were reported by Chopra *et al* (2018) and Shukla and Khandelwal (2021) [18], who observed that blending fruit juices improved initial appearance but storage invariably reduced clarity.

Flavour

The data pertaining to the flavour of muskmelon and pineapple based RTS during different storage intervals are presented in (Table 4; Fig. 4)At 0 days of storage, the maximum flavour score (7.85) was recorded in T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.63) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (7.52). The minimum flavour score (6.00) was observed in T_0 (Muskmelon Juice 100%).During the 15th day, the peak flavour score (7.60) was observed in T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.42) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (7.12). In contrast, T_0 recorded the minimum score (5.85).30 days of storage, T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%)maintained the highest flavour score (7.20), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.03) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.71). The smallest score (5.71) was noted in T_0 (Muskmelon Juice 100%).At the completion of 45 days, T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%), continued to exhibit the superior flavour score (6.80),which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (6.70) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.44). The least score (5.61) was observed T_0 (Muskmelon Juice 100%). Flavour scores also declined during storage, but blended treatments consistently performed better than the control. T_9 achieved the highest flavour acceptability, followed by T_6 (rose-based) and T_3 (lemongrass-based), due to their balanced sweetness, acidity, and refreshing herbal notes that masked off-flavours and delayed deterioration. In contrast, T_0 (100% muskmelon juice) showed the lowest flavour scores throughout storage, reflecting poor flavour stability and limited consumer appeal. Loss of volatile compounds, oxidation of phenolics, and the development of off-flavours were the main reasons for the decline (Jha *et al.*, 2020; Kumar *et al.*, 2018) [8, 9]. Similar improvements in

flavour stability due to blending were also observed in fruit-vegetable beverages by Singh *et al.* (2019), Shagiwal and Deen (2022), and Patel *et al.* (2023) [15, 16, 19].

Overall Acceptability

The data pertaining to the overall acceptability of Muskmelon RTS blended with Pineapple and aromatic crops during different storage intervals are presented in (Table 5; Fig. 5) At the start of storage (0 days), T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%) recorded the highest overall acceptability score (7.88), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.62) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (7.37). The lowest score (6.21) was observed inT_0 (Muskmelon Juice 100%).At 15 days of storage, the highest overall acceptability score (7.59) was noted in T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.09) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (7.05). In contrast, T_0 (Muskmelon Juice 100%) recorded the minimum score (6.00).By the 30th day of storage, the maximum overall acceptability score (7.26) was maintained by T_9 (Muskmelon Juice 67% + Pineapple Juice 30% + Mint 3%), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (7.08) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.78). The minimum (5.78) was observed in T_0 (Muskmelon Juice 100%). At the end of 45 days, T_9 continued to show the highest overall acceptability (6.96), which was statistically at par with T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) (6.78) and T_3 (Muskmelon Juice 67% + Pineapple Juice 30% + Lemongrass 3%) (6.41). The least score (5.61) was recorded inT_0 (Muskmelon Juice 100%). Overall acceptability decreased gradually during storage across all treatments, yet blended juices consistently outperformed the control. T_9 maintained the highest overall acceptability, followed by T_6 (rose-based) and T_3 (lemongrass-based), owing to their balanced sweetness, acidity, and refreshing herbal flavor that enhanced sensory appeal and slowed quality deterioration. In contrast, T_0 (100% muskmelon juice) consistently scored the lowest due to lack of flavor balance, faster nutrient degradation, and weaker storage stability. Similar outcomes were reported by Gupta *et al.* (2019) and Arora *et al.* (2019) [2, 6], who emphasized that fruit blending improves flavour balance and overall quality in RTS beverages.

Table 1: Organoleptic evaluation (Taste) of Muskmelon RTS blended with Pineapple and aromatic crops during storage period.

