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Dependence of Grain Yield of Mosn Varieties in the Soil Climate Conditions of the Central Region of Uzbekistan on Cropping Period and Standards

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Annotation:

Meeting the population's need for food products and the industry's need for raw materials is one of the most pressing issues today. To achieve this, effective use of irrigated areas is essential.

One important factor in effectively using irrigated areas is planting legume crops as repeated crops after grain crops. Legumes are protein-rich, valuable food crops and play a crucial role in enhancing soil fertility within a short-rotational crop rotation system.

In our experiment, various varieties of mung beans were planted at different times and using different standards. We found that when planted early, the “Radost” variety yielded the highest grain yield at 22.9-25.7 tons/ha, the “Durdona” variety yielded 19.6-24 tons/ha, and the “Zilola” variety yielded 22.3-27.5 tons/ha. It was observed that the yield was lower in variants planted later.

Keywords: legume crops, mung beans, grain, protein, crop rotation, productivity, planting method, planting rate, planting period, biological nitrogen, soil fertility, grain quality.

Introduction.

Uzbekistan is a dry subtropical region with a sharply changing climate, relatively dry and hot weather. It is distinguished by the duration of warm days (210-240 days).

The length of warm days in this region makes it possible to produce two or three crops of agricultural crops during the year. That is, it makes it possible to grow quick food crops as a repeat crop on the fields freed from grain crops. Growing leguminous crops as a repeat crop is of great

importance in recent years, when the shortage of food products around the world is becoming more and more acute, ecological balance is disturbed and the protein problem is observed.

The grain of leguminous crops is very rich in protein and valuable amino acids, the amount of protein in the grain is on average 18-40%, which is 1.5-3.0 times higher than that of winter wheat. .

Among leguminous grain crops, mung bean is distinguished by its quick ripening and short growing season. Therefore, this crop can be grown as a repeat crop even in relatively late periods.

Mercati F., Leone M., Lupini A., Sorgonà A., Bacchi M., Abenavoli M.R. in various years abroad on the cultivation of cereals and legumes as repeated crops in irrigated fields. and Sunseri F. [9], Rivera A, Plans M, Sabaté J, Casañas F, Casals J, Rull A and Simó J. [10], in Uzbekistan Kh.N. Atabaeva [1], I. Israilov [2], A .Iminov, B. Kholikov [3], N. Khalilov, N. Ravshanova [5], U.M. Makhma-derov [4], M.A. Sattorov. [8] and many other scientists conducted research.

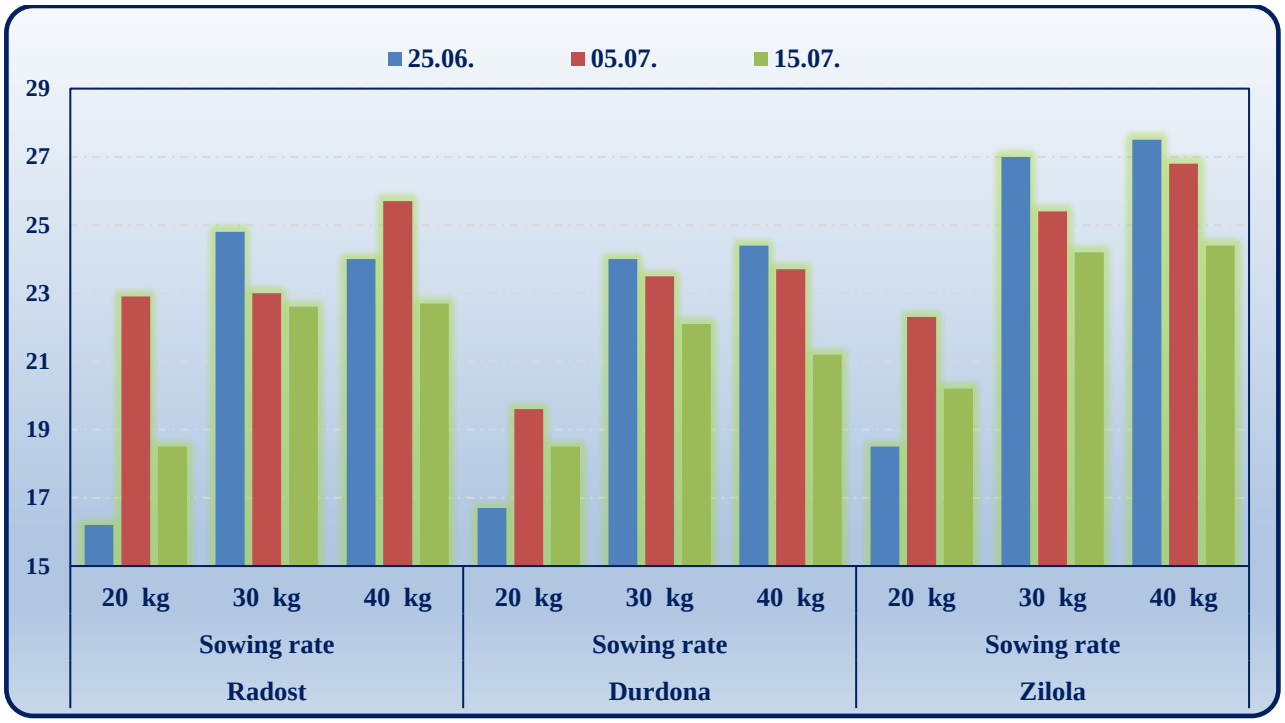
Nevertheless, there is not enough scientific information on the cultivation of leguminous grain crops, including mung bean, as a repeated crop under irrigated conditions. Correct selection of mash varieties as a repeated crop, determination of optimal planting scheme, seedling thickness and planting periods are of great scientific and practical importance.

