



Entrepreneurship development in rural area by processing of ginger

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Ginger an Indian spice: Many Indian spices play a significant role in food preparation and act as an important ingredient. Every spice has its own flavour and essence which helps in making that spice unique and thereby delicious dish. Apart from making food tasty, spices also come with notable nutritional values and provide some major health benefits. Spices have a traditional history of use, with strong roles in cultural heritage. Ginger (*Zingiber officinale* Rose.) is one of important commercial spice crop in tropical and subtropical region. The rhizome is used worldwide as spices for flavouring in a number of food-products and also used in medicine. Apart from being a spice in a recipe, ginger can be used as processed products such as ginger *Sherbet*, candy, pickle, etc. Ginger used in traditional medicine, has been found to possess antioxidant effect that can control the generation of free radicals. The main bioactive components of ginger possess antioxidant, anticancer, and anti-inflammatory attributes. It is effective for the treatment of inflammation, rheumatism, cold, heat cramps and diabetes. Several studies suggest that ginger may work better than placebo in reducing different health related issues.

Food processing skills an alternative of unemployment: Presently India is facing the problem of unemployment. Youth unemployment rate in India increased to 23.70 per cent in the fourth quarter of 2018 from 23.10 per cent in the third quarter of 2018. Youth

unemployment rate in India averaged 23.23 per cent from 2018 until 2018, reaching an all time high of 23.70 per cent in the fourth quarter of 2018 and a record low of 22.90 per cent in the second quarter of 2018 (<https://tradingeconomics.com/india/youth-unemployment-rate>).

Foods grown locally can provide a solution to the problem of food and nutritional security. For this it is necessary to provide training on skills related to primary and secondary processing of these foods. Such trainings would empower rural women and small farmers for development of value added products and ultimately leads to livelihood support for them. Through this tool, the problem of unemployment and food security would be addressed together. Besides this food processing enhances utilization of these crops, reduces transportation cost and post harvest loss due to

spoilage. Above all this act will help in dealing with nutritional security and at the same time local people will not migrate to other place for job searching. India is second largest country in terms of population. Here work force or manpower to work is available as well as consumers are also present. This is urgent need to link up both for production of the food as well as consumption of the processed foods. By doing so, lots of the problems could be resolved together.

Ginger based enterprise: 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. During storage ginger suffer from weight loss, shrinkage, rotting and sprouting. Due to lack of processing and value addition practices in ginger, after harvesting season, a huge quantity of fresh produce becomes unmarketable. More than 50 per cent of total ginger production takes place in North East, Uttarakhand and Sikkim states. In Uttarakhand region small farmers grow ginger in smaller amounts for household consumption. Production of such ginger is very less and ranged between 50 to 100 kg per household. Such amount of ginger is not enough to transport for sale in market from hilly tertian where transportation cost are high but it is more than enough for household consumption. It was observed that population of hills and near by area of Uttarakhand was consuming ginger throughout the year. Keeping all this in view the technology on ginger processing and product development was given to twenty farm women at Lamjala village, Bhimtal, Nainital.

Material required for processing: Processing material could be divided in two parts *i.e.* recurring goods such as ginger, citric acid, preservative (KMS), labels, packaging material etc. Non-recurring goods such cap crowning machines, stainless steel utensils, etc. These materials may vary according to the capacity of processing unit for example with increasing in processing capacity, one ginger washing and peeling machine could be purchased. Initially it is recommended to start work with least materials and equipments.

Development of ginger products: Ginger *Sherbet* was prepared and standardised at the Department of Foods and Nutrition, College of Home Science, GB Pant University of Agriculture and Technology, Pantnagar. Ginger pulp and peel was by products. Hence, dried ginger pulp was also preserved in dried form.

Technology provided: Standardised ginger *Sherbet* was given to the farm women to taste. Need assessment, novelty and perception to develop the product was done to achieve the maximum adoption for processing of ginger *Sherbet*. Ginger *Sherbet* was very much liked by the trainees. On the demand of farmers, one day method demonstration was given to the 20 farm women in collaboration with the KVK, Jeolikote. Farm women were inspired to make ginger *Sherbet*. Among these two farm women, *i.e.* Mrs. Durga Devi W/O Late Rajender Singh Jantwal and Mrs. Rama Devi W/O Kundan Singh Jantwal wanted to take intensive training to develop ginger *Sherbet*. Keeping this in view, two days intensive training was given to these farm women at the Department of Foods and Nutrition, College of Home Science, GB Pant University of Agriculture and Technology, Pantnagar. For development of ginger *Sherbet* mainly two equipments were required *i.e.* mixer grinder and other was cap crowning machine. These women had the mixer grinder, however, cap crowning machine was provided by the Department of Foods and Nutrition, College of Home Science. In beginning raw material was provided with the help of UGC's project "Agribusiness module of value added underutilized food products towards livelihood support of hill states". Initially 6 kg ginger was processed per day for *Sherbet* making. The profit could be increased by selling of dried ginger pulp also. This dried ginger pulp had a mild flavour hence, it may be utilized as ingredient in bakery products, ice-creams and other product preparation. In case of candy, 5 kg ginger was processed per week. Candy required more time as compared to *Sherbet*. Both the products were sold with the profit of more then 50 per cent. Table 1 shows the production cost calculation for ginger *Sherbet* and candy, respectively.

Impact of technology: The results depicts that processing of 6 kg ginger per day for 24 days working in a month is a

Table 1: Cost production of ginger sherbet and candy

Parameters	Details for <i>Sherbet</i>	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 and 2 persons will be required)	Rs. 5,000/- (5,000 per person and 1 persons will be required)
Total production	875 litters (packed in 200ml/bottle)	400 (packed in 50g/ 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/-



profitable household business. Adoption rate was 10 per cent of the technology. The profit margin may increase upto 100 per cent with increase in scale processing. This technology does not require specific equipments, hence, very much suitable to the farmers. Nainital is one of the most popular tourist city as well as its climatic condition is cold. In this climatic condition people like to take ginger *Sherbet* for both health and taste reason.

Conclusion: It could be concluded that processing of ginger is a profitable business for youth as well small scale ginger growers. Hence, the processing of ginger for *Sherbet* and candy making could be more viable and profitable business for the state like Uttarakhand. Consumption of ginger in cold area is higher than the rest of the parts in India.

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