

BENEFITS OF CO-PLANTING COTTON WITH PEANUTS**Usmonov Nodirjon Botiraliyevich**

Senior Lecturer of the Department "Technology of Storage and Primary Processing of Agricultural Products", Fergana Polytechnic Institute;
Fergana, Republic of Uzbekistan.

Abstract

The article describes the possibilities of improving the field germination of cotton seeds, soybeans, peanuts and protecting crops from wind erosion by jointly cultivating them under extreme conditions of desert sandy soils.

Keywords: Sandy soil, intercropping, germination, damage.

13.8 million hectares of the territory of the Republic of Uzbekistan consists of sand dunes and sandy soils [1].

Of this, irrigated farming is carried out on a total of 1 million 572 thousand hectares in the deserts of Qizilqum, Karakum, Karshi, Mirzachol, Sherabad, Bukhara, Fergana, Khorezm, Karakalpakstan [2].

Sandy soils have low productivity, very poor water-physical properties, and are extremely unfavorable for farming [3].

The reason is that the moisture retention property of the sandy soils of the desert region is very poor (the limited field moisture capacity is 7.8-9.5 %), due to the low amount of precipitation (<100 mm) and high evaporation in this region, the soil surface (0-5 cm) moisture in the layer, especially in the 0-3 cm layer, is quickly lost. A large number of winds occurring in this area (up to 10-12 times in April-May) accelerates this process [4].

As a result, it will be necessary to give wet water 1-2 times and carry out additional treatments in order to collect the planted seeds.

Seedlings harvested in later periods are damaged and partially die due to soil salinity, rootworm attack and strong winds in this area. As a result, seedlings will become sparse across the field [5].

Crops are planted early (April 5-15), in deeper layers (4-5 cm), because of insufficient heating of the soil, they germinate in a long time (15-20 days) and give sprouts.

During these periods, it rains and the formation of mud, which sharply reduces the fertility of the sown seeds. As a result, many "waves" are formed across the field, which causes a decrease in the yield of agricultural crops [6].

Field research was conducted in the conditions of sandy soils common in the Central Fergana desert region. The water level of Sizot is 2.2-2.4 meters.

The mechanical composition of the soil of the experimental field is light (sand particles >75 %, physical turbidity <10 %), low productivity (humus content 0.467-0.553 %, total nitrogen

0.048-0.056 % and total phosphorus 0.040-0.046 %), excellent water-physical properties. poor (limited field moisture capacity 7.8-9.6 %, water permeability 11458-12350 m³/ha, capillarity 44-48 cm) and is extremely unfavorable for the maintenance of agricultural crops [10].

In the field experiment, cotton and groundnut crops have high fertility, sara seeds are sown at a depth of 4.5-5.0 cm in the second ten days of April, and in the control option planted without cotton partner crops, the field fertility of seeds in the first ten days is 55.9-58.1, On the 15th day, it was 86.4-86.7 %.

When cotton was planted together with groundnut, the field fertility of crops improved dramatically. Especially, when cotton is planted together with groundnut crop, the seed germinates 2-3 days early, and the field fertility is 81.7 % (24.3 % more) in the first ten days and 95.2% (8.5 % more) on the 15th day. %) has increased.

It is noteworthy that during the first week of peanut germination, the field germination rate was 36.3 %, as the soil was raised and the seed germinated easily. However, in the next 5-7 days, rapid germination reached 97.3 % by day 15 and produced vigorous seedlings.

In April-May 2019, in the Central Fergana desert region, where field research is being conducted, the speed is 15 m/sec. strong winds over 13 times occurred in small number (3 times) and for short durations, among them, on April 24-25, the speed of which was 17 m/s when strong, and the duration of 13 hours, sand particles were blown and caused serious damage to cotton seedlings. .

In the control variant of the experiment, where cotton was planted without partner crops, 22.9 % of the plants were severely damaged by wind, 37.6 % were moderately damaged, and 39.5% were weakly damaged.

When cotton was intercropped with groundnut, the rate of damage was significantly reduced. In particular, when cotton is planted in separate rows alternating with peanuts, the damage is 21.7; It consisted of 38.1 and 40.2 %.

It is noteworthy that when cotton was planted together with peanuts in all rows, the crops germinated 2-3 days earlier, and the level of damage was slightly reduced due to the better formation of the leaf surface.

For example, when cotton was planted along with peanuts in all rows, strong damage was 12.6 %, medium 39.8 %, weak 47.8 %.

In 2019, the level of damage was higher due to the fact that strong winds occurred 10 days earlier, unlike in many years, and the leaf level of cotton and partner crops was not yet sufficiently formed.

Conclusions

Therefore, by intercropping cotton with groundnut in the sandy soils of the desert region:

- 1) achieving field fertility above 95 %;
- 2) to ensure early, strong germination of seeds for 2-3 days;

- 3) formation of full seedlings along the cultivated area;
- 4) it will be possible to protect cotton seedlings from wind erosion.

Literature

1. Рафиков А.А. //“Почвенный покров”// Опустынивание в Узбекистане и борьба с ним. Тошкент, Фан, 1988 г.
2. Ё.Тошбеков, Б.Холбоев, Х.Номозов //Тупрокшунослик ва агрокимё // Ёзбекистон миллий нашриёти. Тошкент 2018 й.70-бет
3. Мирзажонов К.М. //Лик Центральной Ферганы впрежнее и настоящее время // “GEO FAN POLIGRAG” Ташкент, 2014 г. стр 148-149; 162-164.
4. Баходиров М, Расулов А.//Тупрокшунослик//. "Ўқитувчи" Тошкент.1970 й. 257-бет
5. Мирзажонов К.М.//Научные основы борьбы с ветровой эрозией на орошаемых землях Узбекистана// Ташкент, “Фан”. 1981 г.
6. Справочник по хлопководству. Из-во “Узбекистан”, 1981 г.
7. Методика полевых опытов с хлопчатником, СоюзНИХИ, Ташкент,1991.
8. Методы агрохимических агрофизических и микробиологических исследований в поливных хлопковых районах. СоюзНИХИ, Ташкент, 1963.
9. Методика полевых и вегетационных опытов с хлопчатником. Ташкент,1973 г.
- 10.Samiyevich, a. A., & Botiraliyevich, u. N. (2020). Effectiveness of co-planting crops in sandy soils. Plant cell biotechnology and molecular biology, 21(65-66), 1-9. Retrieved from <https://archives.biciconference.co.in/index.php/PCBMB/article/view/5688>.