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# Effect of assimilation of Tulsi juice and turmeric powder on physico-chemical quality of softy ice-cream

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#### 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. It was observed that the fat and titratable acidity was decrease while total solid, protein and melting period increased. It is seen that average fat content of softy ice-cream in treatment T1, T2, T3, T4 & T5 were 10.47, 10.37, 9.98, 9.94 & 9.90 respectively. Similarly Total solid content were 37.48, 37.55, 37.87, 38.04, 38.19 in T1, T2, T3, T4, T5 respectively. Protein content were 3.89, 3.91, 3.92, 4.01, 4.02 and titratable acidity were 0.202, 0.198, 0.196, 0.194, 0.193 in T1, T2, T3, T4, T5, respectively. The melting period in T1, T2, T3, T4 & T5 were 31.77, 32.44, 32.79, 33.17, 33.85.

**Keywords:** Fat, protein, titratable acidity, melting period

#### Introduction

Ice cream has been appreciated in the western world since the 13th century, when Marco Polo returned from the Far East Asia with water ice recipes. Over time, these water ices have evolved into today's popular frozen desserts (Marshall *et al.*, 2003; Quinzio, 2009) [8, 10].

Ice cream earlier was considered as a luxury food product, however with changing time taste and preference of consumers changed, which propelled growth in India ice cream market over the past few years. Moreover, growing demand for natural and traditional flavored ice cream, coupled with increasing penetration of international brands, improvement in cold chain infrastructure and rapid urbanization to drive India ice cream market during the forecast period.”, said Mr. Karan Chechi, Research Director with TechSci Research, a research based global management consulting firm (Anonymous, 2018) [2].

#### 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 evaluated 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:** Physico-chemical analysis of softy ice-cream

Treatment	Fat	Total solid	Protein	Titrateable acidity	Melting period (min.)
T1	10.47	37.48	3.89	0.202	31.77
T2	10.37	37.55	3.91	0.198	32.44
T3	9.98	37.87	3.92	0.196	32.79
T4	9.94	38.04	4.01	0.194	33.17
T5	9.90	38.19	4.02	0.193	33.85
F- test	Sig.	Sig.	Sig.	Sig.	Sig.
S.E. (m) ±	0.10	0.05	0.03	0.002	0.31
C.D. at 5%	0.33	0.16	0.09	0.006	0.97

It is seen from table 1 that average fat content of softy ice-cream in treatments T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub> and T<sub>5</sub> were (10.47), (10.37), (9.98), (9.94) and (9.90), respectively. The highest average fat content of the softy ice-cream i.e. (10.47) *per cent* was observed in treatment T<sub>1</sub>- (control) and lowest average fat percentage (9.90) was observed in treatment T<sub>5</sub>- i.e. Softy ice cream prepared with 4% of Tulsi juice and 0.8% of Turmeric powder. Trivedi (2014), Ghodekar (2015) & Agrawal *et al.* (2016)<sup>[12, 5, 1]</sup> reported similar trend in agreement with present study.

The total solids amongst different treatments ranged between (37.48) to (38.19), the highest total solid content (38.19) is observed in treatment T<sub>5</sub> i.e. the softy ice cream prepared with 4% Tulsi juice and 0.8% level of Turmeric powder followed by T<sub>4</sub> i.e. (38.04), T<sub>3</sub> (37.87), T<sub>2</sub> (37.55) and T<sub>1</sub> (37.48) *per cent*, respectively. Trivedi (2014), Ghodekar (2015) & Hanifsha (2016)<sup>[12, 5, 6]</sup>, reported similar results.

With reference to protein content is observed that the highest content is noticed in treatment T<sub>5</sub>- (4.02) and lowest (3.89) was found in T<sub>1</sub>. Whereas treatment T<sub>4</sub>, T<sub>3</sub> and T<sub>2</sub> secured (4.01), (3.92) and (3.91) *per cent* protein content respectively. Trivedi (2014), Ghodekar (2015)<sup>[12, 5]</sup> reported supportive trends.

The perusal of table 1 indicated that the average acidity content of softy ice-cream in treatments T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub> and T<sub>5</sub> were (0.202), (0.198), (0.196), (0.194) and (0.193), respectively. Dere (2012), Bodade (2013), Trivedi (2014)<sup>[4, 3, 12]</sup> reported similar results.

It is observed from the table 1 that there was significant increase in melt down duration values from (31.77 min.) in treatment T<sub>1</sub> to (33.85 min.) in treatment T<sub>5</sub>. Treatment T<sub>5</sub> required maximum time for the melting of softy ice cream (33.85 min.) followed by T<sub>4</sub> (33.17 min.), T<sub>3</sub> (32.79 min.), T<sub>2</sub> (32.44 min.) and T<sub>1</sub> (31.77 min.). But statistically the influence over melting period of ice cream was found significant in T<sub>4</sub> and T<sub>5</sub> while T<sub>2</sub> and T<sub>3</sub> was at par as compare to control i.e. T<sub>1</sub>. The reason behind increasing melt down period may be due to increase in the addition of turmeric powder level. Khade (2010), Suneeta pinto *et al.* (2010), Pawar (2011), Dere (2012)<sup>[7, 4]</sup>. Are in agreement with present study.

## Conclusions

On the basis of data obtained for Physico-chemical quality in present investigation of softy ice cream prepared from blending of 4% Tulsi juice and different levels of Turmeric powder, it was observed that fat and titrateable acidity was decreased while total solids, protein, melting period increased.

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