Section 8. Agricultural sciences

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CHANGES OF THE MOBILE FORMS OF PHOSPHORUS IN SANDS UNDER INFLUENCE OF FERTILIZERS

Abstract. Form of connection, area, degree mobility and availability has importance. For cotton plant but not the absolute size the content of phosphorus.

Keywords: fixing, colloids, electro-kinetic, microorganisms accessible mineral fertilizer, erosion, mobile, total forms, concentration, soil solution, lignin, dung.

Introduction

In field conditions the experiences on revealing dynamics(changes) of growth of the mobile forms of phosphorus on a background of mineral fertilizers, 40 T/of the dung 60 T/of the lignin in un planned sand are carried out (spent) during cultivation of a cotton plant. The purpose and technique of researches [1].

The phosphoric fertilizers which have been brought in to soil of Central Ferghana, are exposed to significant transformations, therefore vary their assimilability and solubility It occurs as a result of various chemical, physical, physic-chemical and mi-

crobiological processes proceeding in soil applying of the various forms of fertilizers [2].

The fixing of phosphorus in soil occurs basically calcium and magnesium, to the less degree by aluminum and iron. Besides, phosphorus is fixed by microorganisms using it during vital activity, the microorganisms transform mineral phosphorus to in organic, inaccessible to plants. After dicing off of microorganisms the organic phosphorus again passes in to mineral form. The total contents of phosphorus in soil cannot serve as a decisive criterion of soil fertility. For an estimation, it(him) not absolute sizes of the contents phosphorus matter, and form of

connections, in which he is, degree of their mobility and availability for xiionna THHica [3].

For normal growth and development, it is important not only contents of nutritious elements in general, but also character of sea-sonal dynamics (changes) of these elements in soil, necessity for nutritious substances in the various periods of life of plants is cipferent. Dynamics (changes) soil phosphorus can depend on a number (line) of the factors, including concentration of electrolyte in a soil solution. The quantity of phosphorus can be defined (determined) by character of a surface soil colloids and by their electro-kinetic peculiarities, which can change not only for a long time, but also for the short period, especially in summer, when in soil vital activity of microorganisms is most intensive, the physics-chemical processes and chemical reactions caused by change of water and thermal modes of ground are quickly made. Water soluble forms of phosphoric fertilizers during applying them in to soil are strongly absorbed by soil. The fixing phosphates depend on a type of soil, temperature both and its degree of humidifying and forms of phosphoric fertilizers! Applying phosphoric and phosphorus-containable fertilizers considerably increases the contents of assimilable phosphorus in soil, thus sharply improves a phosphoric feed (meal) of plants [4]. The regular application of mineral fertilizers raises the contents of the total and mobile forms of nutritious elements in irrigating soil and increases their solubility. The strong influence on the contents of phosphorus in soil renders (with) erosion. The losses of phosphorus owing to erosion, as a rule, are proportional to losses of soil in account on unit of the area [5]. The losses of phosphorus are especially significant at erosion fine – dispersion able mineral and organic-mineral particles and organic substance, which structure contains basic weight of connections of the given element. By researches is established that the general(common) contains of phosphorus changes on a soil structure in a smaller measure, than hummus and nitrogen. Therefore, as against organic substance and soil nitrogen, the

difference in the contents of the general(common) and mobile forms of phosphorus in connection with of soil a degree erodiness cover in arable layer in all soil is more thickly less expressed [6]. The small contents mobile phosphates in erodible soil results in the well –known fact about high efficiency of the raised(increased) doses of phosphorus fertilizers on the majority washed off and Bbmyrax soil differences of all basic types and subtypes irrigating soil. Phosphorus is the scarcest nutritious element in irrigating conditions of plants and consequently agrochemical control is especially important of applying of phosphoric fertilizers in a combination to others and the study of receptions differential application of phosphoric fertilizers in view of security of soil deserves the most serious attention. The establishment of dynamics (changes) mobile phosphates in planned hilly –barkhan sand depending on norms of fertilizers has the large practical meaning(importance) for correct and their most effective use. This researches in conditions of sand of Central Fergana hornet bun carried out before.

Results of researches: Experience on study of dynamics(changes) of the mobile forms of phosphorus has bun investigated by us in conditions of field experience in territory of Ahunbabaev region of the Fergana area under the circuit, where at cultivation of cotton plant on planned barkhan sand of Central Fergana the raised(increased) norms of mineral fertilizers and dung, lignin are used. The experiences were spent carried from 1999 to 2003yy. In three times repetition according to field techniques and vegetal experiences, which are published in a public and press. The results of the analysis of mechanical structure and sand of Central Fergana where were carried experience up to a beginning of a field experience are given in the table 1, from which it is visible, that the sand are poor by nutritious elements. Humus almost is absent nitrogen, phosphorus and potassium contains in insignificant quantities (amounts). It is necessary to note that according to the content water-soluble salts concern

to KaTeropHKaunsalted and midsoles, category where dense rest 0,388–0,482% contain. From given it is visible that applying under cotton-plant Kr /ra at 0–50. Agrochemical researches on study of seasonal dynamics (changes) of mobile phosphates in sand show that in conditions planned hilly-barkhan sand with increase of norm used nitric, potassium, phosphoric fertilizers the contents of mobile phosphorus at 0–30 sm a layer of sand raises. In spring, when cotton-plant had 2–4 present sheets, after applying phosphoric fertilizers in norms 105, 140, 175kg/ra, contents of mobile phosphorus in sand on depth 0–50 sm tab.2. Has increased with 1,4–2,3 up to 10,3–12,5 Mr/kg, in variant 4 and 5 where are brought in addition in according 40 T /ra dung, 60T / ra lignin in the quantity(amount) of the mobile forms of phosphorus grows up to 11,8–15,1 Mr / kg of sand. The same law in change of the contents mobile phosphates in sand is marked by us in phases

burdening, flowering and in the end vegetation of the cotton plant per all years of researches. The contents of mobile phosphorus in sand depending on norms of the applying fertilizers under cotton plants (average for 1999–2003y.y).

Conclusions: In the whole greatest quantity(amount) of mobile phosphorus in sand is fixed in variants with entering on a background of mineral fertilizer, where are applied 40T/ ra dung and 60T/ ra lignin. By the end of cotton vegetation, the contents it(him) is sharply reduced, that is explained carrying odit of phosphorus to plants cotton by the temperature factor and decrease(reduction) of biological activity of microorganisms. Proceeding from above stated it is possible to recommend by the farmer, which rises of a cotton plant on the planned sand entering, N200–250, P205 140–175, K20 100–125 in combination with 40 T/ra dung or 60T/ra lignin.

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