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IMPORTANCE OF THE MAIN ACTIONS ON PRODUCING AND PROTECTING POTATO YIELD

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INTRODUCTION

Potato (Solanum tuberosum L.) is one of the agricultural crops, which is included in the main nutrition ration by taking into consideration that it consists of many nutritious elements and necessary for human organism. Therefore, the degree of using it as the second bread is increasing.

If we consider today's requirement it is obvious that potato products, which are being produced in agricultural branch, is not enough for the number of population and providing them using it as a food.

However, different types of potato is at the place after grain crops according to sowing field, due to the fact that it is the type of crop, which has been planting in recent years, received yield is little. The main reason is that the scientific basis of creating potato types, which are suitable for agro climate conditions of the region, the most optimal sowing periods, used agrotechnical methods, was not fully made. Apart from this, there is a biotic factor that pests, which were adapted in the biotope of potato and widely spread in the agrobiocenosis, gather in the field, eat vegetative, generative organs of the plant, decrease the amount and quality of yield.

Therefore, in order to increase the yield received from this important kind of crop, it is required to determine types of potato, which meet the differences of agro climate, indicating sowing schemes, conducting agrotechnical actions based on scientific suggestions. Saving the produced yield by applying controlling actions of pests, which negatively effect on the growth-development of plant and collecting yield, at the proper time.

THE OBJECT OF RESEARCHES AND USED

Methodological ways, which were recommended by B.J.Azimov, B.B.Azimov, V.I.Zuev, T.E.Ostonakulov, and others, were used in order to receive yield from the different types of crops, which were sown in the potato biotope of agrobiocenosis of Karakalpakstan. Methods of B.P.Adashkevich, Sh.T.Khodjaev, V.I.Tanskiy were used in conducting controlling actions in order to define types of potato pests and destroying damage. Experiments were carried out on the basis of methodological way of B.A.Dospekhov.

RESULTS RECEIVED FROM THE RESEARCH

It was obvious that positive and negative effects of many abiotic and biotic factors should be taken into account in sowing early, middle and late ripening types of plants in potato biotope of fields in agrobiocenosis of Karakalpakstan. Because increasing the temperature by 40-46 ^{0}C in summer, decreasing comparative air moisture by 15-20 %, which are the main elements of abiotic factors, influence negatively on the growth-development of potato types, and require using additional agrotechnical actions in ripening phases of yield. At the same time when uncomfortable factors affecting potato types, adapted and second degree pests of potato appear in the field, and it was determined that gathered yield can be saved by conducting some additional controlling actions.

As a result of scientific researches, which were being carried out for defining affecting degree of these kinds of uncomfortable factors, it was scientifically proved that there is an opportunity of receiving high yield by sowing potato types shown in table 1.

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As can be seen from this, when the mentioned potato types had been sown until April 10 in the

schemes 70x30 or 90x20, in the depth of 5-6 or 9-10 cm, it was determined that potato seedlings grow in 18.6-19.1 days, and the height of the stem is 68.9-72.6 cm, the number of leaves is 178.5-181.3 pieces, scale is 0.78-0.81 m^2 , 4.9-5.4 pieces of tubers appear. As a result, the weight of one tuber was 42.6-63.2 grams, the amount of yield reached to 401.2-464.1, and 20.2-21.9 tons of yield received from each hectare, and it was determined that qualitative yield with an expenses of 95.1-97.4 % was produced.

From chemical preparations, which were permitted to use in controlling pests spread in potato fields, increase and damage highly, decis 2.5% k.e.-0.1-0.15 l/ha, karate-zeon 5% k.s-0.2 l/ha, kinmax 5% k.e.-0.15-0.2 l/ha, sherpa 25% k.e. -0.1-0.16 l/ha were used with the help of sprayers, which hanged on tractors, and there was defined the opportunity of decreasing the number of pests. After applying the mentioned method decreasing the number of pests by 95.8- 98.3 % provided fully saving the yield.

