

4		%
Other collaborators: man- years		

F Funding agencies		
	Full name or acronym	Percentage of project finance provided
1	Ministry for Land Reclamation and Water Management	100 %
2		%
3		%

G Summary of research project (see instruction on page 1)	
1	<i>Objective and technical fields:</i> water losses reduction, prevention of cover loam removal.
2	<i>Scientific and technical approach:</i> Pebble lands fertility in crease, ecological situation improvement.
3	<i>Environment characteristics:</i> Climate: average annual air temperature is 13,7 - 15 °C. Non-freezing period duration is 190-210 days. Sum of positive temperatures higher than 14 °C is 4000 -4430 °C. Relative air humidity is 41-60 %, in summer - 34 %. Pilot site locates within premountain zone with pebble cover. Permeability coefficient is 2,3 - 10 m/day. Groundwater level is 10 - 25 m, under irrigation level increases. Soil mechanical composition: silt particles - 29,9 %, sand - 23,5 %, stone part - 37,7 %; content of humus, nitrogen, phosphorus, potassium, is: 0,