

# AGRO-METHODS TO INCREASE CROP SEEDS YIELD AT A CORN HYBRIDIZING PLOT

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*In field experiments for 2018-2019, data were obtained on the effects of mechanized mowing of the panicle of the fertile mother form of the simple Terek hybrid (Rf7c) and the three-line Camilla hybrid (Calendula interline hybrid) on the effectiveness of the methods of applying fertilizers and foliar fertilizing on hybrid crops under irrigation conditions.*

*The results of determination of changes in leaf surface area, soil moisture during the vegetation period of maize and irrigation rate for years with varying weather conditions are presented.*

*According to the goal of the work, it was revealed that during mechanized panicle removal in the maternal form of corn, the upper leaves of the stem (2-5pcs) are alienated along with the panicle. At the same time, the leaf assimilation apparatus of corn decreases by 8-17% in the Rf7c s / o line, Calendula simple hybrid by 3-12%, with a seed yield of the control Terek hybrid of 18.3c / ha of Camille trilinear hybrid 22.6c / ha. Fertilizers increase the productivity of plants of the maternal line of maize Rf7c in variants with a panicle break. The maximum increase in seed yield is provided by fertilizing in two terms; N16P16 K16 with sowing corn and N36P26 K16 for top dressing locally to a depth of 12-15cm. The same yield indicator is ensured from the introduction of the entire dose of nitrogen (N52) for pre-sowing cultivation of phosphorus-potash (P42 K32) in top dressing locally to a depth of 10-12 cm.*

*The studied fertilizer application methods provide the maximum yield of Terek hybrid seeds of the order of 20.3-23.4 centners / ha, an increase to the control at the level of 4.0-6.0 centners / ha.*

*The most effective pre-sowing fertilizer application (N16P16K16) provides an increase of 1.8-3.0 t / ha of F1 seeds of the Terek hybrid (according to the panicle removal scheme). At the same level, yield is formed against the background of N52P42K32 introduced in the spring for cultivation, which indicates a weak effect of fertilizers when applied surface to the soil.*

*The reaction of maize s / o line Rf7c and a simple interlinear hybrid Calendula to foliar feeding with complex micronutrients is ambiguous. The highest efficiency of double top dressing with Omex 3x was noted, an increase in the experiment of 1.8-2.5c / ha s / o line Rf7c and 3.8-4.5c / ha of a simple hybrid Calendula. A single feeding is manifested by lower yield indicators of both maternal forms (from 0.3-1.6c / ha Rf7s and 1.7-3.4c / ha Calendula).*

**Keywords:** seeds, productivity, hybrid, corn photosynthesis, productivity, lines. agricultural practices, drugs.

## REFERENCES

1. Baibakov R.F., Mishina O.S., Belopukhov S.L., Ivanov R.T., Rakipov N.G. *Issledovaniya deystviya bioregulyatora Entofosf na morfologicheskiye pokazateli i produktivnost' grechikhi* [Investigations of the effect of the Entophosph bioregulator on morphological indicators and buckwheat productivity] // Agriculture. 2019. No. 5. Pp. 12-16.
2. Buyankin N.I., Krasnoperov A.G. *Vneshnyaya sreda i urozhay* [External environment and harvest] // Agriculture. 2008. No. 8. Pp. 31-33.
3. Voronin A.N., Solovchenko V.D., Logvinov I.V. *Vliyaniye sposobov obrabotki pochvy i urovnya udobrennosti na agroekonomicheskuyu effektivnost' vozdeleyvaniya kukuruzy na zerno* [The influence of soil cultivation methods and fertilizer level on the agro-economic efficiency of cultivating corn for grain] // Corn and sorghum. 2019. No. 4. Pp. 31-34.

4. Sotchenko Yu.V., Galachevskaya L.A., Terkina O.V. and others. *Izucheniye novykh gibridnykh liniy kukuruzy selektsii VNIK* [The study of new hybrid lines of corn breeding VNIK] // Corn and sorghum. 2019. No. 1. Pp. 30-34.
5. Azubekov L.Kh., Tembotov Z.M. *Ispol'zovaniye mineral'nykh udobreniy, protravitelya i biopreparatov na kukuruze* [The use of mineral fertilizers, disinfectants and biological products on corn] // Agriculture. 2012. No. 8. Pp. 15-16.
6. Volodarsky N.I. *Biologicheskiye osnovy vozdeystviya kukuruzy* [The biological basis of corn cultivation]. M.: Cosmos, 1975. P. 254.
7. Shmalko I.A., Bagryantseva V.N. *Effektivnyye udobreniya i regulatory rosta dlya kukuruzy* [Effective fertilizers and growth regulators for corn] // Corn and sorghum. 2016. No. 2. Pp. 17-20.
8. Shatilov I.S., Stolyarov A.I. *Rukovodstvo po programmirovaniyu urozhayev* [Crop Programming Guide]. M.: Rosselkhozizdat, 1986. P. 156.
9. Bunin M.S., Sadovskaya L.N. *Struktura informatsionnogo massiva dannykh «AGROS» po problemam tochnogo zemledeliya* [The structure of the information data array "AGROS" on the problems of precision farming] // Agriculture. 2019. No. 5. Pp. 12-16.
10. Mamsirov N.I., Blagopoluchnaya O.R., Mamsirov N.A. *Effektivnost' primeneniya biopreparatov pri vozdeystvii zernovykh kul'tur* [The effectiveness of the use of biological products in the cultivation of grain crops] // Agriculture. 2004. No. 5. Pp. 24-25.

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