Journal of Advanced Zoology
ISSN: 0253-7214
Volume 44 Issue S-07 Year 2023 Page 916:920

Coating Agricultural Seeds With A Solution Of Mineral Fertilizers In Water.

Mamadaliyev Adkhamjon Tukhtamirzaevich[1*], Muminjonov Nozimjon Ne'madjon ugli[2]

[1]PhD Namangan Engineering Construction Institute, 160103, Republic of Uzbekistan, Namangan, I. Karimov st., 12, Email: Adhamjon6300@gmail.com*
[2]Intern-teacher Namangan Engineering Construction Institute, 160103, Republic of Uzbekistan, Namangan, I. Karimov st.,12

***[*]Corresponding Author:** Mamadaliyev Adkhamjon Tukhtamirzaevich*
[*]PhD Namangan Engineering Construction Institute, 160103, Republic of Uzbekistan, Namangan, I. Karimov st., 12, Email: Adhamjon6300@gmail.com

Article History

Received: 12 September 2023
Revised: 17 December 2023
Accepted:26 December 2023

Abstract

This article presents the results of the comparison of the technologies of shell planting of feather seeds with mineral fertilizers in experimental conditions and the results obtained from experiments on shell planting of seed seeds with macro and micro fertilizer compositions.

***Keywords:** Seeds, Electrochemically Activated Water, Shelling of Seeds, Shelling Device, Macrofertilizers, Microfertilizers*

1. Introduction

Based on practical experiments on the shell planting of seed seeds with macro - and micro-fertilizer compositions, we (2004, 2005, 2006) Turaqurgan District Small-strong gulshani cotton seeds of the hairy S-6524 variety in the collective farm (2004, 2005, 2006). 60*30*2 in the scheme) in the current method (the first option in which the doried chigit is planted) with electrochemically activated water (pH=10), coagulated (the second option) with ammophos (the third option), planted ammophos+СиSO4*5H_2O (the fourth option), crusted with superammophos-K (the fifth option) and superammophos-K+СиSO$_4$*5H2O (the sixth option). The level of phosphorus and potassium supply of cultivated areas, which we conducted an experiment (2004-2005-2006 "small fortress farm), is shown in Table 1 below). The level of phosphorus and potassium supply of arable land (based on a cartogram) on the farm "small fortress"

Table 1

№	The degree of phosphorus and potassium supply to the soil	Humus %	Amount in soil, mg/kg			
			Phosphorus P_2O_5	To 1 %	Potassium K_2O	To 1 %
1	Very little	0-0,40	0,15	0-100 101/11	0-100	13/1,4
2	Low	0,41-0,80	16-30	505/55,6	101-200	575/63,4
3	Average	0,81-1,20	31-45	295/32,5	201-300	313/34,4
4	Enough	1,21-1,60	46-60	8/0,8	301-400	8/0,8

A total of 1 ha of field was selected to carry out the experiments, and the options were planted in four repeated ways out of four rows. After planting, all options were lightly watered. 1.05.2004 when checking the germination of grain sprouts on the basis of its germination (three in Agate on the basis of three repetitions) in the first option (dosed chigit)ten pieces every 2 meters range, in the second option (electrochemical activated water pH=10) in 11,3 units in the third option (shell with ammophos)in 9 units, in the fourth option (ammophos+ $CuSO_4*5H_2O$, in superammofos-k shell), 12,0 pieces were germinated, in the sixth option (superammofos+ $CuSO_4*5H_2O$ shell), 11 pieces were germinated. In the 2004 checks (1.05.2004), the uniability was 16,6 units in the first option, 11,6 units in the second option, 9.6 units in the third option, 14,3 units in the fourth option, 13,6 units in the fifth option, and 12,6 units in the sixth option. In the 2004 transfers, however, it was observed that in the corresponding order (1.05.2004) there were 16 units in the first option, 9.6 units in the second option, 16.6 units in the third option, 12,6 units in the fourth option, 15 units in the fifth option, and 12 grain sprouts in the sixth option. The germination of goose sprouts was calculated in all observations every five days interval. The study of the effect of shell sowing of seed seeds on the germination of grain sprouts in relation to the first option (background)was concluded that in the third and fifth options (when the ammophos and superammofos-K fertilizer were husked with it), in the fourth and sixth options ($CuSO_4*5H2O$) there was not much difference in the last But the positive effect was clearly felt in the observations after the last ten days. After the 2004 seed planting, the weather came well and the sprouts sprouted evenly. Removing excess plants, 98, 2 in the first option on average in 10 m, 80, 8 in the second option, 85, 9 in the third option, 94.8 in the fourth option, 82,0 in the fifth option, 82,4 seedlings in the sixth option remained. And in 1993-1994, after removing excess plants, 78, 8-94, 2 pieces and 76, 6-85, 8 pieces of ghee seedlings of 10 m respectively developed in the experimental options.