Experimental methodology. Experiments were conducted in 2012-2014 on typical gray soils of the Tashkent region that have been irrigated since ancient times.

The experiment was carried out in the field and in the laboratory. "Radost", "Durdona" and "Zilola" mash varieties studied in the field experiments were planted in summer as a repeated crop in different rates and methods. The experiment was carried out in the field and in the laboratory. The experimental area was 0.4 ha. Field experiments were conducted according to UzPITI [7] and B.A. Dospekhov [6] methods.

Experimental results. When analyzing the productivity of mash varieties, it should be noted that productivity indicators change depending on the planting period and rate, that is, it can be seen in the conducted research. It can be seen that the yield increases when the sowing period and the rate are fulfilled at an optimal level, and this depends on the biology of the varieties, their response to external environmental factors, and agrotechnics of cultivation. How late varieties are planted affects their productivity, i.e. the growth and development of the plant, the formation of fruit organs.

When mash varieties were sown on June 25, the grain yield of the "Radost" variety varied from 16.2 to 24.0 s/h, depending on the sowing rate. Sowing rate of "Radost" variety, when 20 kg of seeds were planted per hectare, the grain yield was 16.2 s. When the sowing rate increased to 30 kg, the grain yield was 24.8 s, compared to the previous view, 8.6 s. increased to When the planting rate increased from 30 kg to 40 kg, it was observed that the grain yield was 24.0 s. At the planting rate of 20 kg/ha in the "Durdona" variety of mosh, the grain yield was 16.7 s. When the seeding rate is 30 kg, the grain yield is 24.0 s, which is 7.3 s/s higher compared to the previous view, and when the seeding rate is 40 kg, the yield is 24.4 s. compared to the first appearance, it increased by 7.7 s/ha, and the grain yield was equal to 18.5 s. when the seeding rate was 20 kg/ha in the "Zilola" mash variety. When the seeding rate was 30 kg, the yield was 27.0 s., which increased by 8.5 compared to the previous option, and when 40 kg was planted, the grain yield was 27.5 s. Compared to the previous view, the yield increased by 0.5 s. The lowest yield was obtained when 20 kg of seeds were planted per hectare. When the planting rate was increased by 30 kg, the yield increased significantly. In the next option, when the planting rate was 40 kg, the yield increased significantly, but there was no advantage compared to the previous option.