	Treatment Combination	Taste			
		Storage period (Days)			
		0 Days	15 Days	30 Days	45 Days
T_0	Muskmelon Juice (100%)	6.40	6.11	5.81	5.51
T_1	Muskmelon Juice (87%) + Pineapple Juice (10%) + Lemongrass (3%)	6.61	6.32	6.02	5.73
T_2	Muskmelon Juice (77%) + Pineapple Juice (20%) + Lemongrass (3%)	6.83	6.52	6.22	5.92
T_3	Muskmelon Juice (67%) + Pineapple Juice (30%) + Lemongrass (3%)	7.51	7.21	6.93	6.63
T_4	Muskmelon Juice (87%) + Pineapple Juice (10%) +Rose (3%)	7.02	6.71	6.41	6.12
T_5	Muskmelon Juice (77%) + Pineapple Juice (20%) + Rose (3%	7.10	6.82	6.54	6.20
T_6	Muskmelon Juice (67%) + Pineapple Juice (30%) + Rose (3%)	7.82	7.51	7.22	6.92
T_7	Muskmelon Juice (87%) + Pineapple Juice (10%) + Mint (3%)	7.21	6.90	6.62	6.33
T_8	Muskmelon Juice (77%) +Pineapple Juice (20%) + Mint (3%)	7.32	7.00	6.70	6.45
T_9	Muskmelon Juice (67%) + Pineapple Juice (30%) + Mint (3%)	8.02	7.71	7.41	7.13
Sem (±)		0.18	0.10	0.07	0.12
CD (5%)		0.54	0.29	0.20	0.37
CV (%)		4.43	2.49	1.82	3.42

Table 2: Organoleptic evaluation (Colour) of Muskmelon RTS blended with Pineapple and aromatic crops during storage period.

Tr. no	Treatment Combination	Colour			
		Storage period (Days)			
		0 Days	15 Days	30 Days	45 Days
T_0	Muskmelon Juice (100%)	6.23	6.02	5.81	5.65
T_1	Muskmelon Juice (87%) + Pineapple Juice (10%) + Lemongrass (3%)	6.41	6.15	6.03	5.85
T_2	Muskmelon Juice (77%) + Pineapple Juice (20%) + Lemongrass (3%)	6.67	6.35	6.13	5.95
T_3	Muskmelon Juice (67%) + Pineapple Juice (30%) + Lemongrass (3%)	7.20	6.93	6.74	6.05
T_4	Muskmelon Juice (87%) + Pineapple Juice (10%) +Rose (3%)	6.73	6.45	6.25	6.50
T_5	Muskmelon Juice (77%) + Pineapple Juice (20%) + Rose (3%	6.92	6.65	6.42	6.20
T_6	Muskmelon Juice (67%) + Pineapple Juice (30%) + Rose (3%)	7.53	7.21	7.04	6.75
T_7	Muskmelon Juice (87%) + Pineapple Juice (10%) + Mint (3%)	6.85	6.55	6.31	6.12
T_8	Muskmelon Juice (77%) +Pineapple Juice (20%) + Mint (3%)	7.16	6.84	6.55	6.35
T_9	Muskmelon Juice (67%) + Pineapple Juice (30%) + Mint (3%)	7.83	7.52	7.20	6.95
Sem (±)		0.14	0.09	0.13	0.16
CD (5%)		0.41	0.26	0.37	0.46
		3.45	2.25	3.41	4.33

Table 3: Organoleptic evaluation (Appearance) of Muskmelon RTS blended with Pineapple and aromatic crops during storage period.

