



E-ISSN: 2278-4136

P-ISSN: 2349-8234

www.phytojournal.com

JPP 2020; 9(2): 1162-1164

Received: 19-01-2020

Accepted: 21-02-2020

RJ Jadhao

Ph.D. Student Deptt. of Animal Husbandry and Dairy Science, PGI, Dr. PDKV, Akola, Maharashtra, India

SD Chavan

Professor & Head, Deptt of Animal Husbandry and Dairy Science, PGI, Dr. PDKV, Akola, Maharashtra, India

RR Shelke

Asstt. Prof. Section of Animal Husbandry and Dairy Science, College of Agri, Akola, Dr. PDKV, Akola, Maharashtra, India

SR Shergokar

Asstt. Prof. Deptt. of Animal Husbandry and Dairy Science, PGI, Dr. PDKV, Akola, Maharashtra, India

SS Mane

Prof. & Head Deptt. of Plant Pathology, PGI, Dr. PDKV, Akola, Maharashtra, India

RD Walke

Asso Prof. Deptt. of Agril Econ. and Statistics, College of Agri, Akola, Dr. PDKV, Akola, Maharashtra, India

SP Nage

Asstt. Prof. Deptt. of Animal Husbandry and Dairy Science, PGI, Dr. PDKV, Akola, Maharashtra, India

Corresponding Author:RJ Jadhao
Ph.D. Student Deptt. of Animal Husbandry and Dairy Science, PGI, Dr. PDKV, Akola, Maharashtra, India

Effect of assimilation of tulsi juice and turmeric powder on sensory quality of softy ice-cream

RJ Jadhao, SD Chavan, RR Shelke, SR Shergokar, SS Mane, RD Walke and SP Nage

Abstract

In present investigation Softy ice cream is prepared by blending 4% tulsi juice with different levels of turmeric powder 0, 0.2, 0.4, 0.6, 0.8 in T₁, T₂, T₃, T₄ & T₅ respectively. On the basis of sensory evaluation the average flavor score of the experimental samples were in the range (6.37) to (8.45). The average color and appearance scores reveal that highest score for color and appearance was recorded for treatment T₃ (8.20) followed by T₁ (8.16), T₂ (7.28), T₄ (6.70.) and T₅ (6.12), respectively. The highest score for body and texture was recorded in treatment T₃ (7.62) followed by T₁ (7.33), T₂ (6.87), T₄ (6.28) and T₅ (6.08), respectively. The highest score for taste was recorded in treatment T₃ (8.53) and lowest score was recorded in T₅ (6.16), besides taste score (8.33), (7.74) and (7.24) was noted for treatment T₁, T₂ and T₄, respectively. The highest score for overall acceptability (8.37) was recorded for treatment T₃, while the least score (6.03) was noted for treatment T₅ on 9 point hedonic scale.

Keywords: Flavor, color & appearance, body & texture

Introduction

Indian ice cream industry is one of the fastest growing segments of the dairy or food processing industry. India has a low per capita ice cream consumption of 400 ml as compared with per capita consumption of ice cream of 22 L in the United States and 3 L in China. With the improving cold chain infrastructure in the country coupled with increasing disposable income and the changing lifestyle, the sector has great potential for growth (Anonymous 2018 b).

The ice cream industry in India generated revenue of about USD 1.5 billion in 2016 and is projected to generate revenue of approximately USD 3.4 billion by 2021. Lately, frozen desserts which are made out of vegetable oils have been eating into the market share of ice cream. Key players offering frozen desserts in India are Kwaliti Walls, Vadilal, and Cream Bell.

Methodology**Preparation of Softy Ice-Cream****Step - I**

Acceptable level of Tulsi juice was evaluated first (as 0%, 2%, 4%, 6%, 8% blends) by sensory evaluation of softy Ice-cream and it was found that 4% Tulsi juice blended softy Ice-cream was separate, accordingly 4% level of Tulsi juice blend was used as base for further studies of Turmeric powder blends.

Step - II

Acceptable level of Tulsi juice blend was used as base to evaluate the level of Turmeric powder (as 0.0%, 0.2%, 0.4%, 0.6%, 0.8% blends) by sensory evaluation in softy Ice-cream as mention below.

