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MONOCULTURE, CROP ROTATION AND WEEDS

ABDURAKHMONOV ILKHOMJON ADKHAMOVICH
PhD., Senior Researcher, Andijan branch of the Scientific Research Institute of Breeding, Seed Production and Agricultural Technology of Cotton Growing, Uzbekistan[1]
e-mail:ilhomjon_and@mail.ru, phone:+998941067876

BAKHROMOV SHUKURULLO SADULLAEVICH
Researcher, Andijan Branch of the Scientific Research Institute of Breeding, Seed Production and Agricultural Technology of Cotton Growing, Uzbekistan

JANIBEKOV DILYORBEK ABDUMANNOBOVICH
Doctoral Student, Andijan Institute of Agriculture and Agrotechnology

ABSTRACT:

A 1: 1 cotton and wheat crop rotation ensures consistently high cotton and grain yields by reducing weeds.

KEYWORDS: Crop rotation, cotton, wheat, weeds, crop rotation, monoculture.

INTRODUCTION:

Scientific and practical substantiated the huge harm of monoculture in agriculture, positive smallpox features of crop rotation with an increase in crop yields and soil fertility.

To solve the problems of the cotton monoculture created later and to fully meet the demand for grain products in Uzbekistan, since the beginning of 1994 the areas of cotton and other crops have been reduced and grain crops have been sown. After that, the country began to widely introduce the crop rotation scheme 1: 1 cotton-wheat.

In the Andijan Scientific Experimental Station of the Scientific Research Institute of Breeding, Seed Production and Agricultural Technology of Cotton Growing, in order to scientifically substantiate the sebum turnover of cotton and wheat, the effect of wheat monoculture and weed overgrowth of crop rotation fields was studied. Because in crop rotation fields, the ecological situation is changing, and this directly affects the species and quantity, as well as the development of weeds. The soil of the experimental farm is old-irrigated light gray soil, the texture is medium loam, the depth of groundwater healing is 4-5 meters. In the arable layer, the humus content exceeds 1%.

The degree of contamination of the field experiment with weeds is average, and the species are mostly machine-like. In cotton and wheat fields, there are mainly annual machin, low bristle, purslane, sisymbrium loeselii, chicken millet, as well as perennials as well as new fence, horse shavel, salomalekum.

In 1993-2000, weed counts were carried out on May 20-31 on experimental fields of monoculture of winter wheat and a 1: 1 crop rotation scheme.

In the experiments, cotton varieties Andijan-36 were sown, wheat varieties Tanya (2015-2016), Zimnitsa (2017-2018) Alekseevich (2019-2020). Weed counts were carried out on an area of 1 m^2 at five points on the option without the use of mineral fertilizers.

The data obtained showed an increase from year to year in the number of annual weeds in the field with wheat sowing for six years (table 1). Because in these fields, the same ecological conditions are created every year, which leads to the adaptation of weeds.

For example, in the first year of monoculture, the number of annual weeds per 1 m² was 3.2, and in the sixth year of annual sowing of wheat, their number increased by almost 4 times.

Table 1. Overgrowth of fields with weeds during monoculture of wheat

№	years	Annuals, pcs / m²	Including sisymbrium loeselii, pcs / m²	Perennial, pcs / m²				Wheat grain yield, c / ha
				Convolvulus arvensis	Salom alaikum	Others	Total	
1	2015	3.2	0	0.8	1.2	0.4	2.4	10.2
2	2016	6.1	2.4	1.8	1.6	0	3.4	14.1
3	2017	11.0	5.8	5.6	3.0	0.8	9.4	16.7
4	2018	24.0	7.4	12.4	14.4	0.8	27.6	17.1
5	2019	11.8	1.6	11.2	13.2	2.6	27.0	14.8
6	2020	12.4	0.6	14.4	14.8	0.8	30.0	17.1

The same pattern was observed when a new fence appeared in the fields. In 2015, 0.8 pieces of new fence were taken into account in 1 m², and in 2019 the amount of this weed plant per 1 m² was 14.4 pieces, or increased by almost 15 times. I think that this weed plant develops well in a wheat field and ripens well in seed crops. The best period of development of a new intake coincides with the phase of milk-wax and ripeness of wheat grain, and in the phase of full maturation of the grain, it seed.