The height of the cotton in the observations of the experiments in 2004 (the first option) on the background on 25.06.2004 was on average 16, 20 cm, the number of lateral heads was 1, 8 pcs. and the combs were 1,02 pcs.) treated with the second variant and ammophos (third variant), superammophos-K (fifth variant) treated with micronutrient-free shelled seeds in each bush cotton in the field planted with 1-1, 2 pieces of side kings more than the current method and more yield elements. In particular, the positive and dramatic effect on crop elements, the growth and development of cotton was observed in the fields planted with electrochemically activated water (the second option), coated with ammophos+$CuSO_4*5H_2O$ (the fourth option) and coated with superammophos-K+$CuSO_4*5H_2O$ (the sixth option). Was evident. In the experiments carried out in 2004-2005, compared to the current method, it was observed that the height of cotton, the number of side kings, and the number of yield elements were more. The results of the experiment are presented in the tables. When the changes in crop elements were observed in the experiments in August and September, compared to the current method (the first option), in all the remaining options, in particular, electrochemically activated water was used (the second option) and shelled ammophos and superammophos with the addition of trace elements ($CuSO_4*5H_2O$) in the fourth and sixth options. It was observed that the number of flowers is more than the first option in the current method. Harvesting in the experiments was completed in 2004 with the fifth harvest. Compared to the current method (the first option), the cotton yield in the third and fifth options was 1,8-2,0 tons/ha, respectively. In the second option, 6 ts/ha, in the fourth option 5 ts/ha, and in the fifth option, this indicator was more than 5,6 ts/ha, respectively. In the experiments conducted in 2004-2005, compared to the current method, the cotton yield was 2,6-2,5 t/ha (2004) and 2,3-2,5 t/ha (2005) higher in the third and fifth options. In 2004, 7,2 ts/ha in the second option, 6,7 ts/ha in the fourth option, and 7,1 ts/ha in the sixth options, respectively, and in 2005, 6,8 ts/ha in the second option, 5.9 ts in the fourth option. /ha and in the sixth option, respectively, 6,3 t/ha cotton yield was observed to be more than the current method. Although it was recommended to start planting on April 10, despite the cold and rainy weather, they started planting on March 24 in many farms (we distributed seeds to 6 farms). At that time, the soil moisture was not enough and the soil temperature was only 2-3^{0}C. After planting, the temperature will drop again, alternating with heavy rains. Due to this, germination of seeds was not noticed. Farms treated with bronatak thermal method and shelled (shelled seed was planted on 153 hectares, of which 15% was saved). But after a few days, when the sprouts began to germinate, the shelled seeds also germinated one after another, and then the sown seeds developed better than the cotton. And the contractors did not replant and got a good harvest. In the cotton fields saved from replanting with campaigning and planted after April 10 (April 11-13), we
We monitored cotton development and yield (Table 2). After removing excess plants ,the number of seedlings in both fields remained close to each other. The results of monitoring the development of cotton in the Kichik-Kurgoncha Gulshan farm, Toraqorgon District

Table 2

Verification period	Variant	1 hectare number of seedlings thousand pieces	Height of the pores (sm)		Harvest elements pieces (100 forces)				
			Between	Average	cotton flower	Flower	The shovel		Average from 1 Bush
							Opened	Not opened	
12.07.2004	Option1 Background	105	46-52	49	981	29	-	-	10,0
	Option2 experiment	102	54-60	57	1051	39	-	-	10,9
18.07.2004	1 option	105	53-63	58	1082	168	-	31	12,8
	2 option	102	63-72	68	1142	252	-	53	14,5
28.07.2004	1 option	105	64-71	67	652	390	-	222	12,6
	2 option	102	72-82	77	725	492	-	276	14,9
12.08.2004	1 option	105	72-80	76	517	338	-	435	12,9
	2 option	102	78-89	84	587	394	2	598	15,8
2.09.2004	1 option	105	-	-	52	28	166	764	10,1
	2 option	102	-	-	72	86	212	920	12,9

