

## **Ratio of nitrogen to sulfur as an indicator of the need of wormwood whitish to sulfur**

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*The results of our studies revealed that the N: S ratio varies depending on the soil conditions and the ratio of nitrogen to sulfur. In the leaves of wormwood whitish grown on a typical gray soil, the ratio (annual nitrogen norm 100 kg / ha) during the flowering phase was from 1: 0.10 to 1: 0.16, and on gravelly gray soil - from 1: 0.12 to 1: 0.18. It indicates relatively high supply of plants with sulfur on gravel gray earth than on typical gray soil. At the same time, in the control variant without sulfur, the N: S ratio decreases, which indicates an obvious insufficiency for the wormwood whitish in sulfur. As the ratio N: S increases, the ratio of these nutrients in the leaves increases, especially on gravelly gray soil.*

**Keywords.** Protein, wormwood, sulfur, nitrogen, phosphorus, fertilizers, mineral nutrition, gravelly gray soil, typical gray soil.

**Purpose of the study.** Wormwood whitish is well responsive to nitrogen, phosphorous to potassium (NPP) nutrition. It should be noted that in the course of the life cycle, wormwood whitish like other plants, need in many other nutrients. Thus, a positive effect of sulfur was revealed when the pk was applied to cereals jointly (Mosolov, 1976).

The physiological role of NPP and sulfur is associated with their participation in the synthesis of proteins, nucleic acids, aminoacids, etc. Therefore, their presence in nutrient medium is important condition for activating the metabolic processes underlying the high productivity of plants. Soils of gravelly gray soil feel a deficiency in the whole world, mainly due to a change in the assortment in the reduction of the production of sulfur-containing mineral fertilizers. The dynamics of the sulfur content of irrigated soils and its influence on cotton and other cultures have practically remained poorly researched (Gulimov, 1980, Todeset 1988 and others). At the same time, the need for sulfur nutrition in various agricultural crops is widely recognized in the world science. In the practice of England, the sulfur content in the plant is within 0.2% is taken as the threshold value indicating the loss and necessity of sulfur in the soil. In the USA special attention is paid to the ratio of nitrogen to sulfur that it should be in the 1: 0, 3: 0.6 zone (nitrogen dose of 200 kg / ha).

**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 by the method of Scientific Research Institute of cotton growing (MA Belousov, 1977). In the conditions of field experiments in the period of mass flowering and fruit formation, the ratio on the third sheet was studied to characterize the availability of wormwood to whitish.

**Results of the study.** The results of the studies show that the N: S ratio varies depending on the soil conditions and the ratio of nitrogen to sulfur. In the leaves of wormwood whitish grown on a typical gray soil, the ratio (annual nitrogen norm 100 kg / ha) during the flowering phase was from 1: 0.10 to 1: 0.16, and on gravelly gray soil – from 1: 0.12 to 1 : 0.18. It indicates a relatively high supply of plants with sulfur on gravel gray earth than on a typical gray soil. As the ratio N: S increases, the ratio of these nutrients in the leaves increases, especially on gravelly gray soil.

**Conclusions.** With the onset of the phase of the beginning of fruit formation in leaves of wormwood grown on a typical gray soil, the N: S ratio is somewhat reduced, but the regularity of the change remains as in the phase of the beginning of flowering of wormwood whitish in the range 1: 0.15-1: 0.16 on a typical gray soil And 1: 0.16-0.18 on gravelly gray soil in the flowering phase indicates the high availability of this plant with sulfur nutrition.