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WEED PLANTS IN CUCUMBER FIELDS (CUCUMIS SATIVUS L.)

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Abstract
A quantitative study was conducted on the species composition of weeds in fields planted with cucumbers in the Kibrai District of the Tashkent Region. The dominant weed species, the degree of weed infestation, and their abundance per square metre of land were determined. The Latin names of the weed species are given. The most common weed species are indicated. It is noted that the widespread use of crop rotation in vegetable growing creates certain difficulties in identifying weed species specific to each crop type.

Introduction

Weeds cause enormous damage to agriculture worldwide. Reducing weed infestation represents a significant potential for increasing agricultural productivity. Weeds are highly prolific, capable of spreading over considerable distances and retaining seed viability for long periods. They are widespread in agricultural crops. Failures in the implementation of agronomic practices, a lack of focus on preventive control measures, and insufficient consideration of the biological characteristics of weeds – all these factors contribute to high levels of weed infestation in fields on individual farms.

Weeds consume more water than cultivated plants. According to T.S. Zakirov[2], to produce one gram of dry matter, jugar consumes 300 g of moisture, cotton 500–600 g, and alfalfa 800 g; meanwhile, among weeds, gumweed consumes 750 g, lamb's quarters 800 g, and wormwood 950 g.

In weedy fields, a significant proportion of fertilisers is utilised by weeds, which suppress and shade cultivated species.

Weeds lower soil temperature, which weakens the activity of soil microorganisms and, as a result, slows down the decomposition of organic matter and reduces the content of mineral substances necessary for the nutrition of cultivated plants.

It has been found that in fields where weeds are widespread, they cause a reduction in the yield of vegetable crops by 10.0%, leguminous crops by 13.4%, potatoes by 6.5%, and wheat by 10.6% [4].

Research methods

The studies were conducted using methods proposed by A.I. Maltsev [3] and B.G. Aleev, A.Zh. Zhurakulov, H.A. Akhmedov and A.M. Mirzaev [1]. To this end, we walked diagonally across the tomato fields and collected herbarium specimens from several points of weed species found in these areas, and identified their botanical names. To determine the abundance of weeds in the fields under study, 1 m² plots were selected in quadruplicate, and the species composition and number of weeds within these plots were determined by counting.

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Research findings

The species composition of weeds in cotton fields, orchards and wheat fields has been well studied. However, the species composition of weeds and their biological characteristics in vegetable crops have not been sufficiently studied.

We conducted our research on vegetable crops at farms in the Kibrai District of the Tashkent Region.

The table shows that 24 main species of weeds are found in fields planted with cucumbers. The most common of these are: Amaranthus retroflexus L. (20–23 plants per m²), Cyperus rotundus L. (19–20 plants per m²), Echinochloa crus-galli L. Beaw – 15–17 plants per 1 m², Chenopodium album L. – 13–15 plants per 1 m², Xanthium strumarium L. – 5–8 plants per 1 m², Solanum nigrum L. – 4–6 plants per 1 m², Sorghum halepense (L.) Pers. – 2–4 plants per 1 m², Cynodon dactylon (L.) Pers. – 2–3 plants per 1 m².

It should also be noted that the 8 weed species listed in the table are considered perennial weeds. Crop rotation is widely practised in vegetable growing; vegetables belonging to the same family are not sown again in the same field the following year. This creates certain difficulties in identifying the specific weed species characteristic of each vegetable crop. On the one hand, it is observed that the specific weed species found in fields sown with cucumbers depend on the preceding crop.

Types and Number of Weeds in Fields Planted with Cucumbers (plants per m²)

No.	Weed Species	2024 (plants/m²)	2025 (plants/m²)
1	Amaranthus retroflexus L.	23.0	20.0
2	Cyperus rotundus L.	20.0	19.0
3	Echinochloa crus-galli (L.) Beauv.	17.0	15.0
4	Chenopodium album L.	15.0	13.0
5	Xanthium strumarium L.	5.0	8.0
6	Solanum nigrum L.	4.0	6.0
7	Sorghum halepense (L.) Pers.	2.0	4.0
8	Cynodon dactylon (L.) Pers.	2.0	3.0
9	Convolvulus arvensis L.	1.5	3.0
10	Rorippa islandica Brob.	0.5	0.5
11	Malva neglecta Wall.	0.5	0.5
12	Rumex crispus L.	0.5	0.5
13	Plantago major L.	0.25	0.25
14	Abutilon theophrasti Medik.	0.25	0.25
15	Fumaria vaillantii Loisel.	0.25	0.25
16	Conium maculatum L.	0.25	0.25
17	Setaria viridis L.	0.25	0.25

No.	Weed Species	2024 (plants/m²)	2025 (plants/m²)
18	Polygonum aviculare L.	0.25	0.25
19	Polygonum heterophyllum Lindm.	0.25	0.25
20	Physalis ixocarpa Brot. ex Hornem.	0.25	0.25
21	Datura stramonium L.	0.25	0.25
22	Cirsium ochrolepidium Juss.	0.25	0.25
23	Portulaca oleracea L.	0.25	0.25
24	Dodartia orientalis L.	0.25	0.25

It has been found that the greater the number of weed species and the higher the weed density in the previous crop, the greater the number of weed species and the higher the weed density per unit area when cucumbers are sown in these fields the following year. Furthermore, the presence of perennial weeds in fields planted with cucumbers indicates that perennial weeds were present in these fields prior to the sowing of cucumbers. It has been found that if any species of annual and perennial weeds are present in the previous crop, the same species of annual and perennial weeds can be found the following year when cucumbers are sown in the same fields. Perennial weeds in fields planted with vegetable crops are often found not in large numbers but scattered about. If they are not destroyed on the spot in a timely manner, they will gradually multiply and spread throughout the field.

Conclusion

Fields planted with cucumbers are mainly infested with weeds belonging to 24 species. Common weeds include Amaranthus retroflexus L., Cyperus rotundus L., Echinochloa crus-galli L. Beaw., Chenopodium album L., Xanthium strumarium L. , Solanum nigrum L., Sorghum halepense (L.) Pers., and Cynodon dactylon (L.) Pers.

Eight of the weed species found in fields planted with cucumbers are perennial weeds. When developing weed control measures, particular attention should be paid to the presence of perennial weeds.

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