**American Journal of Biodiversity**
https://biojournals.us/index.php/AJB
**ISSN: 2997-3600**

# Effectiveness of Fluroxypyr-Based Herbicides for Efficient Weed Management in Sweet Corn (Zea Mays Saccharata)

**Turdieva Nilufar Muminovna**
Professor, Plant protection and quarantine scientific research institute, 111215, Tashkent region, Qibray district, Bobur street 4

**Shernazarova Nargiza Sayfiddinovna**
Basic Doctoral Student, Plant protection and quarantine scientific research institute, 111215, Tashkent region, Qibray district, Bobur street 4

**Narmatov Sardor Esirgapovich**
PhD in Biological Sciences, Junior Research Fellow, Plant protection and quarantine scientific research institute, 111215, Tashkent region, Qibray district, Bobur street 4

**Abdumuminova Muqaddam Musurmonovna**
Basic Doctoral Student, Plant protection and quarantine scientific research institute, 111215, Tashkent region, Qibray district, Bobur street 4

**Received:** 2025, 15, Jun
**Accepted:** 2025, 21, Jul
**Published:** 2025, 19, Aug



**Annotation:** The aim of this study was to evaluate the effectiveness of various herbicides and weed control in sweet corn crops in the Yashil Ziroat farmer's field in Kibray district of Tashkent region of the Republic of Uzbekistan in 2025. The study developed methods for monitoring weeds and determining optimal doses of herbicides, as well as recommendations for their effective use.

**Keywords:** Sweet corn, herbicides, weeds, Samorane premium 33 k.s, Demetra k.e. 350.

## Introduction:

The increasing global population and shifting dietary preferences among consumers have significantly contributed to the rising demand for sweet corn (Zea mays saccharata Sturt). This crop is gaining agroeconomic importance due to its potential to enhance food security and boost the income levels of farming enterprises [1;2]. Thanks to its pleasant taste and comparatively high commercial value, sweet corn occupies a notable position in consumer markets. In recent years, demand for sweet corn has been growing steadily not only within domestic markets but also across international markets. This reflects a rising number of countries engaging in large-scale and consistent imports of this product [3].

Agrotechnical measures and crop rotation alone are not sufficient for the complete elimination of weeds. Therefore, the use of herbicides plays a crucial role in their effective control. It is essential to assess the composition and density of weed species in each field and select the optimal herbicide based on detailed weed mapping. In the context of Uzbekistan, achieving high and stable maize yields requires not only a set of integrated agrotechnical practices but also the improvement of weed management systems. This has become a vital component of modern intensive crop production [4].

Maize (Zea mays L.) is the second most important cereal crop globally after rice and serves as one of the primary sources of energy for the human population [5]. However, the presence of annual and perennial weeds, particularly grass-type species, in sweet corn cultivation poses a significant constraint. These weeds compete with the crop for essential resources such as light, moisture, and nutrients, thereby negatively affecting crop growth and yield [6].

In Uzbekistan, increasing grain production largely depends on improving crop yields. To achieve this, it is essential to utilize available agrotechnical resources efficiently. In modern intensive agriculture, weed management is considered one of the key factors influencing crop productivity. In maize cultivation, achieving high yields requires effective weed control, which remains a critical component of agrotechnical practices [7].

In the absence of proper weed control, yield losses in crops can range from 20% to as high as 80%, while even moderate weed competition may reduce yields by 10-15% [8]. Among the most effective and economically viable approaches to addressing this issue in agronomy is the application of herbicides. This method helps save labor, time, and other resources [9]. In particular, sweet corn is highly sensitive to weed competition during the period of 16 to 30 days after planting, which is considered the critical stage for competition. Effective weed control during this phase is essential to ensure high yields [10].

Studies have shown that the application of glyphosate before planting effectively suppressed early weed development for up to 15 days. Moreover, the use of herbicide combinations resulted in the highest performance in key agronomic indicators such as plant height, green biomass, leaf greenness index, and overall yield [11].

Therefore, evaluating the effectiveness of chemical herbicides and determining their optimal application methods play a crucial scientific and practical role in reducing the harmful impact of annual and perennial grassy weeds in sweet corn. Such measures are essential for ensuring stable crop yields and enhancing the agronomic efficiency of this crop.