Selected six hectares for inspection in the third brigade of Dekhkonabad collective farm (seeds were planted on April thirteenth). 2%) +copper sulfate =P_2O_5: N: Си = 4:1:0.05) the shell weight was 26-27% of the total weight, the total moisture content was 9%. After the seed was planted, it rained again. It germinated in 9 days. After another week, the agates were watered. It was found that there were more than 100,000 seedlings per hectare in the fields. The current method (background) developed 105,000 cotton per hectare in the first option, and 102,000 cotton per hectare in the second option. In the experimental version, the growth and development of the cotton was fast (in the inspections from 12.07.2004 to 12.08.2004), it was 8-10 cm higher than the cotton in the background, and there were two more lateral heads on average. The yield elements were on average two to three pieces, and he kept them well. Root rot disease did not occur (on the contrary, the roots became strong and multi-fibrous), gummosis and wilt disease were reduced by 80% in the experiment (2%) compared to (10%). Spades, in the experimental version, began to open from the twelfth of August. The harvest was done ten days ago, and on the fourth of September cotton picking began. Background cottons were finished with five skins and experimental cottons were finished with four skins. Productivity increased by seven centners per hectare (44 tons/ha) compared to the background (37 tons/ha) (Table 3). Development and productivity of cotton in experiments at Kichik-Kurgoncha gulshan farm of Tora-Kurgan district (Namangan-77 variety, on average from 100 seedlings, 1996) are presented in 3 tables.

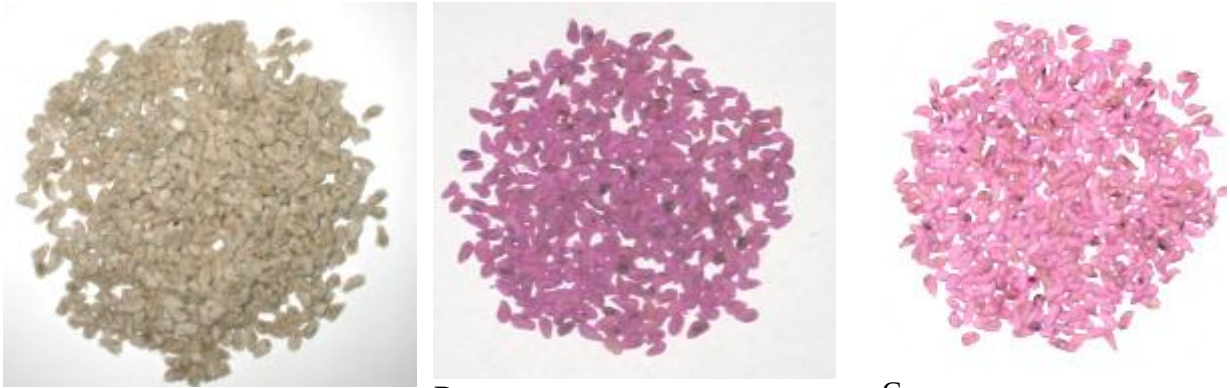
Table 3

Option	Cotton seed variety	Day of sowing seeds	Day of the beginning of the harvest	Productivity					Average productivity	Additional yield
				1 harvest	2 harvest	3 harvest	4 harvest	5 harvest		
1	Moisture 77 without shell	13.04.2004	7.09.2004	7,0	11,0	10,0	6,0	3,0	37,0	-
2	Moisture-77 shell	13.04.2004	4.09.2004	10,0	15,0	13,0	6,0	-	44,0	7,0

For the first time, we tested the structure and working processes of the devices in the experimental workshop for the purpose and identified their shortcomings (before we used a special-small device). The sprayer sprayer, which prepares an aqueous solution (suspension) of macro- and micro-fertilizers, worked well. We made a vertical dryer for drying. Wet-shelled seeds were fed from above, and because they fell quickly through the plates with holes arranged in a row, they were fed under hot air, and the shell did not dry sufficiently. Then we used a dryer with a horizontal horizontal drum (the drum is four meters long). Since the time for seed formation is 2-3 minutes, the hot air supplied to the dryer at a temperature of 270°C parallel to the seed reduces the total moisture content of the shelled seed from 19-21% to 15-16%.

In this case, the temperature of the air-steam mixture leaving the dryer was 75-80°C, and the temperature of the shell seed was 40-50°C. The germination rate of the seed was 76-80%. In order not to dry (kill) the seed core, we lowered the hot air temperature to 150°C. In this case, the output was equal to 50°C. The remaining

moisture had to be dried in the open air. Later, we studied the process of drying the shell. In this case, we studied the process of two-stage drying of shelled seeds at these temperatures so that the temperature of the seed does not exceed 50-65ºC. For the experiment, Namangan-77, cotton seed varieties S-6524 and Fargona-3 were used. The seeds were unsorted and hairy. The moisture content was 7.8-8.5%. A) hairy seeds; B) hairy seeds prepared for planting in the traditional way; C) hairy seeds coated with a solution of mineral fertilizers in water



A B C

Figure 1. Samples of hairy seeds prepared for planting in different ways

We prepared a suspension by mixing ammophos, ammonium nitrate and copper sulfate salts mixture (P_2O_5:N:Си=4:1:0.05) in water. Ammofos particle size is less than 500 microns and when the water content in the suspension is 32-33%, a good flowable suspension was formed when mixed for 0.5 hours (we also prepared the fertilizer mixture in a 1% aqueous solution of NaKMTS). Figure 1 shows samples of initial hairy seeds, hairy seeds prepared for planting in the traditional way, and hairy seeds coated with a solution of mineral fertilizers in water. Covering hairy seeds with nitrogen-phosphorus fertilizers increases their spreadability and allows obtaining seeds with high germination and potential yield in laboratory and field conditions. Using hairy seeds as seeds reduces seed consumption per hectare by 2 times, and the productivity of fields is considered the most valuable. by increasing the yield from 3,3 t/ha to 7,0 t/ha due to the first harvest, it increases the material interest of farms.

2. Used Literature

1. Tuxtamirzayevich, M. A. (2020). Study of pubescent seeds moving in a stream of water and mineral fertilizers. International Journal on Integrated Education, 3(12), 489-493.
2. Мамадалиев, А. Т. (2021). Теоретическое обоснование параметров чашеобразного дражирующего барабана. Universum: технические науки, (6-1 (87)), 75-78.
3. Tuxtamirzaevich M. A. Presowing Treatment of Pubescent Cotton Seeds with a Protective and Nutritious Shell, Consisting of Mineral Fertilizers in an Aqueous Solution and a Composition of Microelements //Design Engineering. – 2021. – С. 7046-7052.
4. Гафуров К., Росабоев А., Мамадалиев А. Дражирование опущенных семян хлопчатника с минеральным удобрением //ФарПИ илмий-техник журнали.–Фарғона. – 2007. – №. 3. – С. 55-59.
5. Rosaboev A., Mamadaliyev A. Theoretical substantiation of parameters of the cup-shaped coating drums //International Journal of Advanced Research in Science, Engineering and Technology. – 2019. – Т. 6. – №. 11. – С. 11779-11783
6. Росабоев А. Т. и др. Теоретическое обоснование движения опушенных семян хлопчатника после поступления из распределителяв процессе капсулирования //Science Time. – 2017. – №. 5. – С. 239-245.
7. Росабоев А., Мамадалиев А. Предпосевная обработка опушенных семян хлопчатника защитно-питательной оболочкой, состоящей из композиции макро и микроудобрений //Теоритические и практические вопросы развития научной мысли в современной мире: Сборник статей. Уфа Риц БашГУ–2013.–С.174-176.
8. Mamadaliyev A. T. son Bakhtiyor Maqsud, Umarov Isroil //Study of the movement of pubescent seeds in the flow of an aqueous solution of mineral fertilizers. A Peer Revieved Open Access International Journal. – 2021. – Т. 10. – №. 06. – С. 247-252.

9. Мамадалиев А. Т. Уруғлик чигитларни макро ва микроўғитлар билан қобиқловчи курилманинг ўлчамлари ва иш режимларини асослаш //МИРОВАЯ НАУКА 2022. ПРОБЛЕМЫ И ПЕРСПЕКТИВЫ РАЗВИТИЯ. МЕЖДУНАРОДНЫЕ КОММУНИКАЦИИ. – 2022. – С. 54-57.
10. Tukhtamirzaevich, M. A. (2022, December). Results of laboratory-field testing of hairy seeds coated with mineral fertilizers. In Proceedings of International Educators Conference (Vol. 1, No. 3, pp. 528-536).
11. Mamadaliev, A. (2012). Тукли чигитларни қобиқлаш барабанининг параметрларини назарий асослаш. Scienceweb academic papers collection.
12. Абдуллаев М. Т., Мамадалиев А. Т. Изучение эффективности дражиро-вания семян хлопчатника в водном растворе минеральных удобрений и композиции микроэлементов.« //Экономика и социум. – 2022. – №. 1. – С. 92.
13. Mamadaliev, A. (2014). ТУКЛИ ЧИГИТЛАРНИ МИНЕРАЛ ЎҒИТЛАР БИЛАН ҚОБИҚЛОВЧИ ҚУРИЛМАНИНГ КОНУССИМОН ЁЙГИЧИ ПАРАМЕТРЛАРИНИ АСОСЛАШ. Scienceweb academic papers collection.
14. Mamadaliev, A. (2002). УРУҒЛИК ЧИГИТЛАРНИ МАКРО ВА МИКРОЎҒИТЛАР КОМПОЗИЦИЯЛАРИ БИЛАН ҚОБИҚЛАШ ТЕХНОЛОГИЯСИ ВА ҚУРИЛМАЛАРИ. Scienceweb academic papers collection.
15. Mamadaliev, A. (2021). Theoretical study of the movement of macro and micro fertilizers in aqueous solution after the seed falls from the spreader. Scienceweb academic papers collection.
16. Мамадалиев А. Т., Мамаджанов З. Н. Минерал ўғитлар ва микроэлементли композицияларни сувдаги эритмаси билан қобиқланган тукли чигитларни лаборатория-дала шароитида синаш натижалари //Экономика и социум. – 2022. – №. 2. – С. 93.
17. Росабоев, А. Т., Мамадалиев, А. Т., & Тухтамирзаев, А. А. У. (2017). Теоретическое обоснование параметров капсулирующего барабана опушенных семян. Science Time, (5 (41)), 246-249.
18. Arislanov, A., Abdullaev, M., Mamadaliev, A., Mamadjonov, Z., & Isomiddinov, O. (2022). Пахта ҳосилдорлигини оширишда уруғлик чигитларни минерал ўғитлар билан қобиқлаш ва электрокимёвий фаоллашган сув билан ивитиб экиш. Science and innovation, 1(D5), 171-179.
19. Mamadaliev A. ҚИШЛОҚ ХЎЖАЛИК ЭКИНЛАРИ УРУҒЛАРИНИНГ ЮЗИНИ ХИМОЯ-ОЗУҚА ҚОБИҒИ БИЛАН ҚОПЛАШ УСУЛИ ВА УНИ АМАЛГА ОШИРИШ УЧУН ҚУРИЛМА //Scienceweb academic papers collection. – 2003.
20. Гафуров, К., Мамадалиев, А. Т., Мамаджанов, З. Н., & Арисланов, А. С. (2022). Комплекс минерал озуқаларни хўжаликлар шароитида тайёрлаш ва қишлоқ хўжалиги уруғларини макро ва микро ўғитлар билан қобиқлаш.
21. Тўхтақўзиев, А., Росабоев, А., & Мамадалиев, А. Тукли чигитларни қобиқлаш барабанининг параметрларини назарий асослаш. ФарПИ илмий-техник журнали. Фарғона, 2012йм (2), 34-36.
22. Mamadaliev, A., Mamadjonov, Z., Arislanov, A., & Isomiddinov, O. (2022). ҚИШЛОҚ ХЎЖАЛИГИДА УРУҒЛИК ЧИГИТЛАРНИ АЗОТ ФОСФОРЛИ ЎҒИТЛАР БИЛАН ҚОБИҚЛАШ. Science and innovation, 1(D5), 180-189.
23. Tukhtamirzaevich, M. A. (2022, December). DIMENSIONS AND JUSTIFICATION OF OPERATING MODES FOR PANING DEVICE OF HAIRED COTTON SEEDS WITH MACRO AND MICRO FERTILIZERS. In International scientific-practical conference on" Modern education: problems and solutions" (Vol. 1, No. 5).
24. Tukhtamirzaevich, M. A. (2022). Dimensions and justification of operating modes for paning device of haired cotton seeds with macro and micro fertilizers. International scientific-practical conference on" Modern education: problems and solutions"(Vol. 1, No. 5).
25. Tukhtamirzaevich, M. A. (2023). Planting seeds with nitrogen phosphorus fertilizers. principal issues of scientific research and modern education, 2(1).
26. РУз, П. (2007). IAP 03493. Способ покрытия поверхности семян сельскохозяйственных культур защитно-питательной оболочкой и устройства для его осущетсвления/К. Гафуров, А. Хожиев, АТ Росабоев, АТ Мамадалиев. БИ–2007, 11.
27. Tukhtamirzaevich, M. A. (2023). LABOR PROTECTION IN MAINTENANCE AND REPAIR OF AGRICULTURAL MACHINES. World of Science, 6(6), 63-72.