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## IMPORTANCE OF POTATO POWDER EXTRACTION TECHNOLOGY IN PRODUCTION AND INDUSTRY

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### **Abstract:**

**Objective.** Potatoes were originally used as food by South American Indians. Its cultivation began about ten thousand years ago in the territory of Peru. Information about potatoes reached Europe only in the 16th century, and it was widely used in cooking from the 18th century. Currently, potatoes are grown in all regions of the world. It has about 4000 species. Russia, Belarus, Ireland and China are the countries where potatoes are consumed the most. At first, potatoes were used as a houseplant and planted in flower pots to decorate the house.

**Methods.** In our research work, a technological line for drying and juicing potatoes from nodular products in the belt drying chamber of a convective drying device.

**Keywords.** solanine, technical, puree, starch, phenanthrene derivative, amino acid, vitamin, diseases, extract, juice, convective drying device, potato juice.

**Introduction.** Potato is a vegetable that was imported from the sea and was brought to Europe from South America in the middle of the 17th century. Potatoes contain many types of trace elements, B group and vitamins A, C, U, PP group, potassium, zinc and magnesium, calcium. It contains carbohydrates, iron, phosphorus, and iodine elements. Due to its starch content, it gives energy to the

body and is extremely satiating. Potato nodules contain starch (about 20 proteins, sugar) and other substances. Alcohol, starch and glucose are obtained from them.

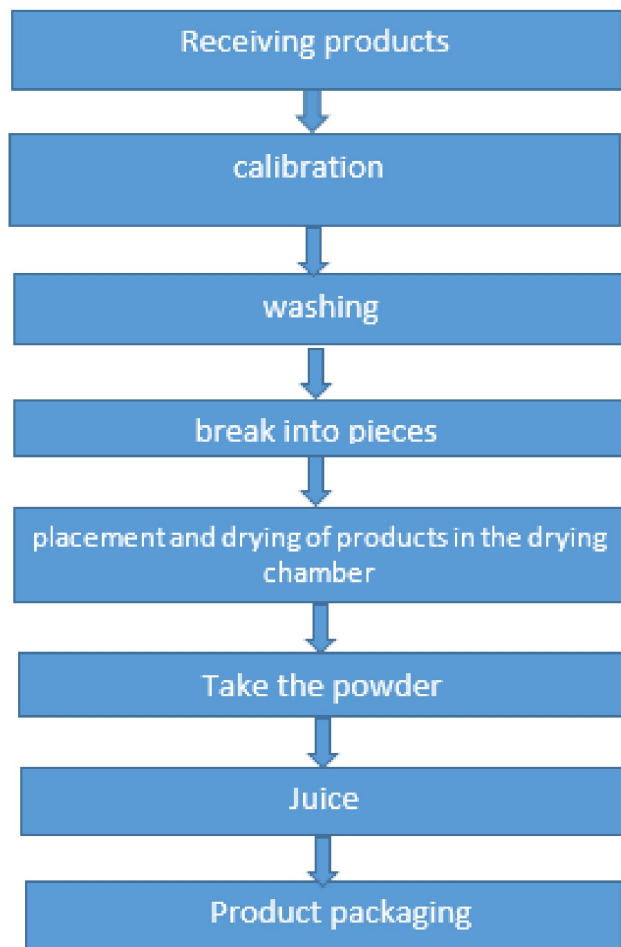
It is known that the demand for dried fruits and vegetables in our country is increasing year by year. That is, the production of high-quality, low-cost products with high food value and innovative energy-saving high sublimation

and convective drying technologies are widely used in the food industry today, is being used.

**Results.** To process product samples in a solution of ascorbic and citric acids for 5 minutes, a solution is prepared by adding 20 mg of ascorbic acid to 250 ml of water, and the potato samples are processed by soaking them for several minutes. They are placed in a test tube and then dried in a drying chamber on 4 tapes for 2 hours. The total drying period was 30 minutes at 80 C° on tape 1, 25 minutes at 75C° on tape 2, 35 minutes at 90C° on tape 3 and finally on tape 4 for 20 minutes at 80C°. The total drying period lasted 2.5-3 hours, and it was achieved that the total organoleptic indicators of the product samples were preserved according to the standard. The main goal of processing the potato samples

with ascorbic acid and citric acid was achieved with consistency (shape). Since potatoes contain a lot of starch, the product darkens quickly. Potato products selected for drying are products rich in vitamins and minerals according to the standard. During the drying period, we cut potatoes into pieces of different sizes, mainly 3-5 mm in size, depending on the type of product and their size. Potato tubers contain 75-80% water, 23.7% dry matter, including 17.5% starch, 1-2% protein, 0.5% sugar, 1% mineral salts, as well as vitamins V, V2, V6, C, RR, D vitamins and provitamin A (carotene), and the skin contains a poisonous substance - solonin. Potatoes play an important role in people's diet. According to physiological recommendations, the annual potato consumption per person is 45 kg.