**Materials and Methods:** To assess the effectiveness of chemical control against annual and perennial grassy weeds commonly found in sweet corn, herbicides containing the active ingredient fluroxypyr were tested. The herbicides evaluated in the trial included: “Samorane Premium 33 EC, 0.4 L/ha (standard)”, “Demetra EC, 350 g/L at 0.4 L/ha”, and “Demetra EC, 350 g/L at 0.5 L/ha”.

**Research Object:** Sweet corn (*Zea mays saccharata Sturt*) was selected as the subject of the study. During the growing period, the effectiveness of herbicides containing the active ingredient

fluroxypyr against annual and perennial grassy weeds was evaluated.

**Results and Discussion:**

In experiments conducted on maize fields at the Yashil Ziroat farm in Qibray district, Tashkent region, the number of annual two-leaf stage weeds in the control plots (without herbicide application) and 15 days after applying herbicides-Samorane Premium 33 EC at 0.4 L/ha (standard), Demetra EC 350 g/L at 0.4 L/ha, and Demetra EC 350 g/L at 0.5 L/ha-was recorded per 1 m² area. In the control variant, the following weed counts were observed: oq sho‘ra (Chenopodium album L.) - 7.7 plants, eshak sho‘ra (Amaranthus retroflexus L.) - 6.9 plants, gandumak (Avena fatua L.) - 5.4 plants, yulduzcha o‘t (Stellaria neglecta Weihe) - 5.7 plants, sariq o‘t (Erybimum cheirathoidis L.) -7.9 plants, bo‘ritaroq (Hibiscus trionum L.) - 5.6 plants, oddiy bangidevona (Datura stramonium L.) - 6.8 plants, semiz o‘t (Portulaca oleracea L.) - 7.6 plants, g‘o‘za qo‘ytikani (Xanthium strumarium L.) - 8.3 plants, qora ituzum (Convolvulus arvensis L.) - 5.7 plants. The perennial two-leaf stage weeds included angren otqulog‘i (Rumex acetosa L.) - 7.8 plants, qo‘ypechak (Convolvulus arvensis L.) - 6.7 plants, supirgi o‘t (Bassia scoparia (L.) A.J. Scott) - 8.3 plants, and shuvoq (Artemisiavulgaris L.) - 5.6 plants per square meter.

Fifteen days after applying the herbicide Samorane Premium 33 EC at 0.4 L/ha (standard), the control efficiency against annual two-leaf stage weeds was as follows: oq sho‘ra (Chenopodium album) - 88.3%, eshak sho‘ra (Amaranthus retroflexus) - 88.4%, gandumak (Avena fatua) - 85.2%, yulduzcha o‘t (Stellaria neglecta) - 84.2%, sariq o‘t (Erybimum cheirathoidis L.) - 88.6%, bo‘ritaroq (Hibiscus trionum) - 85.7%, oddiy bangidevona (Datura stramonium) - 88.2%, semiz o‘t (Portulaca oleracea) - 88.1%, g‘o‘za qo‘ytikani (Xanthium strumarium) - 89.1%, qora ituzum (Convolvulus arvensis) - 87.7%, with an average count of 6.8 plants per square meter. For perennial two-leaf stage weeds, control efficiencies were: angren otqulog‘i (Rumex acetosa) - 88.5%, qo‘ypechak (Convolvulus arvensis) - 88.0%, supirgi o‘t (Bassia scoparia) - 89.1%, and shuvoq (Artemisia vulgaris) - 85.7%, averaging 87.4% effectiveness.

