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Influence of Irrigation Regime and Norms on the Yield of White Cabbage

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Annotation: Influence of irrigation regime and norms on the yield of white cabbage.

In studies conducted with late watering of white cabbage, the yield was 61.6% higher in the 80-80% variant compared to the 60-60% control variant in the Saratoni variety. In 60-60% of the control variant of variety Sharkiya-2, the yield was 74.7 t/ha. Irrigation procedure (70-80%) compared to the control according to option 3 by 31.9%, (70-90%) according to option 4 by 37.9%, (80-80%) according to option 5 by 47.3% and (80 -70%) was 33.6% higher in option 6.

Profitability in economic efficiency increased from 45.5% to 82.6% for the Saratoni variety and from 59.0% to 78.8% for the Sharkiya-2 variety. When cultivating white cabbage in the late period, the most appropriate option was the soil moisture content before irrigation (ChDNSN) of 80-80%.

“Uzbekistan Republic village of the farm development for 2020-2030 intended strategy defined tasks in 2022 population employment provide according to set given priority tasks performance provide , plant husband from the fields efficient use , population food products has been demand guaranteed provision , village economy products of prices stability supply , export size increase also in 2022 from grain and tomorrow from crops loose to the fields repeated crops own in terms of planting , agricultural engineering events transfer , demand to be done material - resources delivery to give and cultivated the harvest own in time collect get , re work , reserve accumulation and for export to be directed organize reach according to separately tasks set given.

Uzbekistan Republic President of September 15, 2017” In 2018 village economy crops reasonable placing measures _ _ and village economy products of cultivation forecast volumes about » gi PQ -3281- numbered decision of March 29 , 2018 " Uzbekistan in the Republic fruit and vegetable growing fast to develop circle addition measure - measures about » No. PF -5388- Decree and Ministers March 29 , 2019 " 2019 _ crop for village economy crops reasonable placing and product of cultivation forecast volumes on » No. 259 _ decision and this to the activity belongs to another regulatory - legal in the documents defined of duties in execution this dissertation research certain level service does _

Today's in the day the world according to the most popular vegetable from crops has been Cabbage 2.82 million. per hectare more than on the field is being cultivated . Average productivity 29.4 tons per hectare and gross harvest 82.8 mln . tons organize is [1]doing In the world moderate climate to the conditions have , long warm daily South Europe , Central and South Asia , North and South America , Australia in the regions this plant repeated in the crop basically from the seedling is cultivated . Aqbosh cabbage has been demand satisfy in order to village economy work manufacturers for this crop repeated plant as Cultivation technology improvement in this the most acceptable planting

[1]http://statinformation.ru/sel/cabbages.html

duration of plants nutrition Fertilize the field and irrigation standards identify as well goods and fruitful variety and hybrids choose regarding studies current is considered

Various in different regions soil climate conditions white cabbage Cultivation technologies improvement issues according to original in countries: N.N.Chernysheva, L.E.Soloveva, R.D.Almasker, A.S.Bolotskix, S.V.Koroleva, S.V.Sitkinov, V.V.Skorina, V.F.Pivorov, T. V.Lizgunova, V.A.Denisov, R.D.Almasker, I.D.Rajablli, N.B.Petrov, O.N.Vishnevskaya, A.F.Buxarov, L.I.Uralets, M.N. Shapturenko, V.N.Lukyanets, G.A.Kostenko, A.D.Djaxangirov, V.P.Kuzmishchev, G.F.Monaxos; respublikamizda: V.I.Zuev, O.Qodirxo'jaev, B.J.Azimov, M.X.Aramov and another many scientists by scientific studies take went and recommendations given.

