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Omesh Thakur
 CoA & Res. St., IGKV,
 Gariaband, Chhattisgarh,
 India

Padmakshi Thakur
 S. G. CoA & Res. St., IGKV,
 Jagdalpur, Chhattisgarh, India

Standardization of various value added and processed product of bottle gourd

Omesh Thakur and Padmakshi Thakur

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Abstract

India produces maximum of the veggies due to its tropical weather zone. Concerning publish-harvest management, 25-40% of post-harvest losses arise in the course of diverse publish-harvest operations which include cleaning, grading, transportation, drying, storage, packaging, and so on. *Lagenaria siceraria*) is one of the crucial minor vegetable vegetation with substantial makes use of and fitness blessings. It is an important multi-purpose cucurbit crop grown for its leaves, culmination and seeds. It's far extensively cultivated and used for human consumption in India, providing important human nutrition and serving as a food protection crop. Bottle gourd is an underutilized fruit, no matter being one of the most inexpensive sources of nutrients and a capacity supply of natural antioxidants. The consumption of bottle shield juice/pulp is growing daily because of its health advantages. Postharvest losses of bottle gourd occur due to loss of appropriate packaging materials, unsuitable managing in the course of lengthy-distance delivery, and microbial spoilage. Bottle gourd fruits have a higher suitable for eating index and a lower waste index, which proves the significance of its processing.

Keywords: Bottle gourd, value addition

Introduction

Bottle gourd (*Lagenaria siceraria* L.) is frequently known as Lauki gourd or gourd, is a diploid cucurbit vegetable crop with $2n=22$ chromosomal wide variety. Local to Africa, it has successfully adapted to the distinctly various agro-ecosystems of India. it is one of the healthiest veggies from the cucurbit circle of relatives, which performs an critical position in human vitamins. Incorporates 96.1% moisture, zero.1% fats, zero. 5% minerals, 0.6% fiber, 2.5% carbohydrates, 12 kcal strength, zero. 7 mg/one hundred g iron, zero.03 mg/ one hundred g thiamine, 0.2 mg/one hundred g niacin and zero.00 flavingrib (1 mg/1 mg Srivastiva *et al.*, 2002) [6]. It is a good source of antioxidants and phenols. It also includes 10.10 mg/100 g of ascorbic acid, five eighty g/a hundred g of total sugar, five.22 g/100 g of reducing sugar and 1.31 g/a hundred g of starch (Milind and Satbir, 2011) [3]. Bottle gourd is a very wholesome and without difficulty available vegetable. It's miles historically used to help with many fitness situations consisting of fever, cough, ache and bronchial asthma. It's been used because historical times for its useful results. It's also taken into consideration an awesome source of diet B, C and different vitamins. The non-sour bottle gourd is used for meals (Sivaraj & Pandravada, 2005) [5]. Therefore, the training of these foods and drinks is in most cases confined to the household (Bhalla, 2007) [2]. Diverse products that can be advanced from bottle gourd fruit are pickles, chutneys, juice and chocolates (Walters *et al.*, 2004). Bottle gourd sweet is prepared by way of soaking cubes of bottle gourd in sugar syrup (Ahmad & Ahmad, 2021) [1]. A salt substitute combination and bottle gourd fruit also are used to create excessive fiber, low salt, low fats chook nuggets (Verma *et al.*, 2012) [7]. Bottle gourd halwa is one of the conventional Indian dairy products prepared from grated bottle gourd cooked with sugar, khoa, ghee and flavored with spices like cardamom.

It's far difficult to eat clean bottle gourd as a vegetable to attain the every day advocated requirement; consequently, it must be converted into RTS, nectar, beverages, pickle, kofta and other merchandise to be available as wanted. Bottle gourd fruit has a better fit to be eaten index and a lower waste index, proving its significance for processing.

Corresponding Author:
Omesh Thakur
 CoA & Res. St., IGKV,
 Gariaband, Chhattisgarh,
 India

Materials and Methods

The present experiment was conducted during the year 2021-22 at Horticulture laboratory of College of Agriculture, IGKV, Gariaband, C.G. Freshly harvested bottle gourds were taken and used for preparation of various value added and processed product like nuggets, paratha, pickle, juice etc. for standardization for getting maximum health benefits.

Result and Discussions

Application of bottle gourd in food products

Bottle gourd takes the lead in the diet compared to other vegetables grown in India since it is a nutrient-dense and low-cost source.

