

## CULTIVATION OF TULIP ONIONS FROM THE NETHERLANDS IN THE CLIMATE CONDITIONS OF NAMANGAN REGION

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### Abstract

In this article, research was conducted on the growth and development of varieties introduced from the Netherlands in the climatic conditions of the Namangan region of the Republic of Uzbekistan. The material of the experiment, that is, onions, was 2,300,000 pieces of varieties introduced from the Netherlands. Before planting, tulip bulbs were subjected to refrigeration technology at a temperature of 4-50C for 16 weeks. The main goal of the research was to identify onion varieties that are fruitful, resistant to all climatic conditions and diseases, and to compare local and introduced varieties, to determine the most optimal options.

**Keywords:** Tulip, introduction, onion, soil, variety, family, cell, plant, species, Annushka, climatic conditions, Lighhart bloemboeiien.

### Introduction

Tulip bulbs are ovoid, conical in shape, rounded, brown, covered with a brown membrane, the base and the part where it joins the mother bulb is not covered with a membrane. Beneath the rind is a fleshy extra rind that holds a lot of nutrients, and inside it there are one or two small bulbs attached to the base. These bulbs are formed due to the nutrients of the pod shell. Sometimes two layers of outer flesh form a strong shell and serve to protect the onion from drying out, various diseases and pests. A tulip bulb consists of several concentric, thick fleshy pods, which resemble open half-cones that are inserted into each other. Among these are the buds that form the tulip flower, flower stem and leaf. They are one bud in an additional pod attached to the base of the bulb with its lower part, and then a tulip bulb will develop from these buds. The bud, which temporarily acts as a bud, is located at the base of the flower stem, which later turns into a tulip bulb.

After planting a tulip bulb, roots form around the base of the bulb, the central bud begins to sprout a lance-shaped branch that allows it to pierce the soil, the leaves become larger and longer, and the flower stem lengthens. All the shoots located between the fleshy pods begin to grow due to the nutrients in the pods and the nutrients coming through the green leaves. By the end of the growing season, only dry membranous pods and old roots remain from the fleshy pod.

The number of tulip leaves is from 1 to 5-6. The lower part of the flower stem has slightly larger, ovate pointed leaves, and the upper part has ribbon-like, thickly pubescent, waxy, dark green or bluish leaves. A large onion produces a very large leaf when planted, which then produces a rather large round onion. The flower stalk is 15-70 cm long and has a

single calyx at the end. In the following years, tulip varieties appeared with bunch flowers, the flower stem gives off several branches, each with 10 calyxes at the end, but their flowers are not very beautiful because they are not arranged evenly and do not open.

Tulips grow well in fertilized soil. To improve the soil composition, humus, compost is added to it, and large-grained sand is sprinkled on it. Application of non-rotted fertilizers will cause rotting of the root part of the tulip onion and the complete drying of the onion. Therefore, in the spring and summer months, the gunk is sprinkled with water from time to time and rotted. When it is time to plant tulips in October, it turns into good humus, after which the humus is sifted and cleaned from the roots of autumn crops, golden beetle larvae, and autumn nightshade.

As soon as the tulip blooms, the formation of bulbs begins. Depending on the weather conditions, the onion heads will be ready after about 35-45 days. After the tulip leaves begin to turn yellow, the bulbs can be dug up before they are completely dry. It is dried for 7-10 days in a closed place, protected from direct sunlight, cleaned of roots and old bark, disinfected in fundazol and other solutions. After drying, it is advisable to store the bulbs in boxes, kapron, gauze bags in dark rooms with a temperature not lower than 20°C. The flower stem, leaves and flower develop during storage of the bulb. Further development of flowers depends on optimal conditions and temperature during cultivation.

**Currently planting tulip bulbs in Namangan region.** Tulips are among the most famous spring flowers not only in Uzbekistan but also in the whole world. This flower takes center stage in the festival of flowers, which has become a tradition, especially in Namangan. In recent years, planting tulips has become popular in the streets and alleys of all cities and regions of the Republic of Uzbekistan. Therefore, the demand for tulips is increasing day by day. Many scientists around the world have conducted research on the biology, planting technology, and ecology of the tulip flower.

Since 2019, there have been major changes in the technology of flower cultivation in Namangan region. The reason is that in 2018, the Netherlands "Lighthart bloembollen V.O.F." "Flower Development Center" in the presence of the company and Namangan region hokimiy is the first large-scale project implemented on the basis of a memorandum of cooperation signed between DUK. In accordance with this document, the Uzbek-Netherlands joint venture "Lighthartulips-Namangan" in the form of a limited liability company was established.

In this project, the first large-scale prospective project of efforts carried out by the Center for the Development of Floriculture and the Namangan Institute of Engineering and Technology was realized. Specialists of the center and scientists of the institute took an active part in the process of planting bulbs of the tulip variety brought from the Netherlands. For the plantation, according to the conclusion of comprehensive studies by experts, Tuya Taldi massif of Kosonsoi district, whose climatic conditions meet the requirements, was selected and 5 hectares of land area was allocated from the district

territory. 22,500 tulip bulbs of 16 varieties of 32 different colors were brought from the Netherlands. Specialists from the Netherlands were also invited in order to adapt the tulip to climatic conditions, to establish its care and selection. Planting of the brought tulip bulbs was carried out according to the variety, color and other natural characteristics with the help of modern equipment.