Evening in term repeated in the crop white cabbage in cultivation promising their varieties _ acceptable planting scheme , duration determination , mineral fertilizers and of irrigation each one variety for the most acceptable standards work exit and to practice app reach current is considered Republic according to big in scale from grain free in the fields repeated in the crop white from cabbage high and good quality harvest get enable giver row problematic issues to be solved possibility gives

Research in 2009-2011 in Tashkent province Bull “Sarkor” district, farmer economy in the fields take went Experience of the fields soils from long ago irrigated grass - gray soils. Mechanic composition on this soil heavy semolina, unsalted. Sizot water 1.5-3.0 meters in depth located

Researches B.J.Azimov, B.B.Azimov “Methodology of conducting experiments in vegetable growing, rice growing and potato growing" (2002), "Metodika opytnogo dela v ovoshchevodstve i bakchevodstve" (1992), "Metodicheskie ukazaniya po ekologicheskomu ispytaniyu" ovoshchnyx kultur" (1987) was conducted based on the methods presented in the manuals.

The microaggregate particles of the experimental field soils were mainly composed of large dust particles (0.05-0.1 mm), which ranged from 64% in the tilled layer and 59% to 68% in the sub-tilled layer, while fine sand particles (0.1 -0.05 mm) made up of 9-11%. (ChDNSN) pre-irrigation soil moisture was measured in the first period from the planting of seedlings to the beginning of cabbage harvest, and in the second period, the 0-60 cm layer was taken from the beginning of cabbage harvest to the end of the growing season. ChDNSN irrigation procedure was carried out in the following scheme. Calculations were made in the 0-40 cm layer in the first number and in the 0-60 cm layer in the 2nd number. Options: 60-60 control; 70-70; 70-80; 70-90; 80-80 and 80-70% were used.

In the late period, the soil moisture before irrigation of white cabbage Sartoni variety ChDNSN 60-60% in the control option was 1255 grams, compared to it, it was 5.6% higher in the 70-70% irrigation regime (1325 g). Soil humidity up to 80 and 90 % when increased to control relatively leaves 10.4-17.5% more weight was Sharqiya-2 variety control option in the plant leaves weight 1005 grams and to him relative to 70-90% irrigation in the order of 7.0-23.9% heavy was From irrigation previous soil control humidity 60% compared to options 5 and 6 leaves weight is 17.9 and 14.4% higher was.

Cancer in the variety control option plant root weight is 157 grams when ChDNSN is 70-90 % root weight 7.0-21.0%; ChDNSN (80-70%) in variant and 15.3-12.7% higher it happened Sharqiya-2 variety root weight Cancer type up to 75 % less was _ East-2 control option root weight 88 grams 70-90% watering in the order of 95-111 grams or control 8.0- 26.1% more than the variant was Options 5 and 6 indicator of 60% irrigation to the procedure 19.3-17.0 % higher than was

Table 1. Watering order of cabbage morphological indicators impact, (2009-2011)

Var and ChDNSN, %	Leaves weight		Root weight		Cabbage and root between distance	
	g	to control relative to	g	to control relative to	cm	to control relative to
type of cancer						
60-60	1255	100.0	157	100.0	6.9	100.0

control						
70-70	1325	105.6	168	107.0	7.2	104.3
70-80	1385	110.4	175	111.5	7.0	101.4
70-90	1475	117.5	190	121.0	6.7	97.1
80-80	1405	112.0	181	115.3	6.9	100.0
80-70	1370	109.2	177	112.7	7.0	101.4
$\bar{X}$	1369	109.1	175	111.5	6.95	100.7
Sharqiya-2 variety						
60-60 control	1005	100.0	88	100.0	8.5	100.0
70-70	1075	107.0	95	108.0	8.6	101.2
70-80	1125	111.9	102	115.9	8.4	98.8
70-90	1245	123.9	111	126.1	8.4	98.8
80-80	1185	117.9	105	119.3	8.6	101.2
80-70	1150	114.4	103	117.0	8.6	101.2
$\bar{X}$	1131	112.5	100.7	114.4	8.5	100.0

In the plant morphological indicators It is considered a stable sign strength technological event according to change difficult Only to them physical or chemical force effect bringing somewhat change can

Aqbosh of cabbage Cancer in the variety from watering previous soil humidity (ChDNSN) was 60-60 % control option cabbage weight 2.1 kg. has been and soil humidity up to 70-90 % 2.5-3.1 kg when increased . to control compared to 19.0-47.6 % heavy was Most high indicator 80-80% irrigation (3.4 kg) to control 61.9% more than was 80-70% irrigated option cabbage weight 2.7 kg. to control compared to 28.6% higher was.

