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EFFECT OF SEED ENCAPSULATION ON COTTON YIELD

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Abstract: In agriculture, it has been studied that the use of non-traditional agro-ores as additional nutrients gives good results in maintaining and increasing soil fertility. It is known that the reduction of organic substances in the soil, especially humus, sharply reduces the effectiveness of synthetic fertilizers used to obtain high yields from crops. In mitigating the shortage of mineral and local fertilizers, non-traditional agro-ores glauconite, phosphorite and bentonite slurries are rich in many micro- and macro-elements.

It was found that the number of pods in the seedling was different from that of the seedling sown in the normal way when monitoring work was carried out on the seedling encapsulated with bentonite powder. This in itself greatly affects the productivity of cotton.

The cotton yield in the control areas of the experimental fields of the farm was 24.2 t/ha, while the yield in the experimental plots where the seeds were sown with capsules was 28.6 t/ha. This means that the yield level in the experimental fields was 4.4 t/ha, i.e. 15.4% higher than the yield in the control fields.

28.3 t/ha of cotton were obtained in the control areas of the fields, and 33.7 t/ha were obtained from the experimental plots where bentonite powder was used.

Fertilization of cotton seed and seedling number

In the care of cotton, along with all the agrotechnical measures used during its growth period, it is important to leave sufficient seedlings in cotton. In particular, there is a problem of getting sufficient seedlings from cotton in soils with insufficient irrigation water, varying degrees of salinity, and similar unfavorable conditions, and for this, it is necessary to achieve a high level of fertility and obtain healthy seedlings by applying technologies appropriate to the conditions.

In the experiments conducted by us, the effect of sowing seeds of different varieties with bentonite clay powder on the thickness of cotton seedlings was studied under different climatic conditions. In case of cotton varieties, seeding in shell had a specific effect on their germination and healthy development of existing seedlings.

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When observations were made 6 days after the date of seed sowing, the sprouted sprouts were 68-70%, 61-64% and 65% in the variants of Bukhoro-102, Bukhoro-6 and Bukhoro-8 varieties planted in the normal way, while in the variants planted with shell the figures were 84%, 79% and 81%. The same indicators were 92, 91, and 93% in conventionally planted variants, and 97, 96, and 96% in shell-planted variants when observed 3-5 days after germination.

Since the seeds were planted in a shell with bentonite clay powder, it had a unique positive effect on their germination in the spring and the healthy and vigorous growth of the seedlings. The reason for this is the richness of microelements in the composition of bentonite clay and its sorption properties.

Feeding cotton with bentonite and mineral fertilizer suspension during the growing season caused healthy development of existing seedlings. At the beginning of the season, there were on average 83.1, 83.6, and 84.5 thousand seedlings in the experimental fields, i.e., Bukhara-102 in the conditions of Navoi region, Bukhara-6 and Bukhara-8 in the control variants of the Bukhara region. by the end, as a result of various unfavorable climatic conditions and other measures, the number of seedlings decreased by 4.4, 3.5 and 5.3 thousand pieces.

Bentonite clay powder was used only for seed shelling in the options, from 84.5, 85.3 and 85.1 thousand seedlings at the beginning of the period of operation to 3.3, 3.4 and 3.6 thousand units at the end of the period of operation.

Among the options studied in the experimental field, the best preservation of seedlings was observed in options that used shelling from bentonite clay powder and suspension with urea in leaf feeding, that is, the thickness of seedlings decreased by 2, 1.4 and 1.8 thousand grains.

It can be said that crusting with bentonite clay powder and using a suspension with urea in foliar feeding caused a reduction in the mortality of existing seedlings. The use of bentonite clay powder in foliar feeding during the growing season helps the plant in stressful situations in various adverse environmental conditions. The fact that bentonite clay retains water for a long time, forms a thin film when sprinkled on the surface of the leaf, protects the water from excessive evaporation from the surface of the leaf, and also prevents the evaporation of the mineral fertilizer sprinkled with it and causes it to be fully absorbed, has a positive effect on the development of the plant.

In conclusion, it can be said that the above-mentioned properties of bentonite clay gave positive results in cotton yield in the experiments. It is possible to achieve high yield by using bentonite clays even with 3 irrigations during the season instead of 4 times, i.e. saving up to 700-1000 m3 of irrigation water.

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