Result and Discussion**Table 1:** Sensory evaluation of softy ice-cream

Treatment	Flavor	Color & Appearance	Body & Texture	Taste	Overall Acceptability
T1	8.24	8.16	7.33	8.33	8.20
T2	7.58	7.28	6.87	7.74	7.70
T3	8.45	8.20	7.62	8.53	8.37
T4	7.45	6.70	6.28	7.24	6.95
T5	6.37	6.12	6.08	6.16	6.03
F- test	Significant	Significant	Significant	Significant	Significant
S.E. (m) ±	0.12	0.09	0.13	0.09	0.08
C.D. at 5%	0.38	0.29	0.40	0.30	0.26

The average Flavor score of the experimental samples were in the range (6.37) to (8.45). Highest score (8.45) was recorded for treatment T₃ and least score (6.37) was noticed for treatment T₅, treatment T₂ and T₄ had intermediate score viz., (7.58) and (7.45) respectively. Treatments namely T₃ is followed by treatment T₁, T₂, T₄ and T₅ with an average flavor score of (8.45), (8.24), (7.58), (7.45) and (6.37), respectively. The results were supported with those reported by Karkhele *et al.* (2003) [6] with addition of ginger juice in ice cream. These observations support the trend of their results. The intensity of aroma and pungency of ice cream is optionally blended at 4% level of ginger juice addition. Deshmukh *et al.* (2010) [3] conducted experiment with 4 treatments viz. T₀- ice cream mix without the addition of karonda pulp (control), T₁- ice cream mix containing karonda pulp @ 10%, T₂- ice cream mix containing karonda pulp @ 20%, T₃- ice cream mix containing karonda pulp @ 30% and reported that the flavour score for treatment T₀, T₁, T₂ and T₃ was 7.02, 7.26, 7.45 and 7.24, respectively.

The average color and appearance scores indicated in Table 1 revealed that highest score for color and appearance is recorded in treatment (T₃) i.e. softy ice cream prepared with 4% Tulsi juice and 0.4% Turmeric powder (8.20) followed by T₁(8.16), T₂ (7.28), T₄ (6.70) and T₅ (6.12). Though there was a difference in color scores was noticed, the differences were statistically non distinguishable ($P>0.05$). The average range of color and appearance scores was between 6.12 to 8.20 it means softy Ice-cream prepared with T₃- 4% Tulsi juice and 0.4% Turmeric powder is found to be superior with 8.20 score and T₅- 4% Tulsi juice and 0.8% Turmeric powder secured lowest score i.e. (6.12) for color and appearance for softy Ice-cream it is suppose from the present investigation that the extreme and lowest level of Turmeric powder is detrimental as far as color and appearance is concern while intermediate level of Turmeric powder improves the color and appearance attribute. The results were supported with those reported by Gaikwad (2007) [4] Who found that incorporation of 10% mango pulp was superior in color and appearance over plain ice cream. . Patil (2010) observed, that score for color and appearance was (11.20), (13.55), (15.63), (11.66) and (8.50) for ice cream samples prepared under treatments T₁, T₂, T₃, T₄ and T₅, respectively.

The perusal of Table 1 indicated that highest score for body and texture is recorded in treatment (T₃) i.e. softy ice cream prepared with 4% Tulsi juice and 0.4% Turmeric powder (7.62) followed by T₁ (7.33), T₂ (6.87), T₄ (6.28) and T₅ (6.08), respectively. It means that the addition of 0.4% Turmeric powder in the softy ice-cream prepared with 4% Tulsi juice secured max. Score over the rest samples of softy ice-cream, while the lowest score (6.08) is noticed in treatment T₅ i.e. the sample prepared with 4% Tulsi juice and 0.8% Turmeric powder. Treatment T₁ i.e. Control scored (7.33) which was next highest to the highest score similarly treatment T₂ i.e. Softy ice cream prepared with 4% Tulsi juice and 0.2% Turmeric powder and T₄ i.e. softy ice cream prepared with 4% Tulsi juice and 0.6% Turmeric powder Scored (6.87) and (6.28), respectively and remains intermediate position. Suneeta Pinto *et al.* (2010) [8] also observed that ice cream prepared with 4% of Ginger juice level was superior over all other treatment for body and texture. Hanifsha (2016) [5] noticed that the average score for body and texture of finished product in between (7.91) to (8.80) the ice cream prepared in treatment T₄ (6% lemon grass extract) secure max. Score (8.80) followed by T₁ (8.72), T₃ (8.60), T₂ (8.48) and T₅ (7.91), respectively