Tr. no	Treatment Combination	Appearance			
		Storage period (Days)			
		0 Days	15 Days	30 Days	45 Days
T_0	Muskmelon Juice (100%)	6.20	6.02	5.80	5.65
T_1	Muskmelon Juice (87%) + Pineapple Juice (10%) + Lemongrass (3%)	6.42	6.23	6.05	5.90
T_2	Muskmelon Juice (77%) + Pineapple Juice (20%) + Lemongrass (3%)	6.74	6.40	6.21	6.05
T_3	Muskmelon Juice (67%) + Pineapple Juice (30%) + Lemongrass (3%)	7.25	6.95	6.75	6.50
T_4	Muskmelon Juice (87%) + Pineapple Juice (10%) +Rose (3%)	6.75	6.52	6.33	6.10
T_5	Muskmelon Juice (77%) + Pineapple Juice (20%) + Rose (3%	6.95	6.71	6.45	6.25
T_6	Muskmelon Juice (67%) + Pineapple Juice (30%) + Rose (3%)	7.50	6.23	7.03	6.75
T_7	Muskmelon Juice (87%) + Pineapple Juice (10%) + Mint (3%)	6.82	6.55	6.35	6.15
T_8	Muskmelon Juice (77%) +Pineapple Juice (20%) + Mint (3%)	7.11	6.85	6.62	6.42
T_9	Muskmelon Juice (67%) + Pineapple Juice (30%) + Mint (3%)	7.83	7.51	7.21	6.95
Sem (±)		0.16	0.12	0.11	0.16
CD (5%)		0.48	0.36	0.32	0.46
CV (%)		4.02	3.18	2.93	4.30

Table 4: Organoleptic evaluation (Flavour) of Muskmelon RTS blended with Pineapple and aromatic crops during storage period.

Tr. no	Treatment Combination	Flavour			
		Storage period (Days)			
		0 Days	15 Days	30 Days	45 Days
T_0	Muskmelon Juice (100%)	6.00	5.85	5.71	5.61
T_1	Muskmelon Juice (87%) + Pineapple Juice (10%) + Lemongrass (3%)	6.41	6.20	6.00	5.93
T_2	Muskmelon Juice (77%) + Pineapple Juice (20%) + Lemongrass (3%)	6.73	6.54	6.32	6.11
T_3	Muskmelon Juice (67%) + Pineapple Juice (30%) + Lemongrass (3%)	7.52	7.12	6.71	6.44
T_4	Muskmelon Juice (87%) + Pineapple Juice (10%) +Rose (3%)	6.93	6.63	6.43	6.21
T_5	Muskmelon Juice (77%) + Pineapple Juice (20%) + Rose (3%	7.22	6.91	6.62	6.33
T_6	Muskmelon Juice (67%) + Pineapple Juice (30%) + Rose (3%)	7.63	7.42	7.03	6.70
T_7	Muskmelon Juice (87%) + Pineapple Juice (10%) + Mint (3%)	6.95	6.72	6.41	6.12
T_8	Muskmelon Juice (77%) +Pineapple Juice (20%) + Mint (3%)	7.27	6.95	6.65	6.35
T_9	Muskmelon Juice (67%) + Pineapple Juice (30%) + Mint (3%)	7.85	7.60	7.20	6.80
Sem (±)		0.09	0.05	0.18	0.17
CD (5%)		0.26	0.15	0.53	0.49
CV (%)		2.13	1.32	4.76	4.63

Table 5: Organoleptic evaluation (Overall acceptability) of Muskmelon RTS blended with Pineapple and aromatic crops during storage period

Tr. no	Treatment Combination	Overall acceptability			
		Storage period (Days)			
		0 Days	15 Days	30 Days	45 Days
T_0	Muskmelon Juice (100%)	6.21	6.00	5.78	5.61
T_1	Muskmelon Juice (87%) + Pineapple Juice (10%) + Lemongrass (3%)	6.46	6.23	6.03	5.85
T_2	Muskmelon Juice (77%) + Pineapple Juice (20%) + Lemongrass (3%)	6.74	6.45	6.22	6.01
T_3	Muskmelon Juice (67%) + Pineapple Juice (30%) + Lemongrass (3%)	7.37	7.05	6.78	6.41
T_4	Muskmelon Juice (87%) + Pineapple Juice (10%) +Rose (3%)	6.86	6.58	6.36	6.23
T_5	Muskmelon Juice (77%) + Pineapple Juice (20%) + Rose (3%	7.05	6.77	6.51	6.25
T_6	Muskmelon Juice (67%) + Pineapple Juice (30%) + Rose (3%)	7.62	7.09	7.08	6.78
T_7	Muskmelon Juice (87%) + Pineapple Juice (10%) + Mint (3%)	6.96	6.68	6.42	6.18
T_8	Muskmelon Juice (77%) +Pineapple Juice (20%) + Mint (3%)	7.22	6.91	6.63	6.39
T_9	Muskmelon Juice (67%) + Pineapple Juice (30%) + Mint (3%)	7.88	7.59	7.26	6.96
Sem (±)		0.09	0.07	0.10	0.11
CD (5%)		0.28	0.22	0.30	0.33
CV (%)		2.32	1.91	2.71	3.11