Fifteen days after applying Demetra herbicide at a dose of 0.4 L/ha (350 g/L), the control efficiency against annual two-leaf stage weeds was recorded as follows: oq sho‘ra (Chenopodium album) - 89.6%, eshak sho‘ra (Amaranthus retroflexus) - 89.8%, gandumak(Avena fatua) - 87.0%, yulduzcha o‘t (Stellaria neglecta) - 87.7%, sariq o‘t (Erybimum cheirathoidis L) - 89.9%, bo‘ritaroq (Hibiscus trionum) - 87.5%, oddiy bangidevona (Datura stramonium) - 89.7%, semiz o‘t (Portulaca oleracea) - 89.5%, g‘o‘za qo‘ytikani (Xanthium strumarium) -90.3%, qora ituzum (Convolvulus arvensis) - 89.5%, with an average weed count of 6.8 plants per square meter. For perennial two-leaf stage weeds, the herbicide showed control efficiencies of: angren otqulog‘i (Rumex acetosa) - 89.7%, qo‘ypechak (Convolvulus arvensis) - 89.5%, supirgi o‘t (Bassia scoparia) - 90.6%, and shuvoq(Artemisia vulgaris) - 87.5%, with an average effectiveness of 89.1% (see Table 1).

**Table 1. Effect of post-emergence herbicides on annual and perennial two-leaf stage weeds in sweet corn**

| № | Names of Weeds | Control (without herbicide), number per 1 m² | Samorane Premium 33 EC at 0.4 L/ha (standard treatment) | | Demetra EC 350 g/L at 0.4 L/ha | | Demetra EC 350 g/L at 0.5 L/ha | |
|---|---|---|---|---|---|---|---|---|
| | | | count per m² | % | count per m² | % | count per m² | % |
| **15 days after herbicide application** | | | | | | | | |
| **1** | Oq sho‘ra | 7,7 | 0,9 | 88,3 | 0,8 | 89,6 | 0,7 | 90,9 |
| **2** | Eshak sho‘ra | 6,9 | 0,8 | 88,4 | 0,7 | 89,8 | 0,6 | 91,3 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **3** | Gandumak | 5,4 | 0.8 | 85.2 | 0.7 | 87 | 0.6 | 88.8 |
| **4** | Yulduzcha o‘t | 5,7 | 0.9 | 84.2 | 0.7 | 87.7 | 0.6 | 89.5 |
| **5** | Sariq o‘t | 7,9 | 0.9 | 88.6 | 0.8 | 89.9 | 0.7 | 91.1 |
| **6** | Bo‘ritaroq | 5,6 | 0.8 | 85.7 | 0.7 | 87.5 | 0.6 | 89.3 |
| **7** | Oddiy bangidevona | 6,8 | 0.8 | 88.2 | 0.7 | 89.7 | 0.6 | 91.2 |
| **8** | Semiz o‘t | 7,6 | 0.9 | 88.1 | 0.8 | 89.5 | 0.6 | 92.1 |
| **9** | G‘o‘za qo‘ytikani | 8,3 | 0.9 | 89.1 | 0.8 | 90.3 | 0.7 | 91.6 |
| **10** | Qora ituzum | 5,7 | 0.7 | 87.7 | 0.6 | 89.5 | 0.5 | 91.2 |
| **11** | Angren otqulog‘i | 7,8 | 0.9 | 88.5 | 0.8 | 89.7 | 0.7 | 91 |
| **12** | Qo‘y pechak | 6,7 | 0.8 | 88 | 0.7 | 89.5 | 0.6 | 91 |
| **13** | Supirgi o‘t | 8,3 | 0.9 | 89.1 | 0.8 | 90.6 | 0.7 | 91.6 |
| **14** | Shuvoq | 5,6 | 0.8 | 85.7 | 0.7 | 87.5 | 0.6 | 89.2 |
| | **Average** | **6,8** | **0,8** | **87,4** | **0,7** | **89,1** | **0,6** | **90,7** |
| **30 days after herbicide application** | | | | | | | | |
| **1** | Oq sho‘ra | 7,4 | 0,8 | 89.1 | 0,7 | 90.5 | 0,6 | 91.9 |
