UOT: 633.51, 633.1

THOUSAND GRAIN WEIGHT AND YIELD INDICATORS OF DUAL CROPS IN DRIP-IRRIGATED FIELDS UNDER FILM

Tursunov Avazbek Abdulvoxidovich

Cotton Breeding, Seed Production and Agrotechnologies Research Institute. Tashkent.

Abstract. *As a result of the increasing world population and warming climate, great attention is being paid to the economical and efficient use of available resources in agriculture. This article also presents grain yield indicators in the cultivation of cotton and cotton intercropping in areas where drip irrigation technology is used. It was found that when legumes, peas and beans were grown together with cotton and between cotton rows at a seedling density of 166 and 83 thousand plants/ha, the weight of a thousand grains was higher when the number of seedlings was low, and the grain yield was higher in the variants with a large number of seedlings.*

Keywords: *cotton, mung bean, pea, bean, double crop, seedling, grain, yield*

INTRODUCTION

In our republic, cotton is grown on more than 1 million hectares of arable land, and legumes are grown on more than 70 thousand hectares. As we know, cotton is a valuable product and is widely used in many areas. Legumes are important plants for their valuable nutritional properties and increasing soil fertility. In recent years, water shortages have become a problem in our region as a result of rising air temperatures. This creates certain difficulties in caring for crops and growing products in agriculture. In order to solve this problem, our Government has adopted many decisions. In recent years, Sh. Nurmatov, D. Shadmonov, Kh. Bekmurodov, I. Ro'ziev, N. Ravshanova and

a number of other researchers have conducted research and made conclusions on the technology of growing double crops with cotton in our country .

As the planting rate increased, the number of pods, weight, length, number and weight of grains, and 1000- grain weight of mung bean varieties decreased. It was found that when mung bean varieties were planted in spring, their biometric indicators were higher [1].

Mung beans are small, oval-shaped, with blunt or rounded ends, green, yellow, brown, black, shiny, and weigh 50-80 grams per 1000 seeds . The average weight of 1000 seeds of the Durdona variety of mung beans is 64 grams [5, 7].

The Yulduz variety of chickpea was tested as a standard, the average weight of 1000 grains was 303 g and the yield was 13.8 t/ha [2].

The Ravot variety of beans has a 1000-grain mass of 488-502 grams during biological ripening, and a grain yield of 21-25 c/ha [3].

In the light gray soils of Andijan region, when nitrogen, phosphorus, and potassium fertilizers were applied at rates of 50, 80, and 60 kg/ha to mung bean plants after winter wheat, the weight of 1000 grains was 62.8 g, and the grain yield was 20.1 c/ha [4].

When repeated crops were irrigated in a conventional manner and without the use of mineral fertilizers, grain yields of 9.7 tons/ha of soybeans, 8.3 tons/ha of mung beans, and 10.7 tons/ha of beans were produced [6].

Our research has studied the effects of mung bean, pea and bean on the thousand-grain weight and yield of mung bean, pea and bean as a free crop in cotton intercropping in 60(20x20x20)x10x1 and 60(30x30)x10x1 schemes with a seedling density of 166 and 83 thousand plants/ha.

RESEARCH METHODS

The research was conducted in the experimental field of the Namangan Scientific and Experimental Station of the State Agricultural University of Uzbekistan. The research was carried out in the cotton rows, where mung beans, peas, and red beans were planted in 60x(20x20x20)x10x1 and 60x(30x30)x10x1 planting schemes with a seedling

density of 2 rows of 166 and 1 row of 83 thousand plants/ha. The experiment was carried out in seven variants in three rotations, planting cotton varieties Bukhara-102, mung beans Durdona, peas Lazzat, and beans Rovot. The research was carried out according to the "Methods of conducting field experiments" (UzPITI, 2007), and mathematical analyses Dospekhov BA (1985).

