EFFICIENCY OF FOLIAR ADDITIONAL FERTILIZING OF CORN WITH FERTILIZERS OF BRAND BATR

V.N. BAGRINTSEVA, I.N. IVASHENENKO

FSBSI «All-Russian research scientific institute of corn» 357528, Stavropol region, Pyatigorsk, 14-B Ermolov str. E-mail: 976067@mail.ru

In 2018-2020 the researchers at the All-Russian Research Scientific Institute of Corn studied the effectiveness of foliar additional fertilizing of corn plants in the phase of 7-8 leaves with organic and mineral fertilizer Batr 40 Nitrogen (3.0 l/ha), Batr Max (1.0 l/ha), as well as microfertilizer Batr Zinc $(1.0 \ l/ha)$ in comparison with calurea (carbamide) at a dose of N_{10} . Corn extranutrition with fertilizers had a positive effect on the growth of plants, contributed to an increase in their height. On average, over 3 years, the increase in the yield of green mass of the hybrid Mashuk 220 MV from the fertilizer Batr 40 Nitrogen was 6.85 t/ha, from the fertilizer Batr Max 4.88 t/ha. On average for 2019-2020 the increase in the yield of green mass of corn from fertilizing with fertilizer Batr 40 Nitrogen was 8.19 t/ha, Batr Max – 6.89 t/ha, Batr Zinc – 6.92 t/ha. Spraying corn with fertilizers Batr 40 Nitrogen, Batr Max and Batr Zinc provided an increase in the length of the ears, the number of grains on the cob and their weight. Foliar additional fertilizing of plants with fertilizers Batr 40 Nitrogen, Batr Max gave significant increases in grain yield, which averaged 0.43 and 0.44 t/ha for 2018-2020. The combined use of these fertilizers did not result in a greater yield increase. Microfertilizer Batr Zinc on average for 2019-2020 increased grain yield by 0.73 t/ha, while the increments from fertilizers Batr 40 Nitrogen and Batr Max for the same years were 0.30 and 0.39 t/ha, respectively. Compared with the use of fertilizers for foliar additional fertilizing with Batr 40 Nitrogen (3.0 l/ha), Batr Max (1.0 l/ha) and Batr Zinc (1.0 l/ha) spraying corn in the phase of 7-8 leaves with calurea at a dose of N_{10} is less effective.

Keywords: corn, hybrid, fertilizers, foliar dressing, green mass, grain, yield.

REFERENCES

1. Muhammad Aqeel Sarwar, Muhammad Tahir, Waqas Shehzad, Sajid Hussain, Muhammad Imran. Efficacy of Boron as Foliar Feeding on Yield and Quality Attributes of Maize (Zea mays L.) // Biological Sciences-PJSIR. 2018. 61(1). Pp. 9-14.

2. Xu Guo-hua, Shen Qi-rong, Zhen Wen-juan, Tang Shen-hua, Shi Rui-he. Biological responses of wheat and corn to foliar feeding of macronutrient fertilizers during their middle and latter growing periods // Acta pedologica sinica. 1999. 36(4). Pp. 462-468.

3. El-Fattah A.A.A., Selim E.M., Awad E.M. Response of corn plants (Zea mays) to soil and foliar applications of mineral fertilizers under clay soil conditions // Journal of Applied Sciences Research. 2012. № 8. Pp. 4711-4719.

4. Abu-Dahi Y.M., Shati R.K. Effect of foliar feeding of iron, zinc and potassium on growth and yield of corn // Alfurat Journal Agricultural Sciences. 2009. №12. Pp. 82-94.

5. Safyan N., Naderidarbaghshahi M.R., Darkhal H., Shams M. Effect of foliar application of micro elements on growth and yield of the corn // Research on Crops 2011. Vol. 12. № 3. Pp. 675-679.

6. Adaev N.L., Khamzatova M.Kh., Amaeva A.G., Muuev A.A., Adaev A.N. *Itensifikaciya systemy udobreniya kukuruzy v usloviyakh orosheniya v Chechenskoy Respublike* [Intensification of the corn fertilization system under irrigation conditions in the Chechen Republic] // Corn and sorghum. 2019. № 2. Pp. 14-21.

7. Lomovsky D.V. Produktivnost' kukuruzy v zavisimosti ot obrabotki semyan protravitelyami, mikroudobreniyami i prikornevoy podkormki makroudobreniyami na vyshchelochennom chernozeme Zapadnogo Predkavkaz'ya [Productivity of corn depending on seed treatment with dressing agents, microfertilizers and root additional dressing with macrofertilizers on leached chernozem of the Western Ciscaucasia]: author's abstract of dissertation for the degree of Candidate of Agricultural Sciences. Krasnodar, 2007. 24 p.

8. Taran D.A. *Produktivnost' gibridov kukuruzy v zavisimosti ot priposevnogo vneseniya i podkormki azotom i gumatom kaliya na chernozeme vyshchelochennom Zapadnogo Predkavkaz'ya* [Productivity of corn hybrids depending on the pre-sowing application and feeding with nitrogen and potassium humate on leached chernozem of the Western Ciscaucasia]: author's abstract of dissertation for the degree of Candidate of Agricultural Sciences. Krasnodar, 2013. 24 p.

9. Bagrintseva V.N., Bukarev V.V., Nikitin S.V., Cherkasova M.A. *Effektivnost' nekornevoy podkormki kukuruzy agrokhimikatami* [Efficiency of foliar additional corn feeding with agrochemicals] // Corn and sorghum. 2019. № 2. Pp. 3-7.

10. Bagrintseva V.N., Ivashenenko I.N. *Otzyvchivost' gibridov kukuruzy ZEA MAYS L. na nekornevye podkormki agrokhimikatami* [Responsiveness of corn hybrids *ZEA MAYS L.* to foliar fertilizing with agrochemicals]. Problems of Agrochemistry and Ecology. 2020. № 3. Pp. 15-20.

Information about authors:

Bagrintseva Valentina Nikolaevna, Doctor of Agricultural Sciences, Professor, Chief Researcher, Acting Head of the Department of Corn Cultivation Technology of the All-Russian Scientific Research Institute of Corn.

357528, Stavropol region, Pyatigorsk, 14-B Ermolov street.

E-mail: maize-techno@mail.ru

Ivashenenko Ivan Nikolaevich, Candidate of Agricultural Sciences, Leading Researcher, Department of Corn Cultivation Technology of the All-Russian Scientific Research Institute of Corn.

357528, Stavropol region, Pyatigorsk, 14-B Ermolov street. E-mail: ivan-grass@mail.ru