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WEED SPECIES IN EGGPLANT FIELDS

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Abstract
The species composition of weeds in eggplant (Solanum melongena L.) fields in the Kibrai District of Tashkent Region was studied. Dominant weed species, the degree of weed infestation, and their density per square meter (1 m²) were identified. Latin names of the weed species are provided, with a focus on the most frequently encountered species. It is highlighted that the extensive use of crop rotation in vegetable farming poses challenges in identifying weed species specific to each crop.

Keywords: Solanum melongena, weeds in eggplant, agriculture.

Introduction

The problem of weed control has been a pressing issue for farmers worldwide, representing one of the critical tasks in agriculture. Weeds cause significant damage to agriculture, and reducing weed infestation is an essential reserve for enhancing agricultural productivity. Weeds are characterized by high reproductive capacity, ability to spread over large distances, and prolonged seed viability. They are commonly present in agricultural crop fields. Neglecting comprehensive agronomic measures, insufficient attention to preventative weed control measures, and inadequate consideration of the biological characteristics of weeds are among the reasons for high weed infestation in certain farming areas.

According to T.S. Zakirov [2], the production of one gram of dry matter by sorghum requires 300 g of water, while cotton needs 500–600 g, and alfalfa requires 800 g. Comparatively, weeds such as Johnson grass consume 750 g, lamb's quarters 800 g, and wormwood 950 g of water for the same amount of dry matter. In weed-infested fields, a significant portion of fertilizers is consumed by weeds, which suppress and overshadow cultivated plants. Weeds also lower soil temperature, which reduces the activity of soil microorganisms, slows down the decomposition of organic matter, and diminishes the availability of essential mineral nutrients for cultivated plants. It has been observed that in fields with widespread weed infestation, crop yields decline significantly: vegetables by 10.0%, legumes by 13.4%, potatoes by 6.5%, and wheat by 10.6% [4].

Methods of Research

The study was conducted using methods proposed by A.I. Maltsev [3] and by B.G. Alev, A.Zh. Zhurakulov, H.A. Akhmedov, and A.M. Mirzaev [1]. Sampling was performed by walking diagonally across the tomato fields and collecting herbarium specimens of weed species encountered. Botanical names were identified for these specimens. To determine weed density, 1 m² plots were selected from the study fields at four locations. Weed species composition and density within these plots were determined by direct counting.

Results of the Study

The species composition of weeds has been well-studied in cotton fields, orchards, and wheat fields. However, the species composition and biological characteristics of weeds in vegetable fields remain insufficiently explored. Our research was conducted in the vegetable fields of Kibrai District, Tashkent Region. The study identified 28 primary weed species in eggplant fields.

The most frequently encountered species include:

- ✓ Amaranthus retroflexus L. – 23–30 plants per 1 m²
- ✓ Echinochloa crus-galli L. Beauv. – 22–24 plants per 1 m²
- ✓ Chenopodium album L. – 10–13 plants per 1 m²
- ✓ Cyperus rotundus L. – 3 plants per 1 m²
- ✓ Xanthium strumarium L. – 3 plants per 1 m²
- ✓ Solanum nigrum L. – 2–3 plants per 1 m²

Eight of the listed weed species are perennial. In vegetable farming, crop rotation is commonly practiced, preventing the repeated planting of vegetables from the same family in the same field the following year. This complicates the identification of weed species specific to each vegetable crop.

The table below illustrates weed species and their density in eggplant fields:

№	Weed Species	Density (plants/m²)	
		2021 г	2022 г.
1	Amaranthus retroflexus L.	23,0	30,0
2	Echinochloa crus-galli L. Beaw	22,0	24,0
3	Chenopodium album L.	10,0	13,0
4	Cyperus rotundus L.	3,0	3,0
5	Xanthium strumarium L.	3,0	3,0
6	Solanum nigrum L.	2,0	3,0
7	Sorghum halepense L. Pers.	1,5	2,0
8	Cynadon dactylon L Pers.	1,0	2,0
9	Convolvulus arvensis L	1,0	1,5
10	Rorippa islandika Brob.	1,0	1,5
11	Malva neglecta Wall.	0.5	0,5

12	Rumex crispus L.	0.5	0,5
13	Plantago major L.	0,5	0,5
14	Abutilon theophrasti Medik	0.5	0,5
15	Sisymbrium loeselli L.	0,25	0,25
16	Fumaria vaillantii Loisel	0,25	0,25
17	Conium maculatum L.	0,25	0,25
18	Setaria viridis L. Beauv	0,25	0,25
19	Polygonum aviculare L.	0,25	0,25
20	Polygonum hetrophyllum Lindm	0,25	0,25
21	Physalis ixocarpa Brot. ex Harnem	0,25	0,25
22	Descurainia Sophia (L) Webb ex Prantl	0,25	0,25
23	Datura stramonium L.	0.25	0,25
24	Cirsium ochrolepidium Juss.	0,25	0,25
25	Portulaca oleraceae L.	-	0.25
26	Hordeum Leporinum L.	0,25	0,25
28	Dodartia orientalis L.	0,25	0,25

Conclusion

The study identified 28 weed species in eggplant fields, with the most common being Amaranthus retroflexus L., Echinochloa crus-galli L. Beauv., and Chenopodium album L.. Eight of these species are perennial weeds. Effective weed control strategies should pay particular attention to perennial weeds to prevent their proliferation.

References

1. Alev, B.G., Zhurakulov, A.Zh., Akhmedov, H.A., & Mirzaev, A.M. (1981). Methodological Guidelines for Recording Weed Seed Distribution and Infestation in Agricultural Crop Fields in Cotton Crop Rotations. Tashkent: 18 p.
2. Zakirov, T.S. (1979). Agricultural Practices in Irrigated Conditions of Uzbekistan. Uzbekistan: 239 p.
3. Maltsev, A.I. (1962). Weed Vegetation of the USSR and Measures for Its Control. Moscow-Leningrad: Selkhozgiz, 271 p.
4. Nikitin, V.V. (1983). Weed Plants of the USSR Flora. Leningrad: Nauka, 454 p.