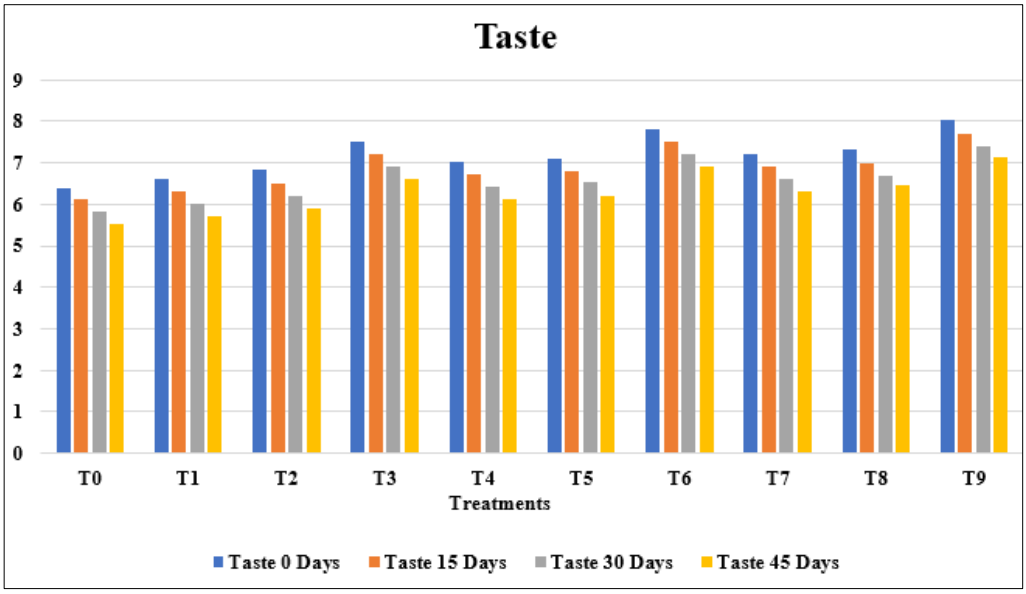

Fig 1: Organoleptic evaluation (Taste) of Muskmelon RTS blended with Pineapple and aromatic crops during storage period

