

## METHODS AND TECHNOLOGY OF MEDICINAL GINGER PLANT PROCESSING

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**Abstract:** This article discusses the nutritional value of the ginger plant, its place among medicinal plants, growing conditions, biology, the importance of the ginger plant in folk medicine, its use, storage and processing technology.

**Аннотация:** В данной статье рассмотрена пищевая ценность растения имбиря, его место среди лекарственных растений, условия произрастания, биология, значение растения имбиря лекарственного в народной медицине, его применение, технология хранения и переработки.

**Ключевые слова:** Имбирь, народная медицина, эфирное масло, корень имбиря, воспаление, лекарство.

**Key words:** Ginger, folk medicine, essential oil, ginger root, inflammation, medicine.

### Introduction

Decision No. PQ-4670 dated April 4, 2020 by the President of the Republic of Uzbekistan "On measures for the protection of wild medicinal plants, cultivation, processing and rational use of available resources" done. In recent years, consistent reforms have been implemented in the republic regarding the protection of medicinal plants, the rational use of natural resources, the establishment of plantations where medicinal plants are grown and their processing. At the same time, it shows the need to protect medicinal plants, establish their plantations, and create an additional value chain through processing.

Effective use of the raw material base of medicinal plants, wide use of medicinal plants in the prevention and treatment of diseases, organization of deep processing and value added chain by supporting business entities establishing cultural plantations of medicinal plants in order to create President Sh.Sh. Mirziyayev's decree No. PF-139 dated 20.05.2022 "On measures to create an additional value chain by supporting the effective use of the raw material base of medicinal plants and processing" was signed.

According to the decree, areas for the cultivation of several types of medicinal plants will be specialized, and new medicinal plant plantations will be established on an area of 36,000 hectares. In addition, it was emphasized that subsidies and preferential loans will be allocated to farmers and peasant farms growing medicinal plants. It was also mentioned that a number of opportunities will be created for those who process, store and export medicinal plants.

Folk medicine, tested in practice in terms of quality, safety and efficiency, plays an important role in ensuring the health of the population, providing medical and sanitary assistance, and in the prevention and treatment of various, especially chronic, diseases. In the decree adopted in previous years, the decision of the President of the Republic of Uzbekistan PQ-4668 dated April 10, 2020 "On additional measures for the development of folk medicine of the Republic of Uzbekistan" shows how important folk medicine is. shows.

Medicinal plants are plants used for the treatment and prevention of human and animal diseases. This, in turn, serves as the basis of folk medicine. Another aspect is that the raw materials of such plants are part of the composition of drugs prepared in the pharmaceutical industry.

According to the data of the World Health Organization, 60% of the available medicines are preparations obtained from the raw materials of medicinal plants.

In the territory of the Republic of Uzbekistan, many unique medicinal plants are found in cultivated and wild forms and are widely used in folk medicine.

Ginger root, the medicinal plant we want to reveal, is popular among cooks and traditional medicine enthusiasts. The fresh root is added to food as a spice, used as an anti-inflammatory agent, helps with toxicosis during pregnancy, improves the throat during colds, stimulates digestion and metabolism. However, preserving ginger root so that it does not lose its pungent taste or beneficial properties is not an easy task.

Fresh ginger root can be stored in the refrigerator for more than a week, after which it begins to lose its beneficial properties, the taste may not change for the better. You can extend the shelf life of the root a little if you dry it, preferably in the sun, then wrap it in parchment and put it in a cool, dark place - in this form, ginger will stay fresh for a month.

It is impossible to freeze fresh ginger, sometimes it is recommended: in this case, almost all its medicinal properties are destroyed, the taste is very bitter, and the bitter aroma disappears.

Dried ginger root can be stored for a long time, up to 6 months if stored in a cool place, but it should be soaked for several hours before use. At the same time, the healing properties will be preserved, but the smell will be less, and the taste will be o 'will be sharper.

