

REFERENCES

1. Kuznetsova S.V., Bagrintseva V.N., Guba E.I. The effect of herbicide weed phytocenosis suppression in corn crops. *Vestnik zashchity rasteniy* [Herald of Plant Protection]. 2019. No. 2. Pp. 40–45. [\(In Russian\)](#)
2. Bagrintseva V.N., Kuznetsova S.V. Effective corn protection from weeds. *Materialy mezhdunarodnoy nauch. konferentsii* [Proceedings of the international scientific conference]. 2013. Pp. 33–40. [\(In Russian\)](#)
3. Makhankova T.A., Golubev A.S., Borushko P.I. New herbicide Adengo for the corn protection. *Zashchita i karantin rasteniy* [Protection and quarantine of plants]. 2013. No. 3. Pp. 27–31. [\(In Russian\)](#)
4. Bijanzadeh E., Ghadiri H. Effect of separate and combined treatments of herbicides on weed control and maize (*Zea mays* L.) yield. *Weed Technology*. 2006. 645 p.
5. Salarzai M. Effect of different herbicides on weed population and yield of maize (*Zea mays* L.). *Pak. J. Agric. sci.* 2001. Vol. 38. Pp. 75–77.
6. Guba E.I., Bagrintseva V.N., Kuznetsova S.V. *Gerbitsidy dlya zashchity kukuruzy* [Herbicides for the corn protection]. *Zashchita i karantin rasteniy* [Protection and quarantine of plants]. 2021. No. 6. Pp. 21–23. [\(In Russian\)](#)
7. Altukhova T.V., Kostyuk A.V., Spiridonov Yu.Ya. et al. *Kak zashchitit' kukuruзу ot ambrozii polynolistnoy* [How to protect corn from ragweed]. *Zashchita i karantin rasteniy* [Protection and quarantine of plants]. 2008. No. 7. Pp. 38–39. [\(In Russian\)](#)
8. Kuznetsova S.V., Bagrintseva V.N. Herbicides for ambrosia weed control in corn crops. *Zashchita i karantin rasteniy* [Protection and quarantine of plants]. 2018. No. 6. Pp. 41–43. [\(In Russian\)](#)
9. Adinyaev E.D., Adaev N.L. *Sornyaki i mery bor'by s nimi* [Weeds and control measures]. Vladikavkaz, 2006. 228 p. [\(In Russian\)](#)
10. Bagrintseva V.N., Kuznetsova S.V., Guba E.I. Herbicide Adengo on corn. *Zashchita i karantin rasteniy* [Protection and quarantine of plants]. 2015. No. 9. Pp. 45–46. [\(In Russian\)](#)
11. Kuznetsova S.V., Bagrintseva V.N. Application efficiency of the new herbicide Kreutzer. *Agrokimiya* [Agrochemistry]. 2021. No. 10. Pp. 36–44. [\(In Russian\)](#)
12. Filev D.S., Tsikov V.S. et al. *Metodicheskiye rekomendatsii po provedeniyu polevykh opytov s kukuruzoy* [Guidelines for field experiments with corn]. Dnepropetrovsk, VNI of corn VASKhNIL. 1980. 54 p. [\(In Russian\)](#)
13. Veletskiy I.N. *Tekhnologiya primeneniya gerbitsidov* [Herbicide applying technology]. L.: Agropromizdat, Leningrad branch, 1989. 176 p. [\(In Russian\)](#)
14. Dospekhov B.A. *Metodika polevogo opyta* [Methods of field experiment]. Moscow: Kolos, 1979. 416 p. [\(In Russian\)](#)

Original article

CORN YIELD DEPENDENCE ON WEEDS

V.N. BAGRINTSEVA, S.V. KUZNETSOVA, E.I. GUBA

FSBSI «All-Russian research scientific institute of corn»
357528, Russia, Pyatigorsk, 14-B Ermolov street

Annotation. Studies were carried out in 2019-2021 on the experimental field of the All-Russian research scientific institute of corn in the zone of sufficient moistening in the Stavropol region, to study

the dependence of the grain yield of the corn hybrid Mashuk 355 MV on weeds using the herbicides Kreutzer, VDG and Adengo, KS. Tasks of the work included the determination of the weed species composition of the agrophytocenosis component, amount, phytomass and the correlation between corn yield and weeds. The species composition of the segetal vegetation was represented by annual monocotyledonous and dicotyledonous and some perennial weeds. Corn crops are seriously damaged by the dicotyledonous plant ragweed (*Ambrosia artemisiifolia* L.) in the Stavropol region, under conditions of sufficient moistening. The most common and harmful among monocotyledonous class is yellow-foxtail grass (*Setaria glauca* L.). Weed counts showed a high herbicidal activity of the applied preparations. Data analysis of the corn grain yield showed that the lowest yield in the experiments was obtained without herbicides applying. The maximum increase in the grain yield of the hybrid was obtained in the variant with the introduction of the herbicide Kreutzer. Yield increase when using herbicide Kreutzer for 2019-2021 over the years amounted to 1.98; 1.22 and 0.21 t/ha. Increases of 1.44; 1.00; 0.52 t/ha were obtained from the action of the herbicide Adengo. A correlation analysis was carried out, to identify the weeds impact on the corn grain yield which revealed an inverse linear dependence – the less weeds amount and their weight in corn crops, the higher is the grain yield.

Keywords: corn, herbicides, weeds, yield

Information about the authors

Bagrintseva Valentina Nikolaevna, acting as a Head of the Corn cultivation technology Department, Chief Researcher, Doctor of Agricultural Sciences, Professor, FSBSI All-Russian Research Scientific Institute of Corn;

357528, Russia, Pyatigorsk, 14-B Ermolov steet;

maize-tehno@mail.ru, ORCID: <https://orcid.org/0000-0002-7116-1974>

Kuznetsova Svetlana Vasilievna, Leading Researcher, Candidate of Agricultural Sciences, Corn cultivation technology department of FSBSI All-Russian Research Scientific Institute of Corn;

357528, Russia, Pyatigorsk, 14-B Ermolov steet;

maize-tehno@mail.ru, ORCID: <https://orcid.org/0000-0001-6774-0351>

Guba Elena Isaakovna, Junior Researcher, Corn cultivation technology department of FSBSI All-Russian Research Scientific Institute of Corn;

357528, Russia, Pyatigorsk, 14-B Ermolov steet;

maize-tehno@mail.ru, ORCID: <https://orcid.org/0000-0002-2548-8298>