### Potato powder and juice extraction technology



### Chemical composition

B6-15%  
S-22.2%  
K-22.7%

Si-16.7%  
Co-50%  
Cu-14%

Mo-11.4%

**Discussions. Solanine-** is found in some vegetables (tomatoes and eggplants) and potatoes. The chemical composition of solanine in different vegetables is different. Solanine accumulates in the skin and the layer close to it and gives it a taste. Potato solanine (C<sub>45</sub>H<sub>71</sub>NO<sub>15</sub>) contains sugars, rhamnose, galactose, Aglyconsolanidin (C<sub>14</sub>H<sub>10</sub>) is a group of trinuclear aromatic compounds derived from glucose and phenanthrene.

Varieties of potatoes, depending on what they are intended for, are conventionally divided into khoraki, technical, hashaki and universal varieties.

Among the people, potato is also called "second bread". It is distinguished from other crops not only by its nutritious properties, but also by its healing properties. It participates in the conversion of amino acids, tryptophan, lipids and nucleic acids in the metabolic process. Potatoes also contain antioxidants and phytonutrients that are important for the body.

Vitamin B6 contributes to the production of "hormones of happiness" (dopamine, serotonin, norepinephrine), helps fight stress, bad mood, improves brain activity.

Vitamin C is an antioxidant that protects the body from free radicals, increases immunity and resistance to various diseases.

Potassium supports the nervous system, muscle activity, regulates blood pressure.

**Potato extract.** Potato extract is mainly obtained from potato tubers. Potato is also known as potato, sun taro, yam egg, sweet potato, artichoke, mashed egg, Dutch potato, sweet potato size, etc. It is rich in protein, fiber and carbohydrates. provides a large amount of nutrients for the

human body. Potato, which is the main compound of potatoes, effectively prevents the accumulation of fat in the cardiovascular system, maintains the stability of blood vessels, prevents atherosclerosis, protects the liver, kidneys, heart and other organs. and develops the respiratory system. Potatoes are low in calories and have a strong feeling of satiety. This is a high-quality coarse grain product, a good product for those who lose weight and are healthy, as well as middle-aged and elderly people. is a good health product for people.

Potato extract vitamins are rich in microelements such as proteins, carbohydrates, calcium and potassium, easily digested and absorbed by the body, and provide a lot of nutrients and energy for the body.

Keto potato extract contains many protein and vitamin groups, they warm the stomach, stimulate gastrointestinal motility, accelerate the digestive function of the spleen and stomach. Potatoes are rich in dietary fiber, which helps defecation and prevents constipation. and cures various intestinal diseases. Potato powder can provide the human body with a large amount of mucin, which keeps the digestive tract, respiratory tract and joints lubricated, and prevents cardiovascular fat accumulation. prevent, maintain blood circulation and prevent arteriosclerosis. The potassium in potatoes can accelerate the excretion of excess sodium in the body and has a clear healing effect on patients with hypertension, nephritis and edema. Potato extract is rich in dietary fiber and protein and low in calories. and has a strong satiety, which provides sufficient nutrition for the body and is a good product for weight loss. Potato protein powder can regulate the immune function, provide various amino acids, accelerate

metabolism and provide the body with new tissue cells. Potato protein powder is useful for lowering plasma cholesterol levels and helps patients with high cholesterol levels to recover faster.

**Potato juices.** Many people do not know that fresh potato juice is less useful than the root. The composition of the drink contains about 30 different useful elements. the drink has a high concentration of ascorbic acid, tocopherol,

nicotinic acid, vitamins of group B, they not only strengthen the body's defenses, but also remove products that release toxins from heavy metal salts. Doctors recommend drinking water to people suffering from gastrointestinal diseases, including hypertensive patients with peptic ulcers. Due to its analgesic and antiseptic properties, drinking water helps to quickly heal injuries and inflammation.



**Figure 1. Samples of received products**

**Conclusion.** The purpose of our study of these technologies is mainly to obtain waste-free products, to avoid excessive wastage, to produce primary and secondary products. Through these drying methods, we can store products for a long time. However, the color, shape and size of the product samples are different changes are observed.

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