

Original Research Article

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## Farm Based Processing of Ginger Products and Perception of Small Vendors for Commercialization

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### ABSTRACT

Small vendors play very important role in urban India by providing the products related to routine life. Through this way these small vendors helps in generating income to them as well as the producers of these products. Hence for product commercialization, perception about the product of these small vendors plays also important. Keeping this thing in view a survey was conducted among small vendors to know the perception in commercialization of these products. The study was carried out among small vendors at Udham Singh Nagar, Uttarakhand. Selection of respondent was done on the basis of the willingness of vendors to be part of the study and feasibility of the researcher. Total 38 small vendors were surveyed and it was observed that organoleptically both the products were acceptable. As per the results of organoleptical assessment it was found that 76.38 per cent of respondents were liked ginger sherbet where as ginger candy was liked by 81.69 per cent of respondents. It was also observed that 81.58 per cent 84.21 per cent were agree to keep the ginger sherbet and ginger candy with other products for sell, however 84 per cent of vendors were did not like to prepare and sell both the products due to various reason. Study also revile that small vendors were not open to accept new product for preparing and sell.

#### Keywords

Ginger (*Zingiber officinale* Rose.),  
Organoleptical

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### Introduction

Ginger (*Zingiber officinale* Rose.) is an important commercial spices crop in tropical and subtropical region (Ambia, 2006 and Rahim 1992). The rhizome is used worldwide as spices for flavouring in a number of foods and food-products and also used in medicine. Ginger used in traditional medicine, has been found to possess antioxidant effect that can

control the generation of free radicals (Ahmad, *et al.*, 2006). The main bioactive components of ginger possess antioxidant, anticancer, and anti-inflammatory attributes (Malu, *et al.*, 2009 and Ghasemzadeh, 2010).

It is effective for the treatment of inflammation, rheumatism, cold, heat cramps, and diabetes (Al-Amin, *et al.*, 2006 and Afshari, *et al.*, 2007). Several studies suggest

that ginger may work better than placebo in reducing some symptoms of motion sickness.

Fresh ginger is seasonal, perishable in nature and available in large quantities during the peak season in the local market. After harvesting it cannot be kept for longer period due to higher water activity and during storage it suffer from weight loss, shrinkage, rotting and sprouting. Due to lack of processing and value addition practice in ginger, during harvesting season, a huge quantity of fresh produce becomes unmarketable (Nath *et al.*, 2013). Ginger is normally stored in pit but within few days sprout and roots are found. For export the minimum rhizome size is 250 g whereas there is no maximum size limit. A large rhizome with limited branching is requiring as per the market demand. Rhizomes having more than 4 side branches should not preferred for export. The main stem of 3 cm (1.25 in) thick and 12 cm (5 in) long is preferred. Export quality ginger should be smooth and firm, having tight and light brown skin with uniform shape and size, be free from insect damage and decay (Bag. 2018).

More than 50% of total ginger production takes place in North East, Uttarakhand and Sikkim states (<http://agriexchange.apeda.gov.in/Market%20Profile/one/GINGER.aspx>). In Uttarakhand region small farmers grow ginger in fewer amounts for household consumption. Production of such ginger is very less ranged between 50 to 100 kg. Such amount of ginger is not enough to carry for sell in market but it is more than enough for household consumption.

In the era of globalization, the retail sector is the fast growing emerging sector after agriculture. Small retailing including street vending has been one of the easiest ways to sell the new products. Street vendors are providing the market for home-based manufacturing product especially processed

agricultural products. In this way, street vendors help sustain employment in these home-based, small-scale industries and traditional sector. Besides the employment context, street vendors also support urban rich and urban poor. Street vendors prop up urban rich to provide daily requirements as available on their doorsteps because some street vendors built up their profession in front of housing complexes. These small vendors plays key role in commercialization of new products and hence perception of these small vendors is important.

Keeping all this in view the present study was conducted to know the perception of ginger based products among small vendors and for commercialisation these products.

## **Materials and Methods**

### **Procurement of raw material and product formulation**

Fresh ginger and other material were procured from raw material from the local market. Fresh ginger was used for product development. It was selected and collected according to their uniform size, freshness and cleanliness (free from dirt, twigs, soil, dust). The gingers were then washed to clean the dirt and washed gingers were peeled to remove outer layer. Peeling was done and time utilized and weight of peel was recorded. Ginger was cut into around 1 to 3 cm pieces.