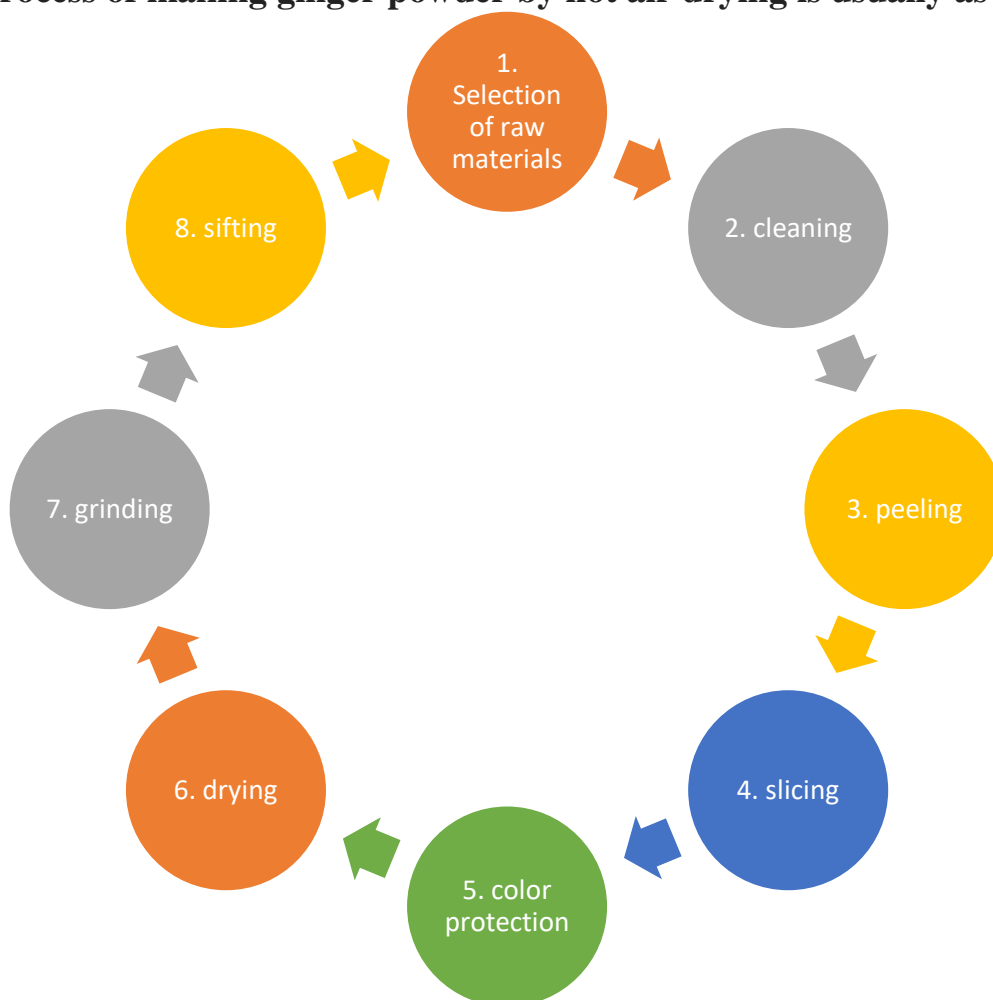


Medicinal properties of the ginger plant were known several centuries ago. Abu Ali Ibn Sina, the Sultan of Medicine, wrote in his "Laws of Medicine" that when preparing ointments used in the treatment of many diseases, it is necessary to add ginger to them. The great Hakim Abu Ali Ibn Sina, who effectively used ginger in the treatment of a number of diseases, writes in his work: "Ginger improves memory, removes moisture around the head and heart, and digests food well." Its chemical composition contains about 400 useful elements. This root contains essential amino acids, carbohydrates, a small amount of fat, and a large amount of cellulose.

Vitamin C and elements of potassium and phosphorus contained in ginger are actively involved in strengthening immunity, fighting flu and colds, and fighting viruses. It normalizes the condition of blood vessels in atherosclerosis, when fat and cholesterol metabolism is disturbed. A ginger compress is used for headaches, shoulder pains, and chronic back pain. Ginger also cures arthritis. Ginger is widely used in aromatherapy and there are reports of its widespread use for nervous and mental stress.

**The methods of preserving ginger root are as follows:**

1. Hot air drying method. This method is currently one of the most widely used processing methods, which uses hot air drying to produce ginger powder. **The process of making ginger powder by hot air drying is usually as follows:**



2.

Drying is the most important part of ginger powder processing. Therefore, drying temperature and drying time directly affect the quality of ginger powder.

2. In the spray drying method, Ginger powder is mainly used to extract or hydrolyze the active ingredients before spraying. General process:

Ginger → cleaning → extraction (hydrolysis) → concentration → sterilization → spray drying → ginger powder solid drink (or ginger active ingredient microcapsules).

Ginger hydrolysis conditions, addition of drying agents and spray drying conditions significantly affected the quality of ginger powder.

### 3. Microwave drying method

Microwave drying technology is widely used in the field of fruit and vegetable processing. It has important advantages such as fast drying, high drying quality, high energy use, easy control, good product rehydration and no contamination. The general process of microwave drying to produce whole ginger powder is as follows:

Raw materials → cleaning → cutting into pieces → drying in a microwave oven → grinding and sieving → finished product.

### 4. Vacuum freeze drying method

Considering the large loss of active ingredients of ginger during the thermal processing of ginger powder, freeze-drying technology has made some progress in the processing of ginger powder. The vacuum freeze-drying method has clear advantages for preserving the active ingredients of ginger. The technology of making ginger powder by freezing:

Raw material selection → cleaning → peeling → slicing → pre-freezing → vacuum freeze drying → grinding → sieving → inspection → finished product.

Summary. The ginger plant, which is used as a medicine and spice in various areas of our life, ranks high in terms of usefulness for the human body. Along with the production processes of any product, of course, its storage is also important. Therefore, it is necessary to properly use the technology of storage of the ginger plant, which preserves its vitamins.

### LIST OF REFERENCES:

1. Decision No. PO-4668 of the President of the Republic of Uzbekistan dated April 10, 2020 "On additional measures to develop folk medicine of the Republic of Uzbekistan".
2. Abu Ali ibn Sina "Medical Laws" selection volume 1 T-1983 (Translators: A Rasulov and p.200-201-B
3. A.Abdullayev and others. "Brief Annotated Dictionary of Biology" T-2016. 134-B
4. Khasanova, G. R., Ernazarova, M. E., & SHIFOBASH, Q. O. T. F. J. ORIENSS. 2022. No. Special Issue 4-2. URL: <https://cyberleninka.ru/article/n/useful-aspects-of-healing>.