Sharqiya-2 variety control option cabbage weight was 2.2 kg and to him relatively cabbage wrap started when 70-90% watered in phase cabbage 2.5-3.1 kg or 13.6-40.9 % heavier was To control compared to options 5 and 6 cabbage 50.0 and 36.4% more in weight was Cabbage weight on this both of the variety options on this average indicators 2.8 kg. organize reached.

2009 Cancer type (60-60%) control option productivity 75.0 tons per hectare organize did , from watering previous soil 19.1% higher when humidity is 70-70% was To control compared to option 3 (70-80%) productivity by 34.0%; in option 4, 70-90% - by 47.6%; 80-80% - 60.7% in option 5 ; 80-70% -28.5% higher in option 6 was All watering of options average indicator (98.7 t/ha) to the control 31.6% more than was

Sharqiya-2 variety (ChDNSN) 60-60% control option productivity 78.5 tons per hectare organize did _ To control relatively from watering before soil humidity is 10% higher has been option productivity by 13.8%; 20% higher by 31.8% when 30% more 41.0% higher when harvest received To control relatively the most high productivity (ChDNSN) 80-80% in the 5th option 118.7 t/ha, 80-70% in the 6th option 107.1 t/ha. organize did All options productivity according to average indicator (101.3 t) to control 29.0 % more was.

In the experiment white 2 varieties of cabbage and 6 watering procedure learned for two factorial is considered Factor A (variety) and factor V - (irrigation procedure). Most less importance difference (EKMT $_{05}$) A- factor 2.2 tons and V factor accordingly 3.8 tons and of experience accuracy S $\bar{X}$% is 1.9 % did Productivity on this control and another options between difference believable was

2010 year Cancer type (60-60%) control option productivity 71.4 tons per hectare organize did _ To control relatively from watering previous soil humidity from 70% to 90 % when increased , productivity is from 19.0% to 47.6 % increased went _ (ChDNS) to the control in option 5 with 80-80% relatively productivity by 61.9%; 80-70% is 28.6% more in option 6 was _ Options average indicator (94.1 t/ha) is 31.8% higher than control was _

Table 2. Watering procedure white of cabbage cabbage weight and productivity impact (2009-2011)

ChDNS, %	Average cabbage weight		Productivity , t/ha			Average t/ha	To control relative to
	kg	to control relative to	2009	2010	2011		
type of cancer							
60-60 naz.	2.1	100.0	75.0	71.4	67.6	71.3	100.0
70-70	2.5	119.0	89.3	85.0	80.5	84.9	119.1
70-80	2.8	133.3	100.5	95.2	90.2	95.1	133.4
70-90	3.1	147.6	110.7	105.4	99.8	105.3	147.7
80-80	3.4	161.9	120.5	115.6	109.5	115.2	161.6
80-70	2.7	128.6	96.4	91.8	86.9	91.7	128.6
$\bar{X}$	2.8	110.7	98.7	94.1	89.1	93.9	131.7
Sharqiya-2 variety							
60-60 naz.	2.2	100.0	78.5	74.8	70.8	74.7	100.0
70-70	2.5	113.6	89.3	85.0	80.5	84.9	113.7
70-80	2.9	131.8	103.5	98.6	93.4	98.5	131.9
70-90	3.1	140.9	110.7	105.4	93.0	103.0	137.9
80-80	3.3	150.0	118.7	112.2	99.0	110.0	147.3
80-70	3.0	136.4	107.1	102.2	90.0	99.8	133.6
$\bar{X}$	2.8	113.3	101.3	96.4	87.8	95.1	127.3
EKMT $_{05}$ type A factor			*2.2*	*1.8*	*1.4*		
EKMT $_{05}$ irrigation V factor			*3.8*	*3.0*	*2.4*		
Experience accuracy , $S_{\bar{x}}$			*1.9*	*1.6*	*1.4*		

