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THE ROLE OF THE STEVIA PLANT IN THE FOOD INDUSTRY

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Abstract: *This article provides information on the importance and cultivation of stevia in the food industry.*

Key words: *stevia, chemical composition, agrotechnics, importance, useful properties.*

Introduction

The natural reserves of stevia (*Stevia rebaudiana* Bertoni), native to the mountainous regions of the South American continent (Paraguay), are found at altitudes of 300 m above sea level. The plant is cultivated in Japan, USA, China, Thailand, Israel, Korea, Russia, Moldova, Ukraine and other countries. More than 200 species of stevia grow in North America.

The chemical composition of the plant is unique, the leaves contain a sweet-tasting diterpenoid (stevioside) glycoside. Stevioside is 300 times sweeter than 0.4% sucrose solution and 150 times sweeter than 10% sugar solution. In addition, it contains flavonoids (quercetin, rutin), minerals - (calcium, phosphorus, potassium, zinc, iron, chromium, magnesium, selenium, copper, manganese, cobalt), as well as vitamins (group B, A, C, E and . h.k.) are available.

Stevia plant has an effect on the body as a general strength and strengthening. In ancient times, the Indians of Brazil and Paraguay used stevia as food, and sometimes in the treatment of gastrointestinal and kidney diseases. In the early twentieth century, French scientists identified stevioside and rebaudioside substances in this plant.

In 2008, India had the highest number of people with diabetes (30 million). As demand for stevia raw materials increased due to this disease, farmers began to establish stevia plantations on large areas. India is also one of the countries with the best soil and climatic conditions for growing stevia. Today, the annual production of stevia plant in India is about 600 tons.

In folk medicine, substances derived from stevia are also used in diabetes. At the same time, the consumption of plant products (talc) kills pathogenic microbes and has a positive effect on the immune system.

It is also used in inflammation of the heart muscle, improving the condition of the skin and hair, removing cholesterol from the body. In addition, stevioside is widely used in the confectionery industry (Japan) in the preparation of soft drinks, sweets instead of sugar.

The stevia plant was discovered in 1931 by N.I. Introduced by Vavilov at the Nikita Botanical Garden. Later, scientists from research institutes of Tatarstan, Kazakhstan, Ukraine, Egypt and Moldova developed air conditioning and developed basic agro-technological measures.

This plant was first localized in Uzbekistan in 1996 by scientists from the National University of Uzbekistan and Tashkent State Agrarian University.

Today, stevia plantations are expanding in the country. For example, in Surkhandarya region, Shurchi district, the experimental farm "Olloyorohun" stevia organizes and cultivates plantations on an area of 7 hectares.

Interdisciplinary Conference of Young Scholars in Social Sciences

The processes of cultivation and processing of stevia in our country have been studied. It is used to propagate from seed, to grow seedlings by cuttings. The results of practical work show that the stevioside content of stevia grown in the country is much higher than the amount of stevioside in plants grown in some countries of the world - 19.7% (16% in South Korea).

Stevia is adapted to subtropical, temperate climates, grows well at temperatures up to 24 ° C. Soils where stevia grows well are sandy (sandy) soils with normal humidity.

When planting and caring for a plant, choose a plot of land that is not dense for its normal development, has a good drainage system, is exposed to sunlight, is fertile, and has sufficient irrigation capacity. This is because this plant does not grow well in areas that are not well lit by the sun (shade) and in infertile soils. The area selected for planting seedlings is plowed to a depth of 25-30 cm in the fall. At the same time, 100 tons of local fertilizers (manure) and 200 kg of phosphorus per hectare will be applied to the arable land. The soil is loosened twice so that the root system of the plant develops well.

In short, as noted above, the increase in the number of medicinal and spice plants in our country and the creation of cultural plantations will allow the pharmaceutical industry to meet the demand for medicinal plants to a certain extent. It is also free from weeds. The forgetfulness of the plant seed is low and it quickly loses its ability to forget. Therefore, the initial process of growing the plant begins in the greenhouse. The optimal time for sowing stevia seeds (in greenhouse conditions) is January. The plant is planted in a special place (floor) in greenhouses for growing seedlings. On top of sown seeds sprinkled sieve mixture (1 manure: 1 sand: 3 soil). In this case, the soil thickness should be 0.2–0.3 cm. When the air temperature reaches + 15 ° C, this is a good opportunity for the seeds to germinate. Therefore, in the cultivation of stevia, the seeds are first sown in special nurseries. When the temperature is maintained at +18 ... +25 ° C, young roots appear within a week. Stevia seedlings are released into the open field in late March and early April at a height of 15–20 cm. To get a leaf or seed crop, the row spacing is drawn in 2 rows. To get a leaf crop, seedlings spaced 70 cm apart

At intervals of 20 cm, row spacing is taken from 90 cm to get the seeds, and seedlings are planted at intervals of 25 cm. Plant nutrition begins in the second month of the growing season. Irrigation during the season (until October) is carried out depending on the condition of the plant. One of the peculiarities of the plant is that stevia stops growing at temperatures below 100C. This refers to its attitude towards the external environment and its partial adaptation (idoadaptation). The yield of stevia per hectare is up to 5-8 quintals in the first years and 18-20 quintals in the following years.

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Interdisciplinary Conference of Young Scholars in Social Sciences

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Interdisciplinary Conference of Young Scholars in Social Sciences

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