It is seen from table 1 that the highest score for taste is recorded in treatment T₃ (8.53) i.e. softy ice cream prepared with 4% Tulsi juice and 0.4% turmeric powder and lowest score was noticed in treatment T₅ (6.16) i.e. softy ice cream prepared with 4% Tulsi juice and 0.8% Turmeric powder. Besides score (8.33), (7.74) and (7.24) was found in treatment T₁, T₂ and T₄, respectively. The score for taste varies significantly amongst the treatments. It means that blending of 0.4% Turmeric powder improves the taste significance whereas, the blending of Turmeric powder below or more above 0.4% Turmeric powder had an detrimental effects on taste attributes. Dere (2012) [2] who reported that Ice cream prepared from 0.6% Turmeric powder obtained max. Score for its acceptability in context to taste of the ice cream. He also reported that ice cream in treatment T₄ scored max. Score (8.80) followed by T₅ (8.63), T₃ (8.50), T₂ (8.24) and T₁ (8.10).

From table 1 it is revealed that overall acceptability of softy ice cream on 9 point Hedonic scale noticed that the highest score for overall acceptability (8.37) was recorded in treatment (T₃) i.e. softy ice cream prepared with 4% Tulsi juice and 0.4% Turmeric powder by the panel of judges while the lowest score (6.03) was secured in treatment T₅ i.e. softy ice cream prepared with 4% Tulsi juice and 0.8% Turmeric powder. Similarly treatment T₂- softy ice-cream prepared with 4% Tulsi juice and 0.2% Turmeric powder secured score (7.70), treatment T₄- softy ice-cream prepared with 4% Tulsi juice and 0.6% Turmeric powder secured score (6.95) and treatment T₁- i.e. (control) score (8.20) for overall acceptability, respectively. Trivedi (2014) the average total scores of the experimental samples were in the range 84.95 (J₀) to 91.73 (J₃). It can be seen that J₃ maintained its superiority over all other samples in relation to flavor. The color changes were not found to have any hitch on the acceptability of J₃ compared to others. On the other hand, the body and texture and melting quality score tended to decrease with increase in level of incorporation of basil juice in ice cream. However, it can be seen from the total score from the table and figure that J₃ had significantly ($P>0.05$) higher score than all other experimental samples. On the basis of average total score values the ice cream containing basil juice at the level of 6% (J₃) was preferred the most. The order of preference was in the order of $J_3 > J_2 > J_1 > J_4 > J_0$.

Conclusions

On the basis of data obtained in present investigation of sensory evaluation of softy ice cream prepared from blending of 4% Tulsi juice and different levels of Turmeric powder, it was found that softy ice cream on the basis of flavour, colour and appearance, body and texture, taste and overall acceptability in (T₃) i.e. Softy ice cream prepared with 4% Tulsi juice and 0.4% Turmeric powder blending was found superior.

References

1. Anonymous b. A study of India's ice-cream market, 2018.
2. Dere VD. Effect of different levels of turmeric on the quality of softy ice-cream. M.Sc. (Agri.) Thesis (unpub.) Submitted to Dr. PDKV, Akola, 2012.
3. Deshmukh AR, Gaikwad RP, Adangale SB, Deokar DK. Study of the sensory quality and determine the optimum level of Karonda pulp for ice-cream preparation. RJAHADS, 2010; 1(2):55-57.

4. Gaikwad NB. Effect of different levels of mango pulp on the quality of ice-cream. M.Sc. (Agri.) Thesis (unpub.) Submitted to Dr. PDKV, Akola, 2007.
5. Hanifsha R. Preparation of softy Ice cream blended with lemon grass (*Cymbopogon citratus*) Extract. M.Sc. (Agri.) Thesis (unpub.) Submitted to Dr. PDKV, Akola, 2016.
6. Karkhele PD. Studies of some freezing and thermal properties of ginger ice Cream. M.Tech. thesis submitted to IGKVV. Raipur. (C.G.), 2003.
7. Patil SR. Effect of different level of papaya pulp on quality of ice-cream. M.Sc. (Agri.) Thesis (unpub.) Submitted to Dr. PDKV, Akola, 2010.
8. Suneeta Pinto. Used ginger shreds as flavouring in ice-cream at Anand Agriculture University, Anand (Gujarat), 2010.
9. Trivedi VB, Prajapati JP, Pinto SV, Darji VB. Use of Basil (Tulsi) as flavoring ingredient in the manufacture of Ice-cream. AIJCSR. 2014; 1(3):28-43.