
# Influence Of Fertilizers On The Process Of Cultivation Of Dutch Tulip Varieties In Soil And Climatic Conditions Of The Namangan Region

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ABSTRACT

In this article , in the period 2019-2023, research work was carried out on the cultivation and development of 16 varieties of tulips introduced from the Netherlands in the soil and climatic conditions of the Namangan region. The main goal of the research is to compare the timing and rates of fertilizer application when caring for tulip varieties and to determine the most optimal options.

**Keywords:** Tulip, introduction, onion, soil, variety, tissue, decapitation

**Introduction:** It is well known that tulips are one of the symbols of the Netherlands. This flower is widely grown and cultivated not only in the Netherlands, but also in a number of other countries. Due to the delicate beauty of the spring flower, tulip festivals have become an integral part of cultural events held annually in many countries, such as Canada, the USA, Turkey, Switzerland and South Korea. Tulips are not only beautiful, but also require special care. In particular, fertilization technology is considered one of the important factors in the high-quality cultivation of tulip bulbs and flowers.

**Planting of tulip bulbs:** tulip bulbs imported from the Netherlands were planted with the participation of Dutch tulip specialist Jan Lighart and scientists from the Namangan Engineering and Technology Institute. These tulip bulbs were planted taking into account a number of existing agricultural practices from the point of view of scientific research. Before planting, the soil was brought to a state suitable for tulips. Tulip bulbs were planted in 70 cm wide egates. The process of planting tulip bulbs in the ground was carried out in the last ten days of September.

**Fertilizer:** Tulips can be fertilized 3-4 times during the spring season, depending on natural factors and the development of the flower. Each application of fertilizer is necessary for the rapid development and longevity of the plants in the period before harvesting the bulbs:

- the first application of fertilizers is carried out in the fall during the soil cultivation period;
- the second feeding is carried out during the period of germination from the ground, that is, in early spring, when the ice melts;
- requires a third feeding during the period of appearance of flower buds;
- The fourth feeding is carried out at the beginning of flowering.

**fertilizers on the flower productivity of tulip varieties :** You can increase their flower

productivity by using fertilizers when caring for tulip varieties. The increase in flower productivity is explained by the degree of germination of herbs from planted bulbs, viability, resistance to external adverse factors, duration of flowering and duration of the period. Due to the application of fertilizers, it has a positive effect on the level of germination, viability and resistance to external environmental factors of tulip bulbs, creates the basis for the preservation of all sprouted plants and a high yield. Flower productivity depends on the flowering period of tulip varieties and the duration of the flowering period.

In our experiments, we managed to make the flowering period earlier by 6-7 days, and increase the duration of the flowering period by 2-4 days, i.e. flowering up to 15 days. Fertilizer application at the rate of $N_{30} P_{30} K_{30}$ turned out to be highly effective. Analyzing the varieties, it was noted that the varieties Barbara Sobel pink, NC Pride dark lilac, Dana Winner white, Purple early flowering, Givenchy red with yellow effe, Bl 16-17o violet yielded a harvest 7 days earlier compared to the unfertilized state.

Among the varieties, Dub rw, Double red with white effe, Crw 18 Creamwhite, Purple Cloud bloomed in the last days of March as a result of fertilization, while other varieties bloomed in the first half of April. The effect of fertilization rate on the duration and duration of flowering of tulip varieties is shown in Table 1 below.

