

## **The content of nitrogen compounds in leaves and its consumption by wormwood whitish**

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*The results of the analyzes determined that the value of nitrate content depends on the plant age, soil conditions and the N: S ratio.*

*Studies have shown that the content of nitrates in the budding phase is greater in wormwood whitish leaves grown on a typical gray soil than grown on gravelly sierozem. With increasing the N: S ratio, the nitrate content in the leaves decreases, indicating a large value of sulfur in the conversion of nitrates to more complex compounds. In the flowering phase, the content of nitrates in the leaves decreases, reaching a minimum in the phase of maturation of seeds of wormwood whitish.*

**Keywords.** Nitrogen, phosphorus, sulfur, typical gray soil, gravelly sierozem, soil, crop, biomass, growth, stem, field experiments.

**Purpose of the study.** Development of cultivation technologies *Artemisia leucodes* Schrenk producing biologically active terpenoids, used in medical practice.

**Methods of research.** For this purpose, both vegetative and field experiments in the Farish region of the Jizzakh region of the Republic of Uzbekistan were carried out at low (24 mg / kg) and medium-level (42 mg / kg) soil with mobile phosphorus. Annually, phosphorus fertilizers were applied in vegetation and field crops, respectively, 4 g / vessel and 140 kg / ha P<sub>2</sub>O<sub>5</sub> on medium-cost, 3 g / vessel and 105 kg / ha P<sub>2</sub>O<sub>5</sub> on low-phosphorus soil. In the vegetation experiments, the annual norm of nitrogen and potassium fertilizers was 5.0, respectively; 3.0 and 1.5 g / vessel respectively, 100; 75; 50 kg / ha in field experiments. Ammonium sulfate, urea, ammonium nitrate, superphosphate and potassium chloride were used in the experiments. Vegetational and field experiments were carried out according to the methods of the Scientific Research Institute of cotton growing (MA Belousov, 1977).

**Results of the study.** Investigations established that in the early development period of wormwood whitish grown on typical gray soil the content of gross nitrogen is characterized by a greater content than in wormwood whitish leaves grown on gravelly gray soil. Simultaneously, in these conditions, the content of protein and non-protein nitrogen increases in the leaves. With increasing the N: S ratio, the content of gross, protein and non-protein nitrogen also increases, which is more pronounced in leaves of wormwood grown on typical gray soil than in wormwood leaves grown on gravelly gray soil. The optimal N: S ratio that promotes increasing in gross, protein and non-protein nitrogen is 1: 0.20 for typical gray soil and 1: 0.25 for gravelly sierozem, which corresponds to 40 and 50 kg / ha sulfur at a nitrogen dose of 200 kg / ha. Consequently, these data indicate that the normal synthesis of proteins in leaves and the acceleration of the inclusion of non-protein nitrogen in the protein content of wormwood whitish on gravelly gray soil occurs at a higher level of sulfur nutrition than the wormwood whitish on typical gray soil. With the onset

of the flowering phase the content of total protein and non-protein nitrogen in wormwood leaves is higher on gravelly gray soil than in leaves of wormwood whitish on typical gray soil. With increasing the N: S ratio, the content of total nitrogen is markedly increased, but the content of protein nitrogen was somewhat larger in leaves of wormwood, whitish grown on gravelly gray soil than on typical gray soil.

More intensive conversion of nitrogen into complex compounds of nitrogen (proteins) occurs at ratio of N: S = 1: 0.20 on a typical gray soil and 1.5:0.25 on gravelly gray soil. And in this phase of development, a high content of nitrogen compounds is maintained at a ratio of N: S-1: 0.20-0.25, which is more pronounced on gravelly gray soil. Similar data were obtained in field experiments. Both in vegetation experiments and in field experiments, the content of nitrogen compounds in the early period of development is at higher level in the leaves of wormwood whitish grown on typical gray soil than the wormwood whitish grown on gravelly gray soil, and with the onset of the budding phase, the picture is reversed, which is confirmed by our data, stated in the second section of the paper. Consequently, wormwood whitish in the early period is more demanding for the introduction of sulfur on gravelly gray soil than on typical gray soil. In field experiments, the content of nitrates in wormwood whitish leaves was determined.

**Conclusions.** The optimal ratio of N: S, which facilitates the acceleration of the inclusion of nitrates in the metabolic processes, especially in the early period of development of wormwood, whitish, 1: 0.20 on a typical gray soil, and on detrital gray soil 1: 0.25 (or 40 and 50 kg / ha sulfur) .