### **Commercialization and perception of small vendors**

The survey study was conducted among small vendors at Udham Singh Nagar, Uttarakhand. Selection of respondent was done on the basis of the willingness of vendors to be part of the study as well as feasibility of the researcher. Structured questioner was prepared to assess awareness, acceptance and willingness of

shopkeepers' to sell ginger products. Total 38 small vendors were surveyed. Packed ginger sherbet and ginger candy was shown to small vendor. Ginger products were given to small vendors for organoleptic acceptability and perception of the small vendors about the products.

### **Cost evaluation of the ginger products**

This was done to evaluate the net profit to the small farmers.

## **Results and Discussion**

### **Product formulation**

Ginger Sherbet and candy was developed in the laboratory to standardise the product. For this the different permutation combination were used in preparation of the proposed and sensory evaluation was done. Sensory evaluation of the product was done by semi trained panel members. Ginger sherbet and candy was prepared by using standardized procedure and packed in 200 ml bottles and 50 grams for candy.

### **Commercialization and perception of small vendors**

Over all acceptability of the product by the small vendors is presented under the table 1. The overall acceptability of Ginger sherbet was liked maximum i.e. liked extremely (28.95 percent) followed by liked moderately. Results of organoleptic evaluation indicate that 76.32 per cent of the small vendors liked ginger sherbet. Total 81.58 per cent of the respondent liked ginger candy. Small vendors said that such kind of ginger products were new for them. The reason of not liking the product was that these vendors personally did not like ginger flavour and believed that this product could sell in winter only.

The total 81.58 per cent and 84.21 per cent of small vendors were wanted to sell the prepared ginger sherbet and candy respectively (Figure 1). More per cent of small vendors were wanted to sell ginger candy as it doesn't need further preparation. For sherbet it has to dilute further either in cold or hot water.

Maximum number (i.e. 84 per cent) of small vendors were did not like to prepare and sell both the products. Reason for not preparing and selling the product was majorly time constrain or other work (84.38 per cent). Other works were included house hold work, animal rearing etc. However 9.38 per cent of the shopkeepers were satisfied with present work. These vendors were selling different products such as *golgappas*, *tikki* and noodles etc. These vendors informed that *golgappas*, *tikki* and noodles etc are very much know and highly acceptable to the consumers. This was also observed that the small vendors were more concern about the acceptability of the products among other consumer as these products were new in market.

Soam and Hussain (2011) conducted a survey in 25 states of India identified promising indigenous drinks. Manufacturing procedures of these drinks was community traditional knowledge. Product acceptability by the retailers and consumers was high, hence companies would be willing to invest in such products. One of the important issues to be addressed is benefit sharing with traditional knowledge holders and alleviation of their socio-economic condition.

### **Cost evaluation of the ginger products**

Cost assumption by small vendors was also recorded. Primarily vendors said that the cost has to be calculated on the basis of inputs used in product formulation. Ready to serve (RTS) ginger sherbet could be sold at 15 to 35 Rs/ 200 ml of glass bottle.

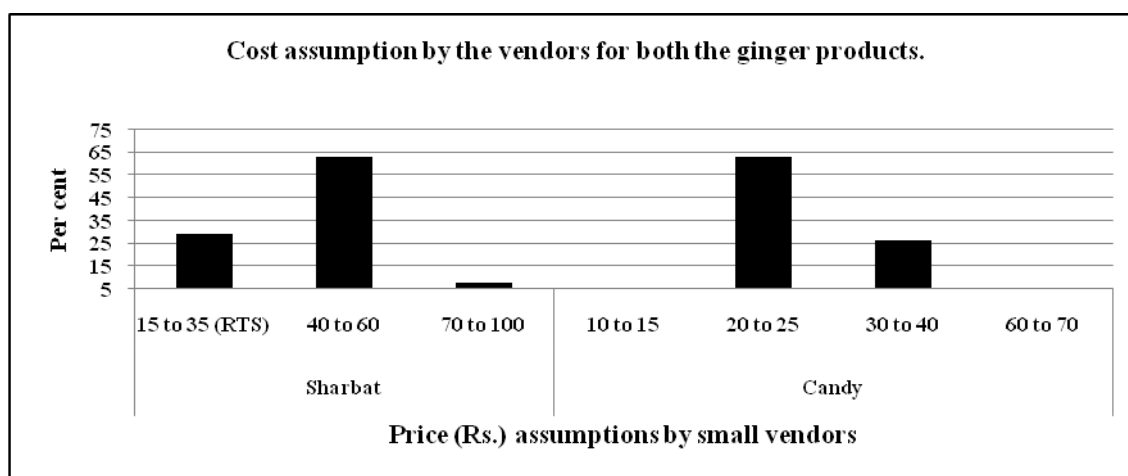
**Table.1** Over all organoleptic score of ginger sherbet and ginger candy