Table 1

Effect of Fertilizer Application Rate on Flowering Duration and Span of Tulip Varieties

| T/r | Dutch tulip varieties | Flowering period, date | | | | | | Duration of flowering period, days | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | control | No. 15 | $P_{30} K_{30}$ | $H_{45} P_{45}$ | $H_{30} P_{30} K_{30}$ | $H_{45} P_{45} K_{45}$ | Control | No. 15 | $P_{30} K_{30}$ | $H_{45} P_{45}$ | $H_{30} P_{30} K_{30}$ | $H_{45} P_{45} K_{45}$ |
| 1. | Givenchy spar red | 10.04 | 8.04 | 7.04 | 6.04 | 4.04 | 5.04 | 13 | 13 | 14 | 14 | 15 | 14 |
| 2. | Barbara Sobel Pink | 8.04 | 6.04 | 6.04 | 4.04 | 1.04 | 3.04 | 10 | 10 | 11 | 11 | 12 | 11 |
| 3. | Wit was riding a punt | 20.04 | 19.04 | 18.04 | 17.04 | 14.04 | 16.04 | 14 | 14 | 15 | 15 | 18 | 16 |
| 4. | Duplicate R.W. | 5.04 | 4.04 | 3.04 | 2.04 | 30.03 | 1.04 | 13 | 13 | 14 | 14 | 15 | 14 |
| 5. | Double red with white effect | 5.04 | 3.04 | 3.04 | 2.04 | 29.03 | 1.04 | 12 | 12 | 12 | 12 | 13 | 12 |
| 6. | Ridgedale Orange | 25.04 | 22.04 | 22.04 | 21.04 | 19.04 | 21.04 | 11 | 11 | 12 | 12 | 13 | 12 |
| 7. | Brown semi-double | 22.04 | 20.04 | 20.04 | 19.04 | 16.04 | 19.04 | 14 | 14 | 15 | 15 | 16 | 15 |
| 8. | Pride of North Carolina dark lilac | 25.04 | 24.04 | 23.04 | 23.04 | 18.04 | 21.04 | 14 | 15 | 16 | 16 | 17 | 16 |
| 9. | Crw 18 creamy white | 5.04 | 4.04 | 3.04 | 2.04 | 30.03 | 1.04 | 11 | 11 | 11 | 11 | 12 | 11 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10. | Dana Winner is white | 8.04 | 6.04 | 6.04 | 4.04 | 1.04 | 3.04 | 11 | 11 | 12 | 12 | 13 | 12 |
| 11. | Violet cloud | 5.04 | 4.04 | 3.04 | 2.04 | 29.03 | 1.04 | 12 | 12 | 12 | 12 | 13 | 12 |
| 12. | Purple early blooming | 25.04 | 23.04 | 22.04 | 23.04 | 18.04 | 21.04 | 11 | 11 | 12 | 12 | 13 | 12 |
| 13. | Pete Paulusma yellow | 22.04 | 20.04 | 20.04 | 19.04 | 16.04 | 19.04 | 14 | 14 | 15 | 15 | 16 | 15 |
| 14. | Givenchy red with a scream effect | 25.04 | 23.04 | 22.04 | 23.04 | 18.04 | 21.04 | 14 | 15 | 16 | 16 | 17 | 16 |
| 15. | Light copex light pink | 5.04 | 3.04 | 4.04 | 2.04 | 29.03 | 1.04 | 11 | 11 | 12 | 12 | 12 | 11 |
| 16. | Bl 16-17o purple | 8.04 | 6.04 | 5.04 | 4.04 | 1.04 | 3.04 | 11 | 11 | 12 | 12 | 13 | 12 |

**In conclusion** , it can be said that according to the results of scientific research conducted over 3 years, based on the agrotechnical requirements of the climatic conditions of Namangan, the following tulip bulbs were brought from the Netherlands: Wit Rode Punt, Dub rw, Double red with white effe. The following varieties are recommended: Ridgedale orange, Brown semi-double, Dark lilac NC Pride, Creamy white Crw 18, White Dana Winner, Purple cloud, Early flowering purple, Yellow Pete Paulusma. For growing tulips, it is recommended to fertilize the field with $P_{30}K_{30}$ before planting the bulbs in the fall, $H_{30}P_{30}K_{30}$ 3 times in the spring and $H_{30}P_{30}K_{30}$ during the flowering period.

This technology of growing tulips was for the first time in Uzbekistan designated as a new technology for growing tulip plantations on a large area and recommended for production.

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