



EFFECTS OF HERBICIDE APPLYING RATES AND TIMING ON SEEDLING THICKNESS OF CORN

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Abstract

The article describes the effects of four herbicides used for weed control on the growth, development, and productivity of different varieties and hybrids of corn before planting and during the growing season.

Keywords: herbicide, seed, grain, weed, corn, seedling, field fertility, sprout, stomp, super stomp, elyumis, miladar duo, paganometer.

It is well known from the scientific literature that the sowing of corn seeds begins in the spring when the soil warms up to 10–12° C. If sown too early, the seeds will rot, if sown too late, weeds may attack.

According to recommendations of R. O. Oripov`s, N. Kh. Khalilov`s [58; 168–p.], the last ten days of March and the beginning of April in Namangan region are the optimal periods for sowing corn. Planting methods are of great importance in obtaining a high and stable yield from corn. Correctly fixing the planting scheme will help to create an optimal feeding area for each plant and provide sunlight.

In the experiment, the seeds of NS 205 F1 and Moldavskiy 215 AMV varieties of corn were sown in the scheme 70–20–1. Pure seeds with high fertility were planted for planting in the experiment. The seeds were found to be 100% viable when tested in the laboratory. However, when the germination of seeds planted in field conditions was observed, it was found that some differences were observed compared to laboratory conditions.

In particular, in the background of using herbicides together with planting seeds, the NS 205 F1 hybrid variety of corn was planted, and in control version 1 without herbicide applying, it was observed that the germination of seedlings was an average of 70.2 seeds per 1 square meter, and the field fertility was equal to 98.3%. The number of seedlings compared to the control option, with Stomp (standard) herbicide applied at the rate of 4.0 l/ha along with planting, the number of sprouts germinated was 69.0 pcs. It was found that 1.1 pieces/pm, and field germination of seeds was 1.6% less.

Along with planting the seeds of this variety, Super stomp against weeds, 33% em.k. in the 3–4 versions, when the herbicide was applied at the rate of 3.0 l/ha and 6.0 l/ha, the average number of sprouts was 69.0–67.9 units/pm, and the field fertility of the seeds was 96.7–95.1 %, it was noted that the number of germinated seedlings





decreased by 1.1–2.3 units/pm, and the field germination of seeds decreased by 1.6–3.2%, respectively, compared to the version 1 of control without herbicide application. When herbicides are used in the period of 2–3 leaves of corn plants, the germination of seedlings and the field fertility of seeds were analyzed in the section of the versions, and the number of sprouts germinated in the version 5, in which no herbicide was applied, was 71.1 units/pm on average, and the number of seeds if the field fertility was equal to 99.6%, Miladar duo k.s. It is planned to use (standard) herbicide at the rate of 1.2 l/ha, in version 6, the number of germinated seedlings is 71.0 units/cm, the field germination of seeds is 99.5%, it is planned to use the herbicide Elyumis 105 at the rate of 1.0 l/h in version 7, the number of sprouts is 71.1 units/pm, the field germination of seeds is 99.6%, Elyumis 105 herbicide was used at the rate of 2.0 l/h, and in version 8, the number of sprouts that have germinated is 71.0 units/pm, the field germination of seeds is suitable was 99.5%, and it was noted that almost no differences were observed compared to the control option.

When the degree of germination of seedlings was studied in the variants placed on the background of herbicide application along with planting seeds of the Moldavsky 215 AMV variety of corn, the number of germinated seedlings in version 9, which did not apply herbicide along with sowing of seeds, was 70.2 units/pm, and the germination rate of seeds was 98.3%. It was determined that, along with planting the seeds, Stomp (standard) herbicide against weeds was applied at the rate of 4.0 l/h, in the version 10, the germination of seedlings was 70.2 pieces/pm, the germination of seeds was 98.3%, and did not differ compared to the control.

Super stomp, 33% em.c. and when versions 11 and 12 were used with the herbicide at rates of 3.0 l/h and 6.0 l/h, the germination of seedlings was 69.0–67.9 units/pm, the seed germination rate was 96.7–95.1% and it was noted that the number of germinated seedlings was 1.1–2.3 units/cm, and the field germination of seeds was lower by 1.6–3.2%, respectively, compared to the control option without herbicide applying.

When herbicides were applied when 2–3 leaves of the corn plant were applied, the field germination of seeds was analyzed in the variants placed in the background, and in the control version 13 without herbicide applying, the germination of seedlings was 71.0 units/pm, and the field germination of seeds was 99.5%, Miladar duo k.s. (standard) herbicide 1.2 l/h used, the number of germinated seedlings in version 14 was 71.1 units/pm, the field germination of seeds was 99.6%, Elyumis 105 herbicide 1.0 l/h and 2.0 l/h. In versions 15 and 16, which were used at the rate of 1000 g, the germination of seedlings was 71.1–71.0 units/pm, and the field germination of seeds





was equal to 99.6–99.5%, and it was found that there were no significant differences compared to the control option version 13, where no herbicide was applied.

From the obtained data, it can be seen that the field germination of seeds decreased from 1.6% to 3.2% compared to the version without herbicides in the version where Stomp (standard) and Super stomp herbicides were used along with planting seeds in both varieties of corn.

