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Rakhimzhan Yeleshev, Djura Karagic, Karlyga Karayeva, Sanja Vasiljevic

Kazakh National Agrarian University, Almaty, Kazakhstan.
E-mail: Karliga_89@mail.ru

EFFECT OF MACRO- AND MICRONUTRIENTS ON SOIL FERTILITY AND NUTRIENT REGIME UNDER THE INTERCROPPING OF CORN AND SOYBEANS

Abstract. The level of productivity of agricultural crops is the main criterion for evaluating the effectiveness of the use of fertilizers. One of the most important ways to solve the problem of increasing the production of plant proteins is to expand the area of mixed crops of corn with soybeans for silage, providing reception of protein-rich juicy fodder, which does not require additional costs to the cultivation. The possibility and the need for co-cultivation of corn with soy in Kazakhstan are proved by several studies. Fertilizer is nutrition of plants, which affects their growth, development and productivity, the accumulation of substances in biophilic reproductive substances. Providing the necessary macro- and micronutrients for plants contributes to increase of productivity, improving product quality. This article presents the results of research carried out in the 2014-2016 in the irrigated meadow-chestnut soil in the joint maize with soy. On the meadow-brown soils of foothill irrigated in South-Eastern Kazakhstan we determined the optimal combination of rules and macro- and micronutrients in joint maize with soybeans on studying the effect of fertilizers on soil fertility, the dynamics and the creation of nutrients.

Introduction. Plants are provided with mineral nutrients mainly from the soil, so the extent of this provision depends on the nutritional regime of the soil during the growing season. The main techniques impact on soil nutrient regime include fertilizing, use of proper tillage, improving its structure and creation of favorable conditions for plants. Important factors of productivity inter crops of corn with soy are the biological relationship between components of the mixture, as well as conditions for the use of nutrients and moisture from the soil by plants during their joint development. The researchers admit the possibility of the use of root exudates of other plant species in phytocenosis therefore; mineral nutrition of corn and soybeans in the inter crops is somewhat different compared to their diet in separate crops [1, 2]. Particularly sensitive to corn nitrogen is nutrition in the period from germination until the ninth sheet. Therefore, it is advisable to nitrogen fertilization before sowing and holding early fertilizing with nitrogen fertilizers [3]. The mineral nutrition soybean major limiting factor is the phosphorus-containing compounds, as phosphorus has a direct impact on the yield of soybean [4].

Among the complex factors that determine the productivity of the inter crops of corn soya on irrigated lands, one of the leading seats for the correct use of fertilizers. The following are observations of materials for the nutritional regime of irrigated meadow-chestnut soil under inter crops of corn with soybeans.