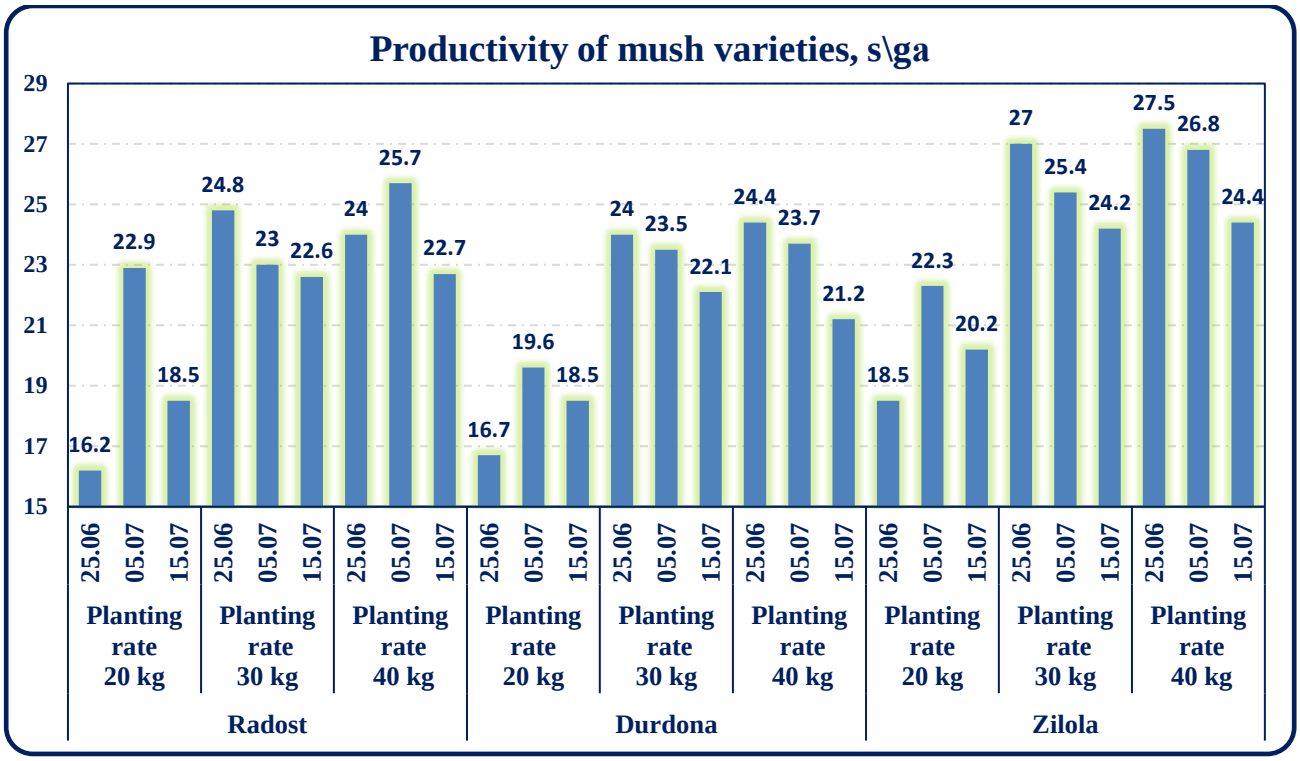


Picture 1. The influence of planting dates and rates on the yield of mash varieties

Information on the effect of planting periods and rates on grain yield of different mash varieties is presented in Table 1 and Fig. 1. In the second planting period, when mush varieties are planted on July 5, the "Radost" variety has a grain yield of 22.9 to 25.7 s, depending on the sowing rate. changed up to At the planting rate of 20 kg, the yield was 22.9 s/ha.

***Table 1.*Planting dates on the productivity of mash varieties and the influence of the norm, s/ga (2012-2014 years)**

№	Varieties	Sowing rate, kg	Planting periods		
			25.06	05.07	15.07
1.	**Radost**	20	16,2	22,9	18,5
		30	24,8	23,0	22,6
		40	24,0	25,7	22,7
2.	**Durdona**	20	16,7	19,6	18,5
		30	24,0	23,5	22,1
		40	24,4	23,7	21,2
3.	**Zilola**	20	18,5	22,3	20,2
		30	27,0	25,4	24,2
		40	27,5	26,8	24,4
	EKF_{05} s/ha %		1,62 4,84	1,07 4,48	0,99 4,32



Picture 2. Effect of planting rate and duration on the productivity of mash varieties.