| **2** | Eshak sho‘ra | 6,9 | 0,8 | 88.4 | 0,7 | 89.8 | 0,6 | 91.3 |
| **3** | Gandumak | 5,5 | 0.8 | 85.4 | 0.7 | 87.3 | 0.6 | 89.1 |
| **4** | Yulduzcha o‘t | 5,9 | 0.8 | 86.4 | 0.7 | 88.1 | 0.6 | 89.8 |
| **5** | Sariq o‘t | 7,9 | 0.9 | 88.6 | 0.8 | 89.9 | 0.7 | 91.1 |
| **6** | Bo‘ritaroq | 5,7 | 0.8 | 86 | 0.7 | 87.7 | 0.6 | 89.5 |
| **7** | Oddiy bangidevona | 6,7 | 0.8 | 88 | 0.7 | 89.5 | 0.6 | 91 |
| **8** | Semiz o‘t | 7,3 | 0.9 | 87.7 | 0.8 | 89 | 0.7 | 90.4 |
| **9** | G‘o‘za qo‘ytikani | 8,4 | 0.9 | 89.2 | 0.8 | 90.4 | 0.7 | 92.5 |
| **10** | Qora ituzum | 5,6 | 0.8 | 85.7 | 0.7 | 87.5 | 0.6 | 89.3 |
| **11** | Angren otqulog‘i | 7,2 | 0.8 | 88.8 | 0.7 | 90.3 | 0.6 | 91.7 |
| **12** | Qo‘y pechak | 7,0 | 0.9 | 87.1 | 0.8 | 88.6 | 0.7 | 90 |
| **13** | Supirgi o‘t | 6,7 | 0.8 | 88 | 0.7 | 89.5 | 0.6 | 91 |
| **14** | Shuvoq | 6,7 | 0.8 | 88 | 0.7 | 89.1 | 0.6 | 91 |
| | **Average** | **6,7** | **0,8** | **87,6** | **0,7** | **89,0** | **0,6** | **90,6** |
| **60 days after herbicide application** | | | | | | | | |
| **1** | Oq sho‘ra | 7,3 | 0,9 | 87.7 | 0,7 | 90.4 | 0,6 | 91.8 |
| **2** | Eshak sho‘ra | 6,1 | 0,9 | 85.2 | 0,8 | 86.9 | 0,7 | 88.5 |
| **3** | Gandumak | 5,3 | 0.8 | 84.9 | 0.7 | 86.8 | 0.6 | 88.7 |
| **4** | Yulduzcha o‘t | 5,8 | 0.9 | 84.5 | 0.8 | 86.2 | 0.7 | 87.9 |
| **5** | Sariq o‘t | 7,9 | 0.9 | 88.6 | 0.8 | 89.9 | 0.7 | 91.1 |
| **6** | Bo‘ritaroq | 5,7 | 0.8 | 86 | 0.7 | 87.7 | 0.6 | 89.5 |
| **7** | Oddiy bangidevona | 6,6 | 0.9 | 86.4 | 0.8 | 87.9 | 0.7 | 89.4 |
| **8** | Semiz o‘t | 7,7 | 0.9 | 88.3 | 0.8 | 89.6 | 0.7 | 90.9 |
| **9** | G‘o‘za qo‘ytikani | 7.8 | 0.9 | 87.3 | 0.8 | 89.7 | 0.7 | 91 |
| **10** | Qora ituzum | 5,4 | 0.8 | 85.1 | 0.7 | 87 | 0.6 | 88.9 |
| **11** | Angren otqulog‘i | 7,6 | 0.9 | 88.1 | 0.8 | 89.5 | 0.7 | 90.8 |
| **12** | Qo‘y pechak | 7,6 | 0.9 | 88.1 | 0.8 | 89.5 | 0.7 | 90.8 |
| **13** | Supirgi o‘t | 6,7 | 0.9 | 86.6 | 0.8 | 88 | 0.7 | 89.6 |
| **14** | Shuvoq | 7,6 | 0.9 | 88.1 | 0.8 | 89.5 | 0.7 | 90.8 |
| | **Average** | **6,7** | **0,8** | **86,7** | **0,7** | **88,4** | **0,6** | **89,9** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Average calculation** | **0,96** | **0,04** | **1,43** | **0,04** | **1,39** | **0,04** | **1,19** |
| | **$EKF_{05}$=** | | | | | | | |

As a result of applying Demetra EC 350 g/L at the rate of 0.4 L/ha, it demonstrated higher effectiveness compared to the standard herbicide Samorane Premium 33 EC (0.4 L/ha). A significant reduction in weed density was observed in the plots treated with herbicides, indicating their selective action and a high level of weed control within the agro-phytocoenosis.