The tulip bulbs brought from the Netherlands were planted in cooperation with Jan Lighthart, a Dutch tulip flower expert, and associate professors S.A. Misirova and I.Sh. Kurbanov, scientists of the Namangan Institute of Engineering and Technology. These tulip bulbs were planted for 3 days based on a number of existing agrotechnical measures from the point of view of scientific research. Of course, before planting, the soil was prepared for tulips, that is, it was necessary to use a cultivator and harrow many times to prepare the soil. The process of planting tulip bulbs, since most of the soil in the territory of Uzbekistan is gray soil, special equipment (aggregate) brought from the Netherlands was used. Tulip bulbs were planted in 75 cm wide egates. The main purpose of planting tulip bulbs in 75 cm egates is that the special equipment for planting tulip bulbs (aggregate) is adapted to the soils of Uzbekistan and is easy to water. The process of planting tulip bulbs in the field began in the last 10 days of October 2019. Onions were planted in 3-5 rows at a depth of 15-25 cm using special equipment (aggregate). Tulip bulbs are very moisture-loving, if the soil is wet, the leaves will curl, the bulbs will not grow large enough, and it will be difficult for the bulbs to germinate.

**Watering:** Tulip bulbs do not need much water after they are planted in the ground, because it is autumn-winter season, they are watered once. Thus, in the spring, tulips were watered once again during the period of 2 ears of leaves. In general, in the climatic conditions of Uzbekistan, tulip bulbs are irrigated at least 3 times from planting to harvesting.

**Decapitation and harvesting of tulip bulbs:** In mid-spring, decapitation is carried out after making sure that the tulips are in full bloom. This means that the head of all tulips is cut off. The reason is that tulip flowers spend nutrients on their flowers to form the seed endosperm. In this case, the amount of nutrients for tulip bulbs decreases and significantly affects productivity. The main purpose of the decapitation process is to increase the number of tulip bulbs and enlarge the tulip buds. From the beginning of June, the digging of tulip bulbs begins. Due to the lack of special equipment for digging tulip bulbs in Uzbekistan, the main work was done by hand. Harvested crops were stored in cool and sun-protected warehouses until the next planting period.

In particular, for 3 years, 16 varieties of tulips, namely Spar red, sobel pink, Wit rode punt, Dub rw, double red with white effe, Ridgedale orange, Brown semi double, NC Pride dark lilac, Crw 18 creamwhite, 61-or- 2 tulip varieties such as orangeyellow, Dana Winner white, Purple cloud, purple early blooming, Piet Paulusma yellow, Givency red with yellow effe, Lichte copex light pink, Bl 16-170 violet were carefully monitored from the planting process to the process of phenological observation and harvesting of bulbs

and the most productive varieties with a positive adaptation process to Uzbekistan conditions were recommended. Spar, barbara sobel, Givenchy spar, barbara sobel, Givenchy varieties adaptation was not so positive, that is, the germination and productivity of the plant in the first year, as usual, 5-6 bulbs and onions in 7-9 cm fraction were obtained, and from the following years, the tulips of this variety germinated from the soil, it was observed that the susceptibility to the disease and the number of crops decreased sharply. So, from a scientific point of view, it is not recommended to plant spar, barbara sobel, Givenchy varieties that could not adapt to the conditions of Uzbekistan. NS Pride, Crw 18, Dana winner, purple cloud, piet paulusma tulip varieties planted in the climatic conditions of Uzbekistan for 3 years, watering, fertilizing and all agrotechnical measures were carried out in the same conditions as the above varieties that could not adapt. The varieties with these names had a positive adaptation process every year, that is, the germination of tulip bulbs, the attractiveness and flatness of the crown of the flowers, the greenness of the body and leaves, the productivity during the harvesting process, that is, with the characteristics of having 6-9 bulbs in one head with a fraction of 8-12 cm. positive results were achieved. Therefore, tulip bulbs of this NS Pride, Crw 18, Dana winner, purple cloud, piet paulusma varieties are recommended for planting in the conditions of Uzbekistan. Tulip varieties that are slightly adapted to the conditions of Uzbekistan, but the adaptation process is very passive, are: wit rode punt, double row, ridgedale, 61-or-2. It is not recommended to plant these varieties for harvest.

**In conclusion**, it can be said that according to the results of scientific research carried out for 3 years, in the climatic conditions of Uzbekistan, the tulip bulbs spar, barbara sobel, Givenchy spar, barbara sobel, Givenchy varieties brought from the Netherlands are not recommended for planting. Tulip bulbs of NS Pride, Crw 18, Dana winner, purple cloud, piet paulusma varieties are recommended for planting. This technology of growing tulips was identified as a new technology for growing tulip plantations on a large area for the first time in Uzbekistan and was recommended for production.

Below are photocopies of the planting process of Dutch tulips planted today in the conditions of the Namangan region.



**Figure 1. Tulip planting process**



**Fig. 2. Vegetation period of tulips planted for research**

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