Sensory Scores	Sherbet, n (%)	Candy, n (%)
4(Dislike moderately)	1 (2.63 %)	1 (2.63 %)
5 (Dislike slightly)	2 (5.26 %)	3 (7.89 %)
6 (Neither like nor dislike)	6 (15.79 %)	3 (7.89 %)
7 (Like slightly)	4 (10.53 %)	7 (18.42 %)
8 (liked moderately)	9 (23.68 %)	10 (26.32 %)
9 (Like very much)	5 (13.16 %)	7 (18.42 %)
10 (liked extremely)	11 (28.95 %)	7 (18.42 %)

**Table.2** Cost production of ginger sherbet and candy

Parameters	Details for sherbet	Details for candy
Assumption	25 working days in a month and one shift of 8 hours/day.	25 working days in a month and one shift of 8 hours/day.
Cost of raw material	Rs. 64,500/-	Rs. 3,000/-
Salaries/ wages of worker per month	Rs. 10,000/- (5,000 per person & 2 persons will be required)	Rs. 5,000/- (5,000 per person & 1 persons will be required)
Total Production	875 liters (packed in 200ml/bottle)	400 (packed in 50gm/ Packet)
Total Cost	Rs. 74,500/-	Rs. 8,000/-
Total turnover/ month	Rs. 1,49,000/-	Rs. 16,000/-
Net Profit per month	Rs. 74,500/-	Rs. 16,000/-

**Fig.1** Cost estimated by the vendors for both the ginger products



For 200 ml of sherbet cost estimated by vendors was ranged between 40 to 60 Rs/ bottle (Fig. 1). However in market different squash and sherbet are available in the packaging of 750 ml and the cost range

between Rs 120 to 170. Cost of various popular brands of carbonated drinks were ranged between Rs. 90/ 2.25 liters to Rs. 30/600ml. These carbonated drinks are not good for health. Now a days customer are

more conscious for health and willing to consume healthy foods

Formulation of ginger sherbet and candy was evaluated for techno-economic aspects. Expenditure on different parameter for the formulation of ginger sherbet and candy is given in the table 2. Machinery cost is not included as in making ginger sherbet and candy as its processing does not require any different kind of equipment.

Capital investment in production and marketing of different processed food products is highest in building followed by machinery and equipments and land at an overall level of the units. There are various other variable factors such as size of land, type of machinery required for the processing of the food product (Singh, 2013; Paila 2009; Nagesh 1990). In production of any product, the total capital invested is directly related to the size of profit (Venkateshiah, 1992).

In present study the cost of hand operated business was calculated and present in table 2. For ginger sherbet one mixer grinder is required to extract juice from the ginger. In general this equipment is available at household level. However one another equipment is required i.e. cap crowning machine, for crowning of the ginger sherbet bottles. This equipment was made available to the producer at the time of packaging by the Department of food and nutrition, College of Home Science, GB Pant University of agriculture and technology.

In sherbet processing it was noticed that in one very small scale enterprise or nano scale processing unit will accommodate two persons for unit operation. For candy processing it was observed that single person will be required for the operation of preparation. Both the products manufacturing is 100 per cent profitable. Increment in production will

required the equipments for peeling and other processing activities. Providing employment opportunity to the people is the greatest task to the government. Therefore the people develop their entrepreneur skill to earn income for their livelihood. Street vending is one of the entrepreneurship, small in terms of capital and size and easy to start the business. Nonetheless, it is noticed that there has been a phenomenal increase in the number of street vendors leading to an increase in the number of workers in the informal sector in India and metro cities has witnessed for containing highest street vendors among all major cities in India. (Selvakumar *et al.*, 2014)

The products have a sufficient niche market since per capita fruit juice consumption in India is only 20 ml. Market demand is expected to increase from 27.4 to 64 billion rupees by 2020 with 8.9 per cent market growth, with 65 per cent market share restricted to South India. The study offers for indigenous drinks registration and business strategy with sustainable rural livelihood development (Soam and Hussain, 2011).

India contributes only 9.3% to the world total export of ginger. From which India has 50% share in the trade of oil and oleoresin. This indicates that ginger has strong potential for processing in the form of ginger sherbet and candy. The present study reveals that small vendors liked the product and it was believed by them that in winters the sell of this product would be very high. However these were not willing to participate in production but like to sell the products.

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