Sharqiya-2 variety control option productivity 74.8 tons per hectare . Soil humidity from watering before ChDNSN 70; When 80 and 90% productivity suitable 13.6 respectively ; 31.8 and 40.9% higher was _ Options 5 and 6 productivity to control compared to 50.0 and 36.6% higher was _ Options average indicator (96.4 t/ha) to the control more than 28.9% it happened 70-70% to irrigation compared to 80-80% yield is 32.0% more was _

Most less importance difference (ECMT $_{05}$) according to factor A-1.8 t/ha and factor V 3.0 t/ha and experience accuracy S $_{\bar{x}}$was -1.6% . Both in the variety too options between productivity according to the difference is higher than EKMT $_{05}$ that it was for they are convincing is considered

2011 year Cancer type control option per hectare received productivity is 67.6 t. it happened From irrigation previous soil when the humidity ChDNSN is 70-70% yield 80.5 or control 19.1% higher than the variant it happened Soil humidity 80-80% to options 1 and 2 relatively productivity is 62.0-36.0% more was _ When watering 70-90% control and to option 2 47.6-24.0 % higher than it happened Soil humidity was 70-80% and 80-70% variant harvest to control 33.4 and 28.6% higher than it happened

2011 Sharqiya -2 variety control option per hectare productivity is 70.8 t , to him compared to 70-70% by 13.7%; 39.8% higher at 80-80% was To control compared to options 3 and 4 productivity is 31.9-31.4% higher was The indicator of option 6 is 27.1% more than option 1 and 11.8% more than option 2 it happened Options average yield (87.8 t/ha) is 24.0% more than the control it happened

2011 year crop according to EKMT $_{05\ according\ to}$ factor A -1.4 t. and the V factor according to 2.4 t. of experience accuracy S $_{\bar{x}}$is 1.4% . Factors indicator according to options between addition harvest the difference believable.

of 2009-2011 average productivity Cancer in the variety control option 71.3 tons per hectare organize did From irrigation previous soil in the 2nd option , with humidity ChDNSN 70-70% productivity by 19.1% from the control ; 61.6% higher in the 80-80% option was Cabbage is

braiding when watered at 80 and 90% during the period productivity 33.4 and 47.7% more than the control , 80-70% irrigation (91.7 t/ha.) 28.6% higher was

60-60 % control in Sharqiya-2 variety option productivity is 74.7 t/ha. organize _ so , from watering in the 2nd option previous soil humidity is 10% higher when productivity is 13.7% higher it happened Watering in the 3rd option with the order (70-80%) . to control by 31.9%; (70-90%) to 37.9% in option 4; (80-80%) is higher by 47.3% in option 5 and (80-70%) by 33.6% in option 6 was

ChDNSN to 70-70% option when compared to 70-80% productivity by 16.0%; 21.3% at 70-90%; 29.6% higher at 80-80% and 17.6% higher at 80-70% was _ Soil when the humidity is 80-70 % when watered at 80-80% relative productivity is 10.2% higher was _ Experience of options average yield (95.1 t/ha) control 27.3% more than the option it happened Factors EKMT $_{05}$ on this all years factor A during type compared to (1.4-2.2 t/ha), V factor irrigation order (2.4-3.8 t/ha) to productivity effect relatively stronger it happened

Watering procedure to the yield of white cabbage and economic efficiency when studied productivity a ton of product as it increases cost Cancer 172 thousand 136.9 thousand soums up to 167.4 thousand soums , Sharqiya-2 variety 139.8 thousand soums up to soum decreased went Profitability level Cancer from 45.5 % to 82.6% in the variety, from 59.0% to 78.8% in the Sharqiya-2 variety increased went Evening in term in the cultivation of white cabbage , from irrigation previous soil humidity (ChDNSN) 80-80% option the most being a reasonable option came out.

