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Quality and sensory evaluation of value added gatta instant mix.

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ABSTRACT

Value added gatta instant mix was standardized and analyzed for their organoleptic characteristics and shelf-life study. Value added gatta instant mix was prepared by using germinated moth bean and β -carotene rich vegetables. Among the pulses, moth bean (*Vigna aconitifolia*) is the most consuming pulse for the people living in harsh environment of arid and semi- arid zones. The mean scores for sensory evaluation of developed value added gatta instant mix was 8.4 on nine point Hedonic ranking scale. Fat acidity and free fatty acid also revealed satisfactory quality of the gatta instant mix at the end of three months storage period. Thus, better quality of value added gatta instant mix brings considerable advantages among the arid region.

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Key words : Instant food, Value addition, Sensory evaluation

INTRODUCTION

Unlike olden days, where man used to have his food lavishly and slowly, the present trend changed the habits to foods which are simple and easy to digest. Due to fast changing trend of urbanization and modernization every consumer always remains in hurry. There has been quest for finding out ways and means to reduce time required for most of the drudgeries. This lead to the genesis of instant foods (Sharma, 2005). India has been the home for ageless culinary art, having a rich heritage of a wide variety of traditional preparations. A large number of grain based traditional foods like *vada*, *dosa*, *idli*, *khaman*, *pakoda*, *mathri* etc. have been processed and their instant mixes have been developed, which are gaining popularity but all these mixes are prepared using refined cereals and pulses which are deficient in essential nutrients, which may lead to various deficiency diseases (<http://www.answer.com>).

These problems can be reduced by value addition of processed foods such as addition of fruits, vegetables, whole cereals, pulses and using germination and fermentation process. Among the pulses, moth bean (*Vigna aconitifolia*), the most consuming pulse for the people living in harsh environment of arid and semi- arid

zones. However, it contains many antinutritional factors and these can be removed by processing of bean such as soaking and germination. The germination of pulses increases its nutritional contents. The germinated pulses have high vitamin C content, other vitamins and folic acid. On the other hand, vegetables and fruits contain various important functional nutrients such as vitamin C, vitamin E, vitamin K and β -carotene. The health problems arises due to use of processed foods and scanty work has been done in this field also. Therefore, investigation was planned to develop spread instant mix using β -carotene rich vegetables and germinated moth bean.

MATERIALS AND METHODS

Development of raw materials:

The soaked moth bean was germinated in shade dried and ground for development of powder. On the other hand, curry leaves, coriander leaves and sliced carrot were dried and ground for powder.

Development of instant mixes:

Most acceptable powders *i.e.* oven dried curry leaves, oven dried coriander leaves and blanched oven dried carrots were incorporated into germinated moth bean

powder.

Organoleptic evaluation:

The Developed gatta instant mix was standardized using organoleptic evaluation technique with the help of semi-trained panel members using 9-point Hedonic ranking scale. (Swaminathan, 1987).

Storage study:

The storage of any product determines its wholesomeness during the definite period of time. Therefore, the quality of developed instant mix was evaluated for storage of 90 days on the basis of organoleptic evaluation, fat acidity and free fatty acid (AOAC, 1995).

RESULTS AND DISCUSSION

The results obtained from the present investigation as well as well as relevant discussion have been presented under following heads :

Organoleptic evaluation:

Three types of Gatta instant mixes (G_1 , G_2 , and G_3) were developed in laboratory by making variation in the amount of vegetables *i.e.* curry leaves, coriander leaves and carrots and germinated moth bean powder used for value addition. To find out the acceptability, each type of instant mix was served to the panel members for sensory evaluation. Gatta prepared by addition of carrots were not acceptable on the basis of sensory attributes. Finally,

Gatta were prepared by using curry leaves and coriander leaves.

Table 1 clearly unfurrows the difference in the scores of sensory characteristics of instant mixes G_1 , G_2 , G_3 due to variation in their proportion *i.e.* 80:20, 85:15 and 90:10, respectively. Result showed that instant mixes G_3 was found to be more acceptable than G_1 , G_2 due its appealing flavour and attractive colour. The typical vegetable flavour was dominant in instant mixes G_1 and G_2 and was not acceptable by most of the panel members. The mean scores for colour, appearance, aroma, texture, taste and overall acceptability of instant mix G_1 were 3.2, 3.4, 2.7, 3.5, 3.1 and 3.2, respectively and scores obtained by instant mix G_2 were in the range of 4.8 to 5.2. Therefore, instant mix G_1 and G_2 were “disliked moderately” to “disliked slightly” by the panelists. On the other hand, instant mix G_3 secured highest scores for colour, appearance, aroma, texture, taste and overall acceptability with scores of 8.2, 8.1, 8.3, 8.4, 8.1 and 8.2, respectively. Hence “liked very much” by the judges.