When the sowing rate increased by 30 kg, it was observed that the grain yield was 23.0 s., which increased by 1.9 s. When the sowing rate increased from 30 kg to 40 kg, the grain yield was equal to 25.7 s/h, and it was observed that it increased by 2.8 s/h compared to the first option. The grain yield was 19.6 s. when the planting rate of mosh variety "Durdona" was 20 kg/ha. When the seeding rate is 30 kg, the grain yield is 23.5 s, which has increased by 3.9 s/h, and when the seeding rate is 40 kg, the grain yield is 23.7 s, the first compared to appearance increased by 4.1 s/h; when the "Zilola" variety of mosh was planted at the rate of 20 kg/ha, the grain yield was 22.3 s. When planting 30 kg per hectare, the grain yield was 25.4 s., which increased by 5.1 s. it was observed that when the planting rate was 40 kg, the grain yield was 26.8 s., and it increased by 4.5 s/s compared to the first appearance. The lowest yield was obtained when 20 kg of seeds were planted per hectare. When the planting rate was increased by 30 kg, the yield increased significantly. In the next option, even when the planting rate was 40 kg, the yield increased significantly, but there was no advantage compared to the previous option.

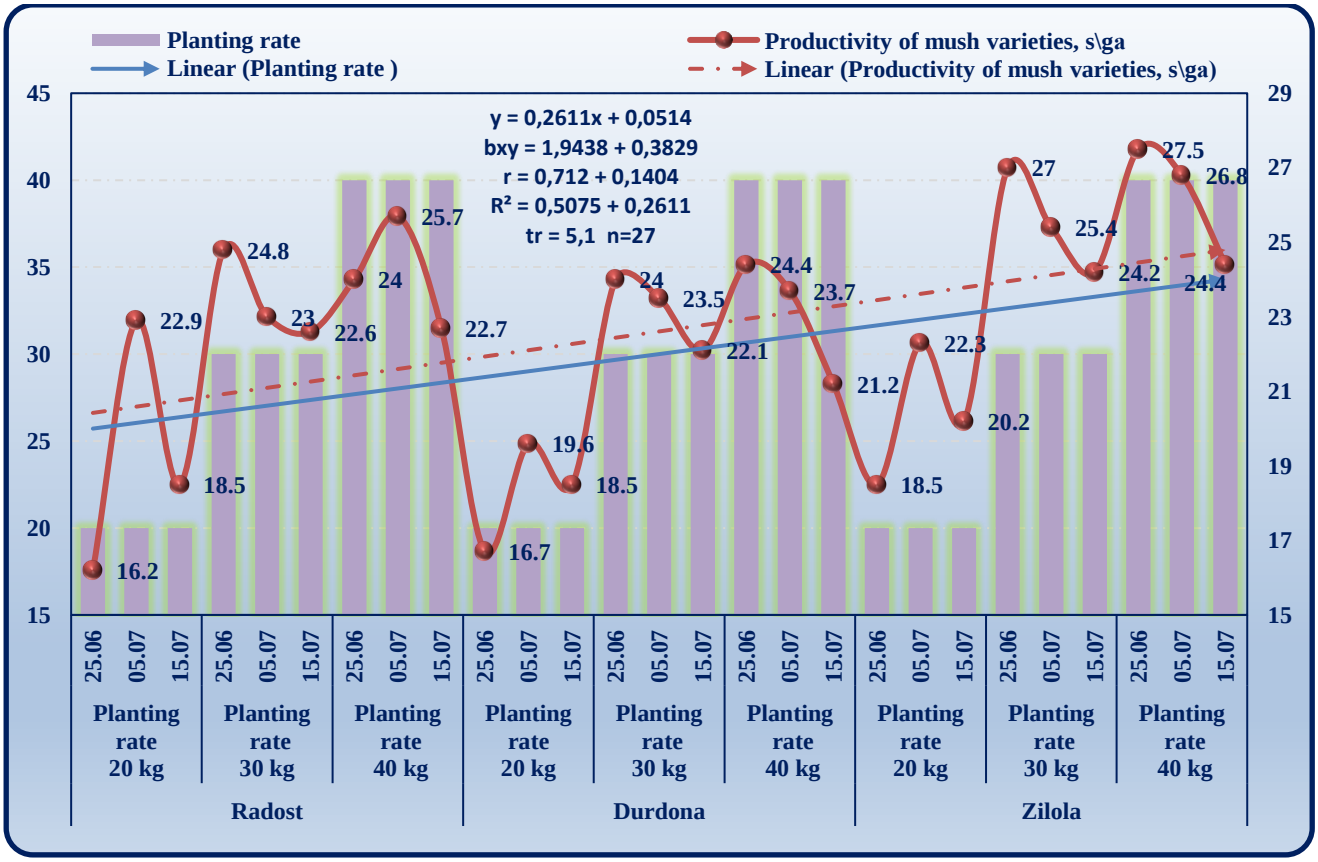
When mash varieties are planted on July 15, the grain yield of the "Radost" variety is 18.5 s, depending on the sowing rate. varied from to 22.7 s/. At the sowing rate of 20 kg/ha, a yield of 18.5 h was obtained. Sowing rate is 30 kg. when it increased to 22.6 s, the yield increased by 4.1 s compared to the first appearance. When the sowing rate increased from 30 kg to 40 kg, it was observed that the yield was 22.7 s. In the "Durdona" variety of mosh, when the planting rate was 20 kg, the grain yield was 18.5 s. When the planting rate is 30 kg, the grain yield is equal to 22.1 s., which has increased by 3.6 s/m compared to the previous appearance; 21.2 s when the sowing rate is 40 kg. the crop was harvested and the yield increased by 2.7 s/h; in the "Zilola" variety of mosh, when the planting rate was 20 kg, 20.2 s. yield was obtained. When 30 kg of seeds were sown, the yield was 24.2 s., which increased by 4.0 s. compared to the first appearance. When the planting rate was 40 kg, the yield was 24.4 s/ha, it was observed that it increased by 4.2 s/ha compared to the first appearance. The lowest yield was obtained when 20 kg of seeds were planted per hectare. When the planting rate was increased by 30 kg, the yield increased significantly. In the next option,