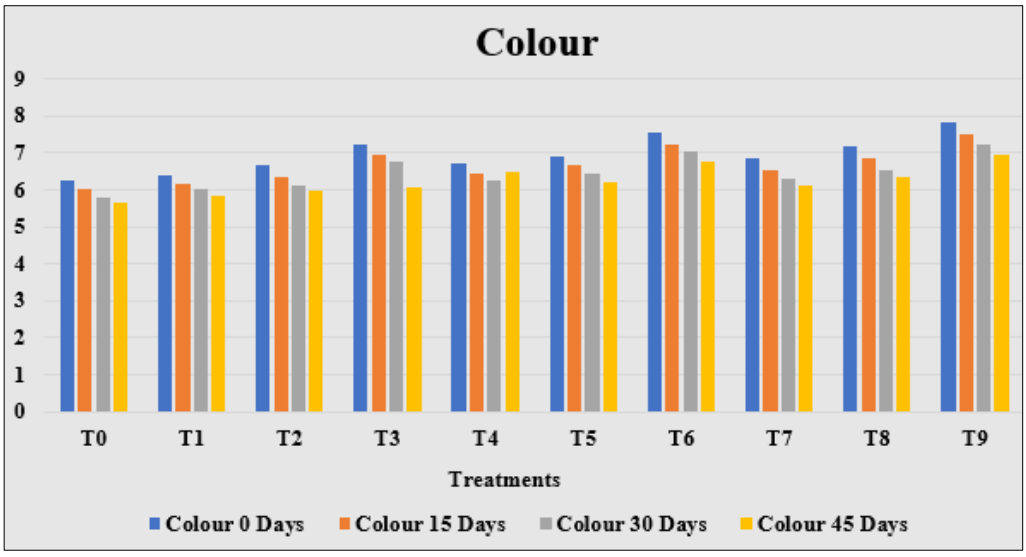

Fig 2: Organoleptic evaluation (Colour) of Muskmelon RTS blended with Pineapple and aromatic crops during storage period

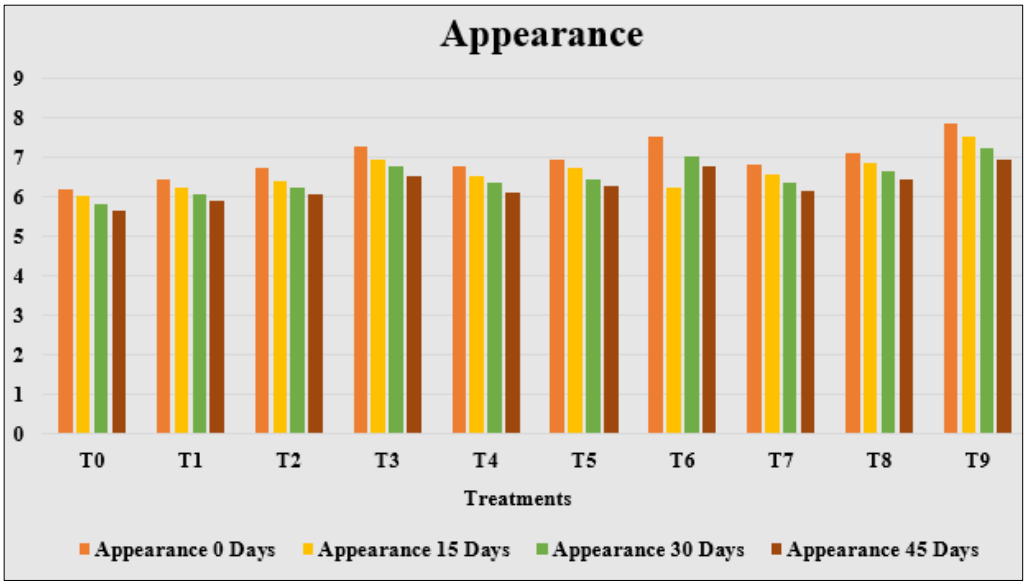

Fig 3: Organoleptic evaluation (Apperance) of Muskmelon RTS blended with Pineapple and aromatic crops during storage period.