Shelf-life evaluation of the instant mix:

Shelf-life of any product indicates its potential for being stored for a definite period of time without any deteriorating effects on its quality parameters. Gatta instant mix was packed in 200 gauge polythene and stored at room temperature. Under the present study, shelf-life of the developed instant mix was judged on the basis of their sensory characteristics, free fatty acid and fat acidity after each 15 days interval during the storage period of 90 days.

Table 1 : Organoleptic acceptability of developed gatta instant mix

Sr. No.	Developed Gatta	Mean scores of sensory characteristics on nine point hedonic scale					
		Colour	Appearance	Aroma	Texture	Taste	Overall
1.	G_1 (20%)	3.2±0.928	3.4±0.967	2.7±0.823	3.5±0.523	3.1±0.348	3.2±0.546
2.	G_2 (15%)	5.2±0.341	4.8±0.576	5.0±0.671	4.9±0.234	5.0±0.556	5.2±0.786
3.	G_3 (10%)	8.2±0.788	8.1±0.875	8.3±0.823	8.4±0.843	8.1±0.546	8.2±0.766

Values are mean ±SD of ten panelists

Table 2: Organoleptic acceptability of gatta instant mix during storage

Sr. No.	Storage period (days)	Mean scores of sensory characteristics on nine point hedonic scale					
		Colour	Appearance	Aroma	Texture	Taste	Overall
1.	0	8.2±0.79	8.1±0.27	8.3±0.12	8.4±0.13	8.2±0.11	8.2±0.72
2.	15	8.2±0.62	8.0±0.63	8.2±0.91	8.4±0.10	8.0±0.13	8.1±0.82
3.	30	8.2±0.77	8.0±0.42	8.2±0.23	8.3±0.73	8.0±0.42	8.0±0.32
4.	45	8.1±0.54	7.9±0.52	8.1±0.57	8.3±0.63	8.0±0.32	7.0±0.63
5.	60	8.0±0.45	7.9±0.433	8.0±0.622	8.2±0.822	7.9±0.11	7.9±0.43
6.	75	7.8±0.67	7.8±0.46	7.8±0.82	8.1±0.62	7.9±0.01	7.8±0.52
7.	90	7.8±0.62	7.8±0.82	7.8±0.97	7.8±0.54	7.8±0.32	7.8±0.81
8.	F value	NS	NS	NS	NS	NS	NS

Values are mean ± SD of ten panelists

NS = Non-significant

Organoleptic acceptability of gatta instant mix:

Organoleptic evaluation of gatta instant mix indicates that the mean overall acceptability scores on nine-point hedonic ranking scale obtained 8.2, 8.1, 8.0, 7.0, 7.9, 7.9 and 7.8 on 0, 15, 30, 45, 60, 75 and 90 days. Analysis of data at 1 per cent level determined the difference due to storage was non-significant, indicating that the sensory quality of the product remained unaffected up to 90 days of storage period (Table 2).

Fat acidity and free fatty acid contents of stored gatta instant mix:

Gatta instant mix had 0.05mg KOH/100 gm fat acidity and 0.3 mg/100g fat as oleic acid for free fatty acid on 0 day. Fat acidity contents of gatta instant mix ranged from 0.02, 0.4, 0.7, 1.50, 2.0 and 3.0 mg KOH/100gm on 15, 30, 45, 60, 75 and 90 days of storage intervals (Table 3). Similarly, free fatty acid contents ranged from 0.3-2.1mg/

Table 3 : Effect of storage on fat acidity (mg KOH/100 g) and Free fatty acids (mg /100 g fat) content of stored gatta instant mix (on dry weight basis)

Storage period (Days)	Fat acidity (mg KOH/100 g)	Free fatty acids (mg /100 g fat)
0	0.05± 0.17	0.3± 0.23
15	0.2± 0.62	0.7± 0.62
30	0.4± 0.43	0.9± 0.71
45	0.7± 0.63	1.2± 0.23
60	1.5± 0.42	1.6± 0.13
75	2.0± 0.04	1.8± 0.56
90	3.0± 0.45	2.1± 0.13
Increase in value at 90 days	3.01	1.8

Values are mean ±SD of three replicates
 * and ** indicate significance of values at P=0.01 and 0.05, respectively

100g fat. Data reveal that with increase in storage period, fat acidity and free fatty acid were found to be non-significantly increased.

Conclusion:

It can be inferred that the developed value added gatta instant mix was highly acceptable by panel members and safe for consumption up to 3 months of storage period. Therefore, results suggest that there is a great scope of value added gatta instant mix for entrepreneurial sector.

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