Fifteen days after applying Demetra EC 350 g/L at a dose of 0.5 L/ha, a high level of efficacy against annual two-leaf stage weeds was observed: oq shoʻra (Chenopodium album) - 90.9%, eshak shoʻra (Amaranthus retroflexus) - 91.3%, gandumak(Avena fatua) - 88.8%, yulduzcha oʻt (Stellaria neglecta) - 89.5%, sariq oʻt (Erybimum cheirathoidis L) - 91.1%, boʻritaroq (Hibiscus trionum) - 89.3%, oddiy bangidevona (Datura stramonium) - 91.2%, semiz oʻt (Portulaca oleracea) - 92.1%, gʻoʻza qoʻytikani (Xanthium strumarium) - 91.6%, and qora ituzum (Convolvulus arvensis) - 91.2%, showing an average efficacy of 89.1%. The average weed density was 6.8 plants per square meter. Among perennial two-leaf stage weeds, the herbicide showed an average control efficacy of 90.7% against angren otqulogʻi (Rumex acetosa) - 91%, qora ituzum (Convolvulus arvensis) - 91%, supirgi oʻt (Bassia scoparia) - 91.6%, and shuvoq(Artemisia vulgaris) - 89.2%. These results indicate a high level of effective weed control with Demetra EC 350 g/L at 0.5 L/ha (see Table 1).

Thirty days after herbicide application in sweet corn fields, the number of annual two-leaf stage weeds per 1 m² in the control plots was recorded as follows: oq shoʻra - 7.4 plants, eshak shoʻra - 6.9 plants, gandumak- 5.5 plants, yulduzcha oʻt - 5.7 plants, sariq oʻt - 7.9 plants, boʻritaroq - 5.9 plants, oddiy bangidevona - 6.7 plants, semiz oʻt - 7.3 plants, gʻoʻza qoʻytikani - 8.4 plants, qora ituzum - 5.6 plants, with an average density of 6.7 plants per square meter. Perennial two-leaf stage weeds included angren otqulogʻi - 7.2 plants, qora ituzum - 7.0 plants, supirgi oʻt - 6.7 plants, and shuvoq- 6.7 plants per square meter.

Thirty days after herbicide application, Samorane Premium 33 EC at 0.4 L/ha (standard) demonstrated the following control efficiencies against annual two-leaf stage weeds: oq shoʻra - 89.1%, eshak shoʻra - 88.4%, gandumak- 85.4%, yulduzcha oʻt - 86.4%, sariq oʻt - 88.6%, boʻritaroq - 86.0%, oddiy bangidevona - 88.0%, semiz oʻt - 87.7%, gʻoʻza qoʻytikani - 89.2%, qora ituzum - 85.7%. For perennial two-leaf stage weeds, the herbicide showed control efficiencies of: angren otqulogʻi - 88.8%, qora ituzum - 87.1%, supirgi oʻt - 88.0%, and shuvoq- 88.0%, with an average effectiveness of 87.6%.

Thirty days after herbicide application, Demetra EC 350 g/L at a rate of 0.4 L/ha showed the following efficacy against annual two-leaf stage weeds: oq shoʻra (90.5%), eshak shoʻra (89.8%), gandumak(87.3%), yulduzcha oʻt (88.1%), sariq oʻt (89.9%), boʻritaroq (87.7%), oddiy bangidevona (89.5%), semiz oʻt (89%), gʻoʻza qoʻytikani (90.4%), qora ituzum (87.5%), with an average density of 6.7 plants per square meter. Among perennial two-leaf stage weeds, it demonstrated control of angren otqulogʻi (90.3%), qora ituzum (88.6%), supirgi oʻt (89.5%), and shuvoq(89.1%), with an average effectiveness of 89% (see Table 1).