However, at the end of the period of operation, when the actual seedling thicknesses of the versions were studied, it was noted that sharp differences were observed compared to the control version.

For example, when the seedling thickness was analyzed in the versions where weed herbicides were used along with planting seeds of the NS 205 F1 hybrid variety of corn, in version 2, where Stomp (standard) herbicide was used at the rate of 4.0 l/h along with seeds, the seedling thickness was 65 by the end of the effective period 7 units/pm, and the viability of the germinated seedlings was 95.1%, respectively, compared to control version 1 without applying of herbicide along with sowing, the seedling thickness was 20.4 units/pm, and the viability of the germinated seedlings was 30.6% was found to be higher.

Along with planting the seeds of this variety, Super stomp, 33% em.k. at the end of the applying period of versions 3 and 4, when the herbicide was applied at the rates of 3.0 l/h and 6.0 l/h, the average seedling thickness was 65.7–63.5 pieces/cm, and the viability of sprouted seedlings was 95.1 –93.5%, compared to version 1, where no herbicide was applied along with sowing, the seedling thickness was 20.4–18.2 pieces/cm, and the seedling viability was 30.6–29.0% higher, respectively.

When the herbicides made the NS 205 F1 hybrid seedlings produce 2–3 leaves, it was observed that the aforementioned laws were reflected in the analysis of seedling thickness and seedling viability.

In particular, Miladar dua k.s. When the (standard) herbicide was applied at the rate of 1.2 l/h, at the end of the period of operation, when the version 6 was analyzed, the seedling thickness was 70.4 pieces/cm, and the viability of the seedlings was 99.1%, compared to the version 5, where no herbicide was applied. seedling thickness was observed to be 28.0 pieces/cm, and the viability of sprouted seedlings was higher by 39.5%. Elyumis 105 herbicide was applied at the rate of 1.0–2.0 l/h during the period of 2–3 leaf formation of seedlings in verisons 7 and 8, seedling thickness was 70.6–70.4 pieces/cm, and it was noted that the viability of sprouted seedlings was 29.0–27.4% higher.

In the experiment, it was observed that the above laws were reflected when the seedling thickness was studied in the variants planted with the seeds of the Moldavsky





215 AMV variety of corn. That is, in the version 10, in which Stomp (standard) herbicide was applied at the rate of 4.0 l/h along with planting seeds of the Moldavskiy 215 AMV variety of corn, the average seedling thickness at the end of the period was 65.6 pieces/cm, and the viability of the sprouted seedlings was 93.5% compared to control version 9 without applying of herbicide, it was observed that the seedling thickness was 19.2 pcs. in versions 11–12, where the herbicide was applied at the rate of 3.0–6.0 l/h, the thickness of the seedling was studied on average 65.7–63.5 units/cm, and the viability of the seedlings was equal to 95.1–93.5%, respectively. It was noted that the seedling thickness was 19.3–17.1 pieces/cm, and the viability of seedlings was higher by 29.0–27.4% at the end of the period of operation compared to the control without herbicide applying version 9.

When the seedlings of Moldavskiy 215 AMV produced 2–3 leaves, the thickness of the seedling and the viability of the seedling were analyzed in the herbicide-applied variants, Miladar duo k.s. (standard) herbicide was applied at the rate of 1.2 l/h in version 14, the seedling thickness was 70.5 pieces/cm, seedling viability was equal to 99.1%, and the seedling thickness was 27.0 pieces/cm, compared to the control without herbicide applying version 13, and the viability of seedlings was found to be 37.9% higher, the average of 70.5–70.2 pieces/cm, taking into account the thickness of the seedlings, in versions 15 and 16, when Elyumis 105 herbicide was used at the rate of 1.0–2.0 l/h and the viability showed 99.1–98.8%, respectively, the number of leaves was 27.0–26.7 pcs. .

From the obtained results, it can be seen that in both cultivars of corn, compared to the control version without herbicide applying, as a result of the applying of herbicides along with seeding, the seedling thickness was from 19.9 pcs/pm to 23.8 pcs/pm, and the viability of the germinated seedlings was 27.4 % to 30.6% higher.

When herbicides were applied to corn cultivars during the growing season, i.e., when the seedlings formed 2–3 leaves, the seedling thickness was 31.2 units/pm to 32.9 units/pm, and the viability of the sprouted seedlings was increased compared to the control version without herbicide applying. It was found that 37.6% to 39.7% showed higher result, respectively.

References:

1. Atabaeva H., Kadirkhojaev O. Plant science // Textbook, Tashkent–2006. B. 107.
2. Boqiev D.T. Laboratory work and practical training on the basics of general farming and land reclamation // Study guide. Tashkent–2007, B. 10–11.
3. Oripov R.O., Khalilov N.Kh. Plant science // Study guide, Tashkent–2006. B. 168–175.





4. Khudoykulov J.B., Azizov K.K. and others. Cultivation of corn // 100 book collection, 24-books. "Agrobank" ATB - 2021. B. 18–
5. Yormatova D. Plant science // Textbook, Tashkent–2002. B. 66.
6. Jumaboev Z., Makhmudov O. Sh. Teshabaev. Effect of agrotechnical methods of weed control on soil mass and yield of winter wheat. // Bulletin of agricultural science of Uzbekistan. Journal of agrarian science of Uzbekistan.

