

INCREASING EFFECTIVENESS OF NITRIC FERTILIZERS USED BY ARTICHOKE PRICKLY (CYNARA SCOLYMUS L.) IN DIFFERENT SOIL CONDITIONS OF UZBEKISTAN

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Abstract: it has been ascertained in the research the increasing effectiveness of nitric fertilizers with the purpose of decreasing environment contamination and receiving ecologically pure production from artichoke prickly.

The results of conducted research revealed that the use of artichoke prickly at growing (Cynara scolymus L.) full of fertilizers, particularly with manure promotes decreasing of environment contamination and receiving ecologically pure production (biomass and seeds).

At the same time artichoke prickly grown in the conditions of typical sierozem has more medicinal raw material (leaves and seeds) than in the soil of bright sierozem.

Key words: nitrogen, immobilization, phosphorus, potassium, sodium, nitrates, sulphur, biomass.

Aim. In this connection development of methods for effective application of nitric fertilizers under the plants including artichoke prickly has not only scientific but practical importance, as it provides in the studied plants high crops of good quality, and also decreasing contamination level of the environment.

Transformation of nitric fertilizers in irrigated both typical and bright sierozem, and also its use by the plants depending on conditions of nitric nutrition have been studied not enough [1,2,4].

Research methods. In this regard we in 2011-2016 conducted both vegetation and field experiments on bright and typical sierozem soil of Samarkand and Tashkent regions of the Republic of Uzbekistan. The area of each plot is 480 m². Scheme of plants' arrangement is 60x40x1 with density of 36680 bushes per 1 hectare.

Repeatability of vegetation experiments is 10, and field 4 multiple.

Filling vessels was conducted in autumn with the soil taken from the field experiment (horizon of 0-50 cm) taking into account its genetic horizons.

Moisture of soil in vessels was supported at the level of 75% of complete field water capacity. Watering in field experiments was conducted according to the scheme 4-6-4.

Results of research. Results of conducted by us research testify to the fact that with applying manure decreases more the content of inorganic nitric fertilizers, not used by the plants of nitric fertilizers (at the end of its vegetation) on bright sierozem particularly applying manure more

than in typical sierozem.

Based on results of our research according to the balance and transformation of nitric fertilizers in the system soil-plant it can be stated that on typical sierozem with high content of organic substances and wide correlation C: N, in initial period of plant's development are more particular to applying nitrogen, than on bright sierozem.

As results showed, with beginning of flowering phase and maturing seeds provision of plants with nitrogen in typical sierozem is higher than in bright sierozem that is explained with release of earlier absorbed nitrogen by soil microorganisms.

Results of research in vegetation experiments ascertained that content of nitric fertilizers compounds depends on soil differences (Table1).

At first phase of vegetation (before mass budding) immobilization size of nitrogen from applying fertilizers on typical sierozem (or transformation of inorganic nitrogen into organic form in body of microorganisms) occurs more intensively than on bright sierozem.

That is why applying manure intensifies this process on typical sierozem that is connected with different content in this soil of organic remains mass and also correlation of C: N.

Table 1

Content change of organic and inorganic nitric fertilizers on typical and bright sierozem
(mg per vessel)

Annual norm g/vessel				Phases of development					
				2-3 of true leaves			Budding		
N	P	K	manure	Total	organic	inorganic	total	organic	inorganic
Bright sierozem									
6	5	2	-	1390	736	654	2848	1208	1640
6	5	2	400	1620	900	720	3004	1500	1504
Typical sierozem									
6	5	2	-	1694	1064	630	3136	1556	1580
6	5	2	400	1690	1250	440	3252	1640	1612

In connection with immobilization of nitrogen the content of available for plants inorganic compounds it in early phases of development and budding of plants decreases, particularly in conditions of bright sierozem.

All these facts promote decreasing of environment contamination and receiving ecologically pure production, i.e. biomass (overground part) from artichoke prickly.

Table 2

Content of nitric fertilizers in different soil conditions (mg/vessel).

Annual norm g/vessel				Phases of development					
				2-3 of true leaves			Budding		
N	P	K	manure	Total	organic	inorganic	Total	organic	inorganic
Bright sierozem									
6	5	2	-	1842	960	882	1362	1290	72
6	5	2	400	1992	960	1032	1722	1380	342
Typical sierozem									
6	5	2	-	2400	1260	1140	1770	1560	210
6	5	2	400	2460	1380	1080	1872	1442	432

It makes necessary to study effectiveness of terms for applying nitric fertilizers taking into account biological features of transformation nitrogen and soil conditions.

Conclusion. Research ascertained that *Cynara scolymus* L. grown on bright sierozem applying full fertilizers, particularly with manure, promotes decreasing of environment contamination and receiving more formation of ecologically pure seeds and biomass. Biomass size in the process is more on typical sierozem than on bright sierozem.

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