Thirty days after herbicide application, Demetra EC 350 g/L at a dose of 0.5 L/ha demonstrated the following efficacy against annual two-leaf stage weeds: oq shoʻra (90.5%), eshak shoʻra (89.8%), gandumak(87.3%), yulduzcha oʻt (88.1%), sariq oʻt (89.9%), boʻritaroq (87.7%), oddiy bangidevona (89.5%), semiz oʻt (89%), gʻoʻza qoʻytikani (90.4%), qora ituzum (87.5%), with an average density of 6.7 plants per square meter. Among perennial two-leaf stage weeds, the control efficacy was recorded as angren otqulogʻi (90.3%), qora ituzum (88.6%), supirgi oʻt (89.5%), and shuvoq(89.1%), with an average control rate of 90.6%.

When applied at a dose of 0.5 L/ha, Demetra EC 350 g/L exhibited high efficacy against all weed species (see Table 1).

Sixty days after herbicide application in sweet corn fields, the number of annual two-leaf stage weeds in the control plot per 1 m² was as follows: oq sho‘ra - 7.3 plants, eshak sho‘ra - 6.1 plants, gandumak- 5.3 plants, yulduzcha o‘t - 5.8 plants, sariq o‘t - 7.9 plants, bo‘ritaroq - 5.7 plants, oddiy bangidevona - 6.6 plants, semiz o‘t -7.7 plants, g‘o‘za qo‘ytikani - 7.8 plants, qora ituzum - 5.4 plants, with an average of 6.7 plants per m². Among perennial two-leaf stage weeds, the counts were: angren otqulog‘i - 7.6 plants, qora ituzum - 7.6 plants, supirgi o‘t - 6.7 plants, and shuvoq- 7.6 plants, averaging 6.8 plants per m².

Sixty days after herbicide application, when Samorane Premium 33 EC was applied at a rate of 0.4 L/ha (standard), the efficacy against annual two-leaf stage weeds was as follows: oq sho‘ra (87.7%), eshak sho‘ra (85.2%), gandumak(84.9%), yulduzcha o‘t (84.5%), sariq o‘t (88.6%), bo‘ritaroq (86%), oddiy bangidevona (86.4%), semiz o‘t (88.3%), g‘o‘za qo‘ytikani (87.3%), and qora ituzum (85.1%), with an average density of 6.8 plants per m². Among perennial two-leaf stage weeds, the control efficacy was recorded as angren otqulog‘i (88.1%), qora ituzum (88.1%), supirgi o‘t (86.6%), and shuvoq(88.1%), with an average efficacy of 86.7%.

Sixty days after the application of the herbicide Demetra EC 350 g/L at a rate of 0.4 L/ha, the control efficacy against annual two-leaf stage weeds was as follows: oq sho‘ra - 90.4%, eshak sho‘ra - 86.9%, gandumak- 86.8%, starwort - 86.2%, sariq o‘t - 89.9%, bo‘ritaroq - 87.7%, oddiy bangidevona - 87.9%, semiz o‘t - 89.6%, g‘o‘za qo‘ytikani - 89.7%, and qora ituzum - 87%, with an average density of 6.8 plants per square meter. Among perennial two-leaf stage weeds, the efficacy was: angren otqulog‘i - 89.5%, qora ituzum - 89.5%, supirgi o‘t - 88%, and shuvoq- 89.5%, with an average efficacy of 89.1% (see Table 1).

Sixty days after the application of Demetra EC 350 g/L at a rate of 0.5 L/ha, the herbicide demonstrated a high level of efficacy against annual two-leaf stage weeds. Specifically, notable control was observed for oq sho‘ra (91.8%), eshak sho‘ra (88.5%), gandumak(88.7%), starwort (87.9%), sariq o‘t (91.1%), bo‘ritaroq (89.5%), oddiy bangidevona (89.4%), semiz o‘t (90.9%), g‘o‘za qo‘ytikani (91.0%), and qora ituzum (88.9%). The average number of weeds was 6.8 plants per 1 m². Additionally, a high efficacy was recorded against perennial two-leaf weeds such as common angren otqulog‘i (90.8%), qora ituzum (90.8%), supirgi o‘t (89.6%), and mugwort (90.8%). Overall, under herbicide treatment, the average effectiveness reached 90.7%, with Demetra EC 350 g/L at 0.5 L/ha demonstrating strong control over all major weed species (see Table 1).

