



## Influence of Planting Period on the Biochemical Composition of Leaf Turnip

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### Abstract

The biochemical composition of turnip leaves was studied for the first time in the conditions of Uzbekistan in different seasons and planting periods. Studies have shown that the content of dry matter, sugar, and vitamin C in the leaves of these crops is more than that of common vegetables, and they can become one of the main sources of dry matter, sugar, and vitamin C. In the fourth-sixth period, the reduction of leaf size, number of leaves per plant, the weight of one plant, and finally, productivity, led to a decrease in the biochemical composition of leaves.

**Keywords:** leaf turnip, planting dates, vitamins, dry matter, sugar content, leaf, productivity.

**Relevance of the topic.** In recent years, extensive measures have been implemented in our republic to ensure the food safety of the population, to fully satisfy their needs for vegetable products, and to expand the range of vegetable products. As a result, the introduction of new non-traditional vegetable crops for our people has been achieved in recent years. However, not enough attention has been paid to scientific research on the study of the biochemical composition of the newly introduced turnip, such as the creation of new varieties of non-traditional vegetable crops and the improvement of cultivation technology. Leaf turnip is a dietary product, its leaves are eaten. South-East Asian countries, especially Japan, consider this crop as the main source of vitamin C and carotene, and its cultivation is controlled by the government [1;303-c]. However, there is no information in the literature about the biochemical composition of not only leaf turnips, but also ordinary turnips in the conditions of Uzbekistan.

Therefore, for the first time in the conditions of Uzbekistan, a biochemical analysis of turnip leaves and roots was carried out. The biochemical composition of plants was determined at the Tashkent chemical-technological laboratory of the State Commission for Testing Agricultural Crops.

The main part. Studies have shown that the biochemical composition of turnip leaves depends on the season and period of their cultivation. The biochemical composition of turnip leaves planted under a temporary film at different planting dates in spring was studied.

According to the analysis of the obtained data, turnip leaves are very rich in dry matter, sugar, and vitamin C. According to the amount of vitamin C in the leaf, it ranks second after sweet pepper. While the amount of vitamin C in sweet pepper fruit was 250 mg/100 g, its amount in turnip leaf reached 125.4-186.5 mg/100 g. Turnip leaves contain 5.0-7.5 times more vitamin C than tomatoes, 12.5-18.6 times more than cucumbers, and 4.1-6.2 times more than carrots.

The biochemical composition of turnip leaves planted under a temporary film at different planting dates in spring is presented in Table 1.

As can be seen from the data presented in the table, the biochemical composition of the leaf changed following the yield. That is, the content of dry matter, sugar, and vitamin C in turnip



leaves planted in different spring planting periods was the highest in the third period and 5.4% following the first, control period; 8.0%; It was 1.0% higher.

**Table 1. Biochemical indicators of turnips planted under a temporary film in spring at different planting dates, 2012-2014.**

Options	Dry matter, %	Control relative to the variety, %	Amount of sugar, %	Control relative to the variety, %	Vitamin C, mg /%	Control relative to the variety, %
Darmon sort						
I(control)	11,2	100,0	8,8	100,0	192,7	100,0
II	11,5	102,7	8,8	100,0	191,1	99,2
III	11,8	105,4	9,5	108,0	194,7	101,0
IV	10,6	94,6	8,3	94,3	188,2	97,7
V	9,8	87,5	7,3	83,0	185,8	96,4
VI	8,7	77,7	6,8	77,3	183,0	95,0
average	10,6		8,3		189,3	

The amount of dry matter in a normal turnip leaf is 7.8-9.6%, depending on the planting period, and in a salad turnip leaf, it is 8.7-10.5%, while in a leaf turnip leaf, its amount is 8, It reached 7-11.8%. Sugar content is 5.3-6.5% accordingly; 5.8-6.8%; It was 6.8-9.5%. While the amount of vitamin C was 124-129 mg/% in the salad turnip leaf and 183-189 mg/% in the common turnip leaf, its amount reached 183-194 mg/% in the turnip leaf. These data indicate that the biochemical composition of leaf turnip is very rich compared to that of ordinary and salad turnips. A lot of turnip cultivation can make it one of the sources of vitamin C in our country.

The reduction of leaf size, number of leaves per plant, the weight of one plant, and ultimately productivity in the fourth-sixth period led to a decrease in the biochemical composition of leaves.

Table 2 shows the biochemical composition of turnips planted in different summer planting periods.

From the data presented in the table, it can be seen that the amount of dry matter, sugar, and vitamin C in turnip leaves increased from the first period to the fourth period.

**Table 2. Biochemical quality indicators of turnip leaves planted during the summer planting period, 2012-2014.**

Options	Dry matter, %	Control relative to the variety, %	Amount of sugar, %	Control relative to the variety, %	Vita min C, mg /%	Control relative to the variety, %
Darmon sort						
I	12,2	100,0	7,7	100,0	15,6	100,0
II	12,6	103,3	7,8	101,3	15,2	97,4
III	12,9	105,7	7,9	102,6	15,4	98,7
IV	13,3	109,0	8,2	106,5	16,1	103,2
average	12,8		7,9		15,6	



In particular, the amount of dry matter was 12.2% in the first period, and this indicator was 13.3% in the fourth period. The amount of dry matter increased by 9% by the fourth term. The sugar content was 7.7% in the first term, and in the fourth term this indicator was 8.2%, or the sugar content increased by 6.5% by the fourth term. Vitamin C content is 15.6% accordingly; 16.1%; it was 3.2%.

In our opinion, the improvement of the biochemical composition of turnip leaves from the first period to the fourth period is because the growth and development of the turnip plant in the following periods take place in favorable conditions.

This, in turn, led to the improvement of the biochemical composition of the leaves of plants of the third and fourth periods.

### CONCLUSIONS:

1. The biochemical composition of turnip leaves was studied for the first time in the conditions of Uzbekistan in different seasons and planting periods. Studies have shown that the content of dry matter, sugar, and vitamin C in the leaves of these crops is more than that of common vegetables, and they can become one of the main sources of dry matter, sugar, and vitamin C.
2. In the fourth-sixth period, the decrease in leaf size, number of leaves in one plant, the weight of one plant, and ultimately yield, led to a decrease in the biochemical composition of leaves.
3. Summer planting dates also significantly affect the biochemical composition of turnip leaves. The biochemical composition of turnip leaves improved from the first period to the fourth period.

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