1. Procedure of preparing Nuggets

This is one of the most popular sun-dried products. These nuggets are either fried and eaten or can be used in many different dishes/curries.

Ingredients: 1 cup black gram, 1 cup grated bottle gourd, salt. To put together badi, black gram is first soaked in water in a single day. The bottle gourd is grated and the extra water is eliminated in some other container. This water was reserved as it would later be used for grinding. The soaked black gram become then floor with the reserved water into a very clean paste. The combination ought to not be too watery, so the squash cloves want to be squeezed out of the bottle to drain the extra water. those grids had been brought to the black gram paste. Salt became jumbled together this paste and then small balls of the paste had been made and kept within the sun on a plastic paper which have to be oiled so that the badis may be without difficulty eliminated. there was lots of space left between the 2 badis. After drying after 2-3 days, the badis without problems peeled off from the paper. They were dried until they had been crispy. The nuggets have been then cooled to room temperature and saved in hermetic bins.

2. Procedure for preparing Paratha

Parathas are unleavened layered breads made from whole wheat flour, grated bottle gourd, salt, spices and herbs. They are usually topped with white butter and served with cucumber and yogurt.

Ingredients: Peel and grate the bottle gourd. Squeeze out the water by means of pressing gently between both arms, keep the water, you may want it later and you can add it to the dough in preference to water. It's miles better to take away it in the beginning and upload it later due to the fact the bottle gourd has too much water. Make a paste of ginger and green chilli and add it to the grated bottle gourd, add 2 tbsp of ghee, turmeric powder, purple chilli powder, asafetida, coriander powder, cumin and salt and blend nicely with the grated bottle gourd, go away for 10 marinate for mins. Then add wheat flour and gram flour and mix properly. Mix with out including water in order that the flour and grated pumpkin from the bottle turn out to be one combination. As wished, slowly pour inside the water squeezed from the grated bottle gourd, which we kept aside earlier than. Simply sufficient to form a company dough and knead until clean. (Like chapati dough). Cover, allow relaxation for at least half hour and knead once more in short. If resting for extra than 1 hour, pierce and knead the

dough once more earlier than rolling it out. Divide into small balls and roll out circles on a clean surface. warmness a flat pan on medium flame, cook the paratha and cook dinner the paratha on each facets till golden brown. Drizzle with oil or ghee at the same time as cooking. Serve warm with any raita of your choice.

3. Bottle Gourd Pickle

Pickling is a traditional method of food preservation. A pickle developed from bottle gourd extends the shelf life of this vegetable. Using different spices like turmeric, mustard, cloves and asafetida can make the cucumber more delicious.

Ingredients: Pumpkin cut into half a kg. Half a kg of mustard oil, 2 tablespoons of mustard seed powder, one and a half teaspoons of salt, red chili powder, turmeric powder Dip the cut pieces of bottle gourd in boiling water that already has turmeric powder added to it. Let it soak for 5-10 minutes and then remove the excess water and let the pieces dry for a while. Mix all the ingredients and store in a glass container. Keep in the sun for 2-3 days until we get the desired acidity.

4. Bottle Gourd Juice

This juice is a popular drink enjoyed by many people around the world. It is produced by extracting juice from fresh fruit, which contains various vitamins, minerals and antioxidants beneficial to our health. It improves digestion and reduces, to maintain hydration and prevent dehydration, energizes the body, making it a great choice for a quick energy boost.

Ingredients: Bottle gourd end result were washed to reduce field temperature and put off impurities. Cut the fruit into small portions the use of a knife. Those portions had been at once blanched at 80°C in hot water for three-4 mins to deactivate the enzymes and save you browning. After blanching, the pieces have been used to extract the juice using a juicer. The extracted juice changed into filtered via two layers of muslin fabric. The filtered juice became pasteurized at eighty five °C for half-hour. Upload ginger, mint leaves, salt, black pepper powder, jeera powder and upload clean lemon juice to inactivate the pest and make bigger shelf lifestyles.

Conclusion

Bottle gourd is a notable cucurbit crop this is one of the most inexpensive resources of vitamins and has the ability to be a supply of herbal antioxidants that human beings want for properly fitness. Consuming bottle gourd is related to a number of health blessings and may be considered a herbal sickness prevention. Price addition is one method that may help clients include those greens into their every day weight loss plan even as selling fitness benefits. it is also rich in vitamins, low in calories and hydrating, making it an first-rate desire for every person seeking out a wholesome food plan.

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