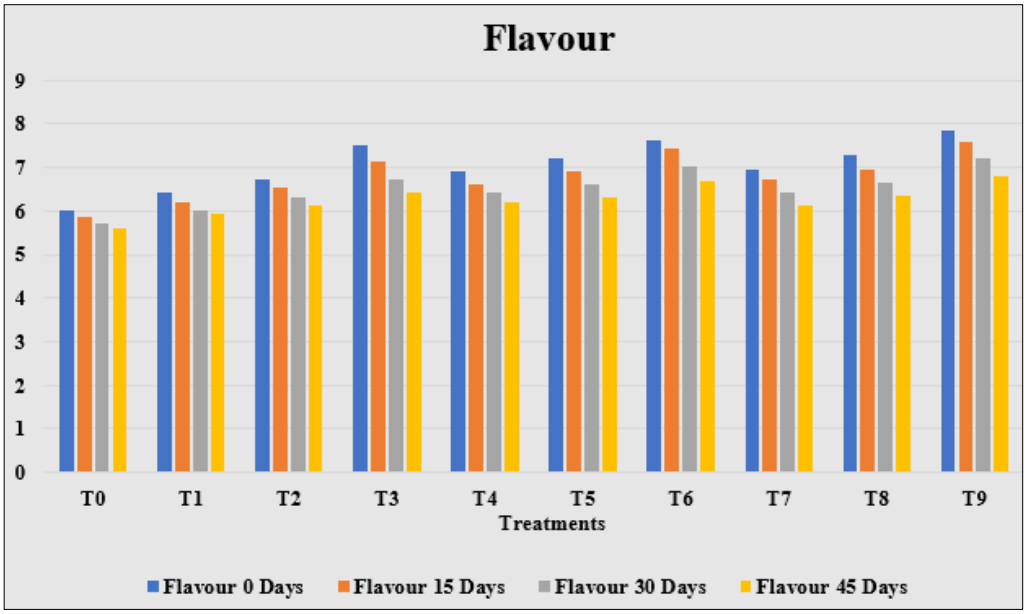

Fig 4: Organoleptic evaluation (Flavour) of Muskmelon RTS blended with Pineapple and aromatic crops during storage period.

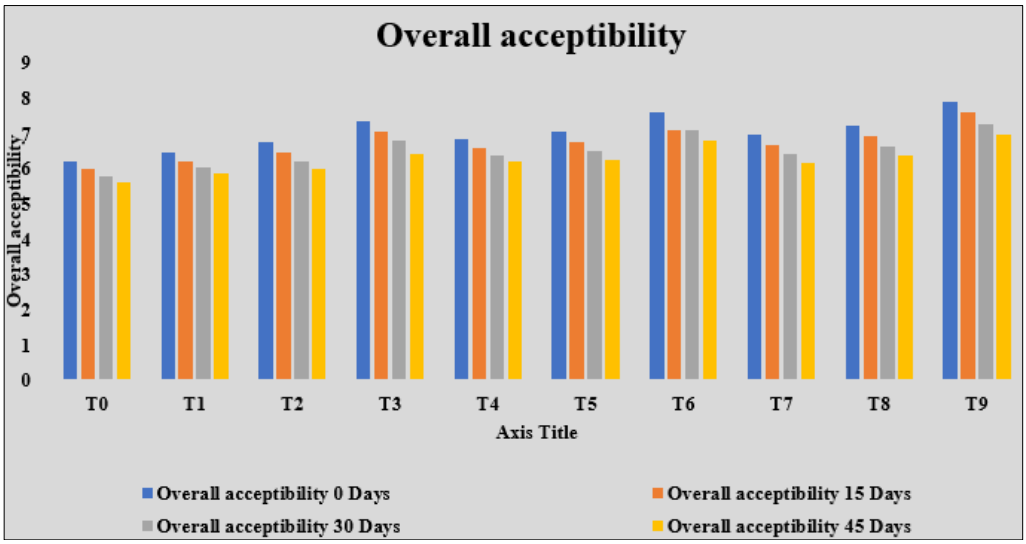

Fig 5: Organoleptic evaluation (Overall acceptibility) of Muskmelon RTS blended with pineapple and aromatic crops during storage period.

Conclusion

The sensory evaluation of Muskmelon RTS blended with Pineapple and aromatic crops demonstrated that blending significantly improved colour, appearance, flavour, taste, and overall acceptability compared to pure Muskmelon juice. Among the treatments, the (Muskmelon Juice 67%+ Pineapple 30%+ mint 3% blend (T_9) consistently received the highest scores at preparation and throughout storage, followed by the T_6 (Muskmelon Juice 67% + Pineapple Juice 30% + Rose 3%) emerged as the most acceptable blend. In contrast, pure Muskmelon juice (T_0) was least acceptable across all parameters. Although all treatments showed a gradual decline in sensory quality during 45 days of storage, blends containing higher pineapple proportions maintained superior acceptability. These findings indicate that incorporating pineapple juice (20-30%) into Muskmelon RTS enhances sensory quality and storage stability of Muskmelon-based RTS beverages, making them more appealing to consumers and confirm the potential of Muskmelon-pineapple blends as a nutrient-enriched RTS beverage.

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