A passing weed of wheat is a kurtana, which generally did not appear in the first year of wheat sowing. In 1998, its quantity per 1 m² was 7.4 pieces. In subsequent years, the number of weeds has sharply decreased because in recent years competition between weeds has increased due to an increase in the amount of rapidly propagating salomaleicum.

Consequently, in 2020, the weed salomalecum increased by almost 15 times compared to 2015. In the last two years, the number of these weeds has remained almost the same. However, I did not observe a regular increase or decrease in other weed plants as a result of monoculture. In a field with a multiculture of wheat, over 6 years, the total number of perennial weeds increased in accordance with the number of new intake and salomaleicum.

The grain yield of winter wheat obtained from the monoculture field was in the range of 10-17 c / ha. The grain yield is very low, firstly due to the competition of weeds, and also as a result of incomplete tillering of wheat in conditions with low soil fertility, the ear in one plant and the number of grains in it decrease.

Also, it should be noted separately that weeds were counted on the option without the introduction of mineral fertilizers. In the first two years, intensive field wheat varieties of high-yielding varieties Tanya, Zimnitsa, Krasnadar Territory were sown on the experimental field. This is the reason for the low grain yield of wheat in the initial two years.

This means that in the fields of monoculture of winter wheat, it gradually increases the number of weeds and reaches a strong degree for 4-6 years. Especially the increase in the number of weeds from readable extremely difficult control measures, such as fresh fence and salomaleicum, is one of the negative consequences in monoculture.

Table 2 shows data on weeds found in crop fields, cotton: wheat (1: 1). However, most of the weed plant propagating from it is adapted to the same development and becomes highly seeded in a cotton field with inter-row cultivation and also in a wheat field without inter-row cultivation. However, the increase in the new intake in the fields of wheat monoculture is 25-30% higher than in the field of cotton monoculture.

Table 2. The number of weeds in the crop rotation fields cotton-wheat.

Years	Kinds	Annuals, pcs / m²	Including sisymbrium loeselii,, pcs / m²	Perennial , pcs / m²			Productivity, c / ha
				Convolvulus arvensis	Others	Total	
2013	Cotton	5,5	0	2,6	0,4	3,0	17,3
2014	Wheat	1,9	0,1	3,6	0,9	4,5	46,3
2015	Cotton	6,3	0	3,8	0,8	4,6	28,4
2016	Wheat	1,9	1,4	7,4	0,6	8,0	48,2
2017	Cotton	7,8	0	4,9	0,8	5,7	31,7
2018	Wheat	2,8	1,0	8,1	0	8,1	51,4
2019	Cotton	9,2	0,1	5,0	0,6	5,6	30,8
2020	Wheat	2,1	1,1	10,6	0,7	11,3	52,0

This means that the negative effect of the crop rotation scheme 1: on annual weeds is 60-70%, and the effectiveness of the fight against perennial weeds as a new fence does not exceed 30%. But when analyzing the data obtained in a field with the same crop, a gradual increase in the number of weeds can be seen, this condition is especially strong in a wheat field.

Based on the tabular data, first of all, it should be noted that as a result of crop-defensive growing of cotton from wheat, the number of annual weeds per 1 m² in a wheat field decreases by 3 times.

In a 1: 1 crop rotation scheme, cotton-wheat will favor an increase in kurten, horse shavel, salomalecum, svenoroy and other weeds.

On the variants with the use of mineral fertilizers, the yield of crops in the circle of crop rotation is almost the same.

CONCLUSIONS:

As a result, it can be noted that the monoculture of wheat leads to an increase in the number of weeds to a large extent, especially perennial ones, as well as a decrease in grain yield.

The crop rotation scheme 1: 1 cotton-wheat strongly affects annual weeds and weakly affects the new intake, and also ensures uninterrupted obtaining of a high yield of raw cotton and grain.

REFERENCES:

1) Bahromov S. L. Results of many years of research on weed control in crop rotation fields, Andijan Scientific Experimental Station of the Scientific Research Institute of Breeding, Seed Production and Agricultural Technology of Cotton Growing, Andijan, 1990, 88 p.
2) Ermatov A. Weeds in irrigated lands and their control. Tashkent, 1987, 96 p.
3) Dospekhov B.A. method of field experiment.-M.: Aropromizdat-1985. P.248-255