RESEARCH RESULTS AND DISCUSSION

The experiment showed that when mung beans, peas, and beans were grown together in rows with cotton, the thousand-grain weight and yield indicators (Table 1) varied depending on the number of seedlings. In the experiment, in variants 2, 3 and 4, when mung beans, peas and beans were grown in a 60(20x20x20)x10x1 scheme with a seedling density of 166 thousand bushes/ha, the weight of a thousand grains was 61.8; 331.5 and 317.4 grams. When these crops were grown in a 60(30x30)x10x1 scheme with a seedling density of 83 thousand bushes/ha, the weight of a thousand grains was 64.0; 341.0 and 351.3 grams. It was found that the weight per thousand grains of mung beans grown in variant 5 was 2.2 grams higher than that of mung beans grown in variant 2 , the weight per thousand grains of peas grown in variant 6 was 9.5 grams higher than that of variant 3, and the weight per thousand grains of beans grown in variant 7 was 33.9 grams higher than that of variant 4.

Table 1

Thousand-grain weight and yield of double crops

V	Crop type	Planting scheme	Planting density of double crops, thousand plants/ha	Thousand grain weight, gr	Productivity, st/ha
1	Cotton	-	-	-	-

2	Cotton + Mesh	60(20x20x20)x10x1	166	61.8	14.2
5		60(30x30)x10x1	83	64.0	11.5
3	Cotton + Peas	60(20x20x20)x10x1	166	331.5	8.2
6		60(30x30)x10x1	83	341.0	6.1
4	Cotton + Beans	60(20x20x20)x10x1	166	317.4	8.5
7		60(30x30)x10x1	83	351.3	6.5

It was found that the grain yield indicators of double crops were higher in variants with a large number of seedlings. In cotton rows, the yield of mung beans, peas, and beans grown in variants 2, 3, and 4 with a seedling density of 166 thousand plants/ha was 14.2; 8.2; 8.5 t/ha. The grain yield of mung beans, peas, and beans grown in variants 5, 6, and 7 with a seedling density of 83 thousand plants/ha was 11.5; 6.1; 6.5 t/ha. It was found that the yield of mung beans grown in variant 2 with a higher number of seedlings was 2.7 t/ha higher than that of mung beans grown in variant 5, the yield of peas grown in variant 3 was 2.1 t/ha higher than that of peas grown in variant 6, and the yield of beans grown in variant 4 was 2.0 t/ha higher than that of beans grown in variant 7.

CONCLUSION

The results presented can be concluded that when growing mung beans, peas, and beans as a double crop between cotton rows, even though the number of seedlings in the variants is twice as different, the difference in yield indicators is not large, and it can be

expressed as the fact that the thousand-grain weight of the crops is higher when the number of seedlings is small.

REFERENCES

1. Idrisov Kh. The effect of sowing date and rate on biometric indicators of the “Navruz” variety of mung bean // Agro Ilm No. 4. 2019 p. 30-31.

2. Isakov KT and chief. Development of new varieties and ridges of peas on poor soils Productivity /Fundamental science and practice Integration: Problems and Prospects, Proceedings of the Republican Scientific and Practical Conference, May 24-25, 2018, pp. 222-224.

3. Orokov S., Oltiboyeva The importance of flax in the national economy / The importance of Lalmikor farming, scientific basis and its development "Innovative agrotechnologies" on the subject International scientific and practical conference collection of scientific articles May 19, 2023 pp. 209-211.

4. Rakhmatullev G' and others. Soil properties of mineral fertilizers in mung bean crops Impact on fertility /Resistant to global climate change, High yield and quality of grain grain, leguminous, oilseed, and fodder crop care prospects international scientific and practical conference May 13, 2022 pp. 343-349.

5. local and foreign samples of mung bean (Phaseolus aureus L.) in laboratory

conditions // Academic Research in Educational Sciences Volume 3 (Issue 2) 2022 Pp 982-987

6. Khoshimov IN and chief. Effective use of irrigation water for repeated crops and leaching of soil particles impact /Resistant to global climate change, High yield and quality of grain grain, leguminous, oilseed, and fodder crop care prospects international scientific and practical conference May 13, 2022 pp. 289 - 292 .

7. Yakubjonov O, Tursunov S, Muqimov Z // Grain textbook. New generation-2009, p. 261.