The herbicides Samorane Premium 33 EC (0.4 L/ha) and Demetra EC 350 g/L (0.4 L/ha) showed high effectiveness in agro-conditions with low weed density. In fields heavily infested with weeds, it is recommended to apply Demetra EC at a rate of 0.5 L/ha. However, using herbicides at doses exceeding the recommended level is not always economically or environmentally justified. Such an approach may increase production costs and lead to the accumulation of toxic compounds in the soil. Therefore, the higher dose of Demetra herbicide is advisable only in cases where a high density of weeds has been identified.

**Conclusion:** Based on the conducted experiments, the herbicide “Demetra EC 350 g/L” applied at a dose of 0.5 L/ha demonstrated the highest efficiency (up to 90.7%) in controlling annual and perennial grassy weeds in sweet corn. Under conditions of low weed pressure, both Demetra at 0.4 L/ha and Samorane Premium 33 EC provided sufficient control. The use of a higher dose should be limited to situations where weed density is high, as excessive application can be economically and environmentally inefficient.

## References

1. W. Zhiwu, C. Kai, Q. Shijun, L. Zengbin, C. Wen, X. Huanying, et al., "Cultivating corn with high populations to increaseproductivity and land efficiency in Indonesia," Agrosainstek: Jurnal Ilmu Dan Teknologi Pertanian, vol. 3, pp. 15-20, 2019.

2. A. Kamaluddin, "Empowerment of farmers and sustainable strategies towards the selfsufficiency of rice and maize in Indonesia,"Int. J. Curr. Res. Biosci. Plant Biol, vol. 4, pp. 45-53, 2017.
3. Hawayanti, E., Palmasari, B., & Ardiansyah,F. (2020). Respon Pertumbuhan DanProduksi Tanaman Jagung Manis (ZeaMays Saccharata Sturt.) PadaPemberian Pupuk Kandang KotoranSapi Dan Pupuk Fosfat. Klorofil,15(Desember), 69-73
4. Nilufar Turdiyeva, Zulaykho Umarova, Nazokat Sayfullaeva, Dilnura Togaeva and Shakrizoda Bahodirova. Types and quantities of weeds found in corn fields and the effect of herbicides on grain yield. E3S Web Conf., 258 (2021) 04041. DOI: https://doi.org/10.1051/e3sconf/202125804041
5. Sidahmed HMI, Illes A, ALmahi A, Nagy J. 2024. Performance of agricultural factors on yield of sweet corn (Zea maysL. Saccharata) -A review. Acta Agraria Debreceniensis, 1: 143–156.
6. Asih, D. N. S., Setiawan, A. N., Sarjiyah. 2018. Weeds Growth in Various Population of Sweet Corn-Peanut Intercropping. Planta Tropika: Journal of Agro Science, 6(1): 22–31
7. Turdieva N. Effects Of Herbicide Application Rates On Corn Yield In Maize Fields. International Journal of Academic Multidisciplinary Research (IJAMR) ISSN: 2643-9670 Vol. 5 Issue 2, February - 2021, Pages: 249-251.
8. Radjabov J, Troyanovskaya I, Dvoryashina T, Vanzha V, Akhtyamova L. 2025. Impact of weed control methods on corn yield and soil fertility conservation. E3S Web of Conferences, 613(02003):1-11.
9. Espig M, Dynes RA, Henwood RJT, James TK. 2022. The drivers of herbicide use among arable farmers in canterbury, new zealand: toward an integrated approach. Society and Natural Resources, 35(3): 281-300
10. Safrina, Safrina & Baidhawi, Baidhawi & Hafifah, Hafifah. (2024). Determination of The Critical Period of Sweet Corn Plants (Zea Mays Saccharata Sturt) Against Weed. International Journal of Engineering, Science and Information Technology. 4. 41-46. 10.52088/ijesty.v4i3.524.
11. Bayyinah, Lafi & Purwanto, Purwanto & Syarifah, Risqa & Adi Pratama, Rama & Widiyawati, Ida & Hendra, Hendra. (2025). The effect of weed control using herbicide on soil bacteria, growth, and yield of sweet corn. Kultivasi. 24. 10.24198/kultivasi.v24i1.61679.