even when the planting rate was 40 kg, the yield increased significantly, but there was no advantage compared to the previous option.

The rate and duration of planting had a significant impact on the productivity of mash varieties. Less yield was obtained when 20 kg of seeds were planted per hectare in all planting periods. The maximum yield was obtained when planting 30-40 kg/ha. However, when 40 kg/ha was planted, there was no advantage over the previous option or the 30 kg/ha norm. Therefore, it is recommended to plant 30 kg of seeds per hectare for production. Planting periods also had an effect on productivity. The highest yield was obtained when planting at the end of June. When it is planted in late periods, the yield is reduced.

As it can be seen from the data of the above table, high productivity indicators were recorded in all studied varieties in the options with a high planting rate when mosh was planted as a repeat crop in relatively early periods, i.e. on June 25.

When mush varieties were maintained at different planting rates and planting periods, at the end of the period of operation, the yield indicators of mush varieties increased as the planting rate increased. A higher yield was found when 30 kg/ha was planted, and a higher yield was obtained when mush varieties were planted in the last ten days of June. When the correlation relationship between these two indicators is calculated according to the method of Dospekhov [6], it is observed that there is a positive correlation relationship between these indicators close to the high level, the correlation coefficient r=0.712 (R2=0.5075) equal to , indicating the existence of a positive association above the medium level (Picture 3).



Picture 3. The positive correlation of planting dates and rates on the productivity of mash varieties

The highest grain yield of repeatedly planted mash varieties was observed at 27.5 s/ha in the "Zilola" variety on June 25 when 40 kg was planted. It was 9.0 s/h higher than the control variant, and 11.3 s/h higher than the absolute control. But there was no advantage compared to the previous option with a planting rate of 30 kg.

Therefore, it is recommended to sow mash varieties at the rate of 30 kg/ha as a repeated crop in the conditions of irrigated typical gray soils of the Tashkent region.

Conclusion.

1. The climatic conditions of the Tashkent region and the sum of useful temperatures are considered sufficient for the cultivation of leguminous grain crops, including mash, as a repeated crop.
2. Using irrigated land wisely, crops are repeatedly grown to get 2-3 harvests in a year. In the experiment, mosh varieties were planted in different terms and standards, and the highest grain yield was 22.9-25.7 s/ha in the "Radost" variety, and 19.6-24.4 in the "Durdona" variety. s/ha, 22.3-27.5 s/ha was obtained in "Zilola" variety. It was observed that the yield was lower in variants planted later.
3. The highest rate of grain yield of repeatedly planted mash varieties was observed at 27.5 s/ha in the "Zilola" variety on June 25 at the rate of 40 kg. It was 9.0 s/h higher than the control variant, and 11.3 s/h higher than the absolute control. But there was no advantage compared to the previous option with a planting rate of 30 kg.
4. In the conditions of irrigated typical gray soils of the Tashkent region, when mash varieties are cultivated as a repeated crop at different planting rates and planting periods, the yield indicators of mash varieties at the end of the period of operation as the planting rate increases, the higher yield is 30 kg/ha was determined at planting and higher yields were obtained when mush varieties were planted in the last ten days of June.

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