Conclusion

Evening in term white cabbage irrigation procedures according to take went in studies Cancer 60-60 % control in the variety option 61.6% higher in the 80-80 % variant was _ 60-60 % control in Sharqiya-2 variety compared to the option (74.7 t/ha.). productivity , irrigation order (70-80%) to 31.9% in option 3; (70-90%) to 37.9% in option 4; (80-80%) is higher by 47.3% in option 5 and (80-70%) by 33.6% in option 6 was _

Economic efficiency profitability level Cancer from 45.5 % to 82.6% in the variety, from 59.0% to 78.8% in the Sharqiya-2 variety increased went _ Evening in term in the cultivation of white cabbage , from irrigation previous soil humidity (ChDNSN) 80-80% option the most was a reasonable option.

References:

1. Decision of the President of the Republic of Uzbekistan No. PQ-4575 dated 28.01.2020. The strategy for the development of agriculture of the Republic of Uzbekistan for 2020-2030 is about measures.
2. Mirziyoev Sh. No. PF-5388 "On additional measures for rapid development of fruit and vegetable growing in the Republic of Uzbekistan". Presidential Decree. - Tashkent, March 29 , 2018 .
3. Mirziyoev Sh. PQ-2460 "On measures for further development and reform of agriculture in 2016-2020". President's decision. - Tashkent, December 29, 2015.
4. Azimov B.J., Azimov B.B. Methodology of conducting experiments in vegetable growing, rice growing and potato growing // - Tashkent, UzME. 2002. – B. 9 11.
5. Belik V.F. Methodology of experimental work in agriculture and agriculture. - M.: Agropromizdat, 1992. - S. 30–45
6. Bolotskikh A.S. Schema posadki rassady kapusty. // «Sovremennye tendentsii v selektsii i semenovodstve ovoshchnyx kultur. Traditsii i perspektiv'. I Mejdunarodnaya nauchno-prakticheskaya conference (August 4-6, 2008). - Moscow, 2008. - T. 1. – S. 136.
7. Vaneyan S.S., Vishnyakova A.F. Oroshenie ovoshchnyx kultur. // J. The potato is the voice. - Moscow, 2001. - No. 3. - S. 29-30.
8. Dzhakhangirov A.D., Kuzmishev V.P. Cabbage vegetable culture. // Entsiklopedichesky slovar yunogo zemledeltsa. - M.: Pedagogy, 1983. - S. 92-94.

9. Zuev V.I., Azimov B.J. Irrigation of cabbage / Irrigation of vegetable crops. - T.: Uzbekistan, 1968. - B. 31–34
10. Azimov B.J. The mode of cultivation of white cabbage in the spring and summer periods of planting and the conditions of underground soil in Uzbekistan.: Autoref. diss. ... candy. s/x. science - Tashkent, 1968. - S. 12-18.
11. Pivovarov V. F. VNIISSOK: 13 let v sisteme Rosselkhozakademii // J.: Kartofel i ovoshchi. - Moscow, 2004. - No. 4. - S. 5–6.
12. Soloveva L.E. Fertilization, cultivation and quality of white cabbage in the Krasnoyarsk region. // V sb. "Tezisy documenta k nachuno-proizvodstvennoy conference". - Barnaul, 1982. - S. 78-80.
13. Lapasov SS, Shokirov AJ, Azimov BJ Selection of White Cabbage Variety Samples Those are Cultivated in Uzbekistan Conditions // International Journal of Science and Research (IJSR) ISSN (Online): 2319–7064. Volume 6 Issue 11, November 2017. – P. 1999–2002.
14. Chernysheva N.N. Teoreticheskie osnovy i prakticheskaya realization sledovaniy po selektsii, semenovodstvu i agrotechnologii kapusty belokochannoy v usloviyax Zapadnoy Sibiri: Autoref. diss. sugar s/x. science - Moscow, 2011. - S. 3-7.