Controlling action was recommended to industry, which destroy pests in their egg phase, when trikhogramma entomopagous multiplied in the biolaboratory was distributed three times (60x80x60 thousand pieces), 200 000 pieces for each hectare in controlling eggs of autumn and exclamation mark earworms starting from early spring in potato fields.

Table 1
Sowing periods of potato types recommended in potato biotope of agrobiocenosis of Karakalpakstan and influencing factors
years 2019-2021

Types	Optimal sowing periods	In 70x30 scheme and depth, cm	In 90x20 scheme and depth, cm	Negative influencing factors	
				Abiotic	Biotic
Zarafshan	26-28.03	5-6	5-6	Decreasing the temperature by + 10 ^{0}C, increasing by 40 ^{0}C. Decreasing comparative moisture by 15-20 %. Decreasing the amount of rain by 80-100 mm.	From pests Gryllotalpa gryllotalpa L., Agriotes eticulosus Cond., Agrotis segetum Den., Epicauta erythrocephala Pall., Gryllotalpa gryllotalpa L.
		9-10	9-10		
	05-06.04	5-6	5-6		
		9-10	9-10		
Arnova	26-28.03	5-6	5-6		
		9-10	9-10		
	05-06.04	5-6	5-6		
		9-10	9-10		
Sante	26-28.03	5-6	5-6		
		9-10	9-10		
	05-06.04	5-6	5-6		
		9-10	9-10		
Evolution	26-28.03	5-6	5-6		
		9-10	9-10		

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	05-06.04	5-6	5-6		
		9-10	9-10		
Romano	26-28.03	5-6	5-6		
		9-10	9-10		
	05-06.04	5-6	5-6		
		9-10	9-10		
Dusmpalek (Etalon)	26-28.03	5-6	5-6		
		9-10	9-10		
	05-06.04	5-6	5-6		
		9-10	9-10		

CONCLUSION

Early ripening potato types, which were sown in potato biotope of the northern regions of Karakalpakstan agrobiocenosis, should be sown from the third decade of March until the first decade of April. When types were sown in 70x30 or 90x20 scheme or 5-6 or 9-10 cm depth according to the biological opportunities and agrotechnical methods were used, 20.2-21.9 tons of yield is received from each hectare in the degree of high product expenses. It is recommended to conduct controlling actions by applying chemical preparations, which were permitted for using in potato field in controlling the main adapted pests, and by using biological method, which destroys earworms in egg phase, in order to fully save the gathered yield.

REFERENCES

1. *Adashkevich B.P. «Biological protection of cucurbits crops from harmful pests». –Tashkent: «FAN», 1983. –p. 180-188.*
2. *Azimov B.J., Azimov B.B. Methodology of conducting experiments in vegetable, cucurbits crops and potato production. –Tashkent: UME.2002. –p. 11.*
3. *Azimov B.J., Azimov B.B. Statistical analysis of experimental results. T.: 2006.-p. 163.*
4. *Dospekhov B.A. Methodology of field experiment. - M.: Kolos, 1985.-p. 351.*
5. *Zuev V.I. Recommendations on potato production in saline soils. –Tashkent. MSBH. 2003. –p. 9.*
6. *Ostonakulov T.E. The technology of vegetable production. –T.: Sharq, 2003. – p. 394.*
7. *Ostonakulov T.E., Avezov Sh. Testing of field experiments, methodological manual. -Tashkent:-2002.-p. 101.*
8. *Tanskiy V.I. Biological basis of pest damage. - M.: «Agropromizdat», 1988.-p. 182-198.*
9. *Khakimov R.A., Abbozov A.M. Recommendation on the technology of production and types of vegetable, cucurbits crops and potato for Tashkent region. -T.: 2006. –p. 26.*
10. *Khujaev Sh.T. Modern ways and devices of protecting plants from pests. "Navruz" publishing house, -2015.-p. 552.*

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