



GROWTH CONDITIONS AND MEDICINAL PROPERTIES OF ZINGIBER OFFICINALE L. IN SURKHANDARYA REGION

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Abstract

This article describes how to observe the growth and development of Zingiber (*Zingiber officinale*) in the soil and climatic conditions of Termez district of Surkhandarya region and to conduct research and experiments on the effects of environmental factors on plants. The selection of experimental options and observations, the emergence of the plant at different times under the influence of environmental factors, the medicinal properties of the plant are briefly described.

Keywords: ginger, growth, development, phenological, physiological indicators.

Introduction

Our heavenly land is rich in flora. Of the more than 4,300 plants belonging to the native flora of nature, 750 species are medicinal, of which 112 species are registered for use in scientific medicine, of which 70 species are actively used in the pharmaceutical industry.

Ten centuries ago, our ancestor Abu Ali Ibn Sina, in his immortal works, described the secrets of the effective use of medicinal plants and put them into practice, which in turn was recognized by scientists and scholars around the world. The order and rules of use of medicinal herbs left in his works, his methods are still used by pharmacists, folk healers and scientists around the world. From ancient times the medicinal plants have been used to treat various ailments. In particular, it lowers the high temperature, opens the appetite, refreshes the person. The presence of binders and gingerol gives it a unique pleasant aroma. It also has a number of useful properties. That's why the Arabs like to eat it with food. Abu Ali ibn Sina wrote in the Laws of Medicine that ginger should be added to ointments used in many diseases.

On April 10, 2020, the President of the Republic of Uzbekistan signed Resolution No. PQ-4670 "On the protection, cultivation, processing and rational use of available resources of wild-growing medicinal plants." This decision laid a solid foundation for





the creation of a favorable environment for the further development of the cultivation and processing of medicinal plants, increasing the export potential of the industry, as well as the integration of education, science and production processes. It is known that the expansion of the area under medicinal plants, the increase in the number and size of cultivated plants will require its processing and increase in exports. Therefore, the relevant ministries, agencies and organizations have been tasked to increase the production and export of natural medicines. At the same time, the propagation of medicinal plants in plantations, including the development of nursery and seed production, the introduction of new species, the introduction of seeds and seedlings for the establishment of cultural plantations of medicinal plants and maternity nurseries. tasks were given to simplify the procedure for issuing quarantine permits for chats.

The resolution provides for the strengthening of scientific and innovative developments in the cultivation and processing of medicinal plants, the formation of startup projects for the construction and processing of plant plantations, as well as the implementation of grant competitions.

Ginger (*Zingiber officinale* L) is a leader in the world market today with its medicinal and beneficial properties. The following is information about its composition and medicinal properties;

Raw ginger is 79% water, 18% carbohydrates, 2% protein and 1% fat (Table). At 100 grams (the standard amount used to compare with other foods), raw ginger provides 80 calories and contains vitamin B6 (12% of the daily value) and manganese. (11%), but low in nutrients.

Useful vitamins in ginger root and lowers high cholesterol due to the elements, resulting in an increase in testosterone levels, which has the potential of the drug, prophylactic against prostatitis. In general, it improves blood circulation. It is useful to use it when freshly typed.

Ginger is used for a variety of reasons. When freshly picked, it is juicy and meaty, often salted in vinegar and eaten as a snack. Tea can be prepared from parts of the root mixed with honey in boiling water. If it is fermented with raisins and mixed with cognac, it can even be made into wine. Ginger is dried until ripe and can be ground into a powder, which is then used as a spice or as an ingredient in ginger, biscuits, crackers and cakes, and ginger beer. You can even cook the candies by mixing the ginger with the sugar until it becomes soft. The result is a candied or crystallized ginger. Ginger is a very popular food ingredient in India. It is used in the preparation of thick gravy, in the preparation of pulses and lentils, as a spice for tea and coffee (especially in the cold months).



Ginger has long been used in folk medicine as a medicinal plant. To prevent the flu, Burmese people used a natural mixture made from a mixture of palm tree juice and ginger. In Japan, ginger has been used to help blood circulation. Tango juice made in Congo is a healing remedy. It is made from the juice of ginger and mango tree.

Methods for introducing ginger to the conditions of Termez district have been developed and put into practice.

During the introduction, the morphological characteristics of the species *Zingiber officinale* L. were as follows: the rhizome of the plant is an underground vegetative reproductive organ, with a long spherical appearance and a yellowish skin on the outside. In the central part of the rhizome are conductive tissue ligaments that run upwards through the nucleus. The rhizomes have an average diameter of 8, 10 cm and a height of 10-15 cm, and weigh 40-60 g to 100 g (rarely 120 g). During the harvest, the weight and size of the rhizomes increase significantly.

When the bark of the plant's rhizome is removed, wrinkles appear on its body. In turn, there are buds that form small pits between them. The first and second upper buds are usually larger than the others and have a flat shape.

The lower buds form rhizomes, which in some cases (depending on the environment). This characteristic of the plant can be used effectively to increase the coefficient of vegetative growth by dividing the rhizomes into several parts, which in turn increase the amount of nutrients.

The leaves are 6-12, linear-lanceolate, with a white-green border in the center. The upper leaves are shorter than the lower ones.

In an experiment conducted in 2020, the formation of vegetative organs of *Zingiber officinale* L. in Termez conditions began in the third decade of May (air temperature 24-32°C, relative humidity 33%). The leaves of the plant began to appear light green in the soil, and its full formation took 15 days, reaching a length of 2-11 cm.

Due to the hot summer climate and low relative humidity in Surkhandarya region, the plant needs frequent irrigation in Termez district to grow.

In order to establish large-scale plantations of species of the family *Zingiber officinale* L., we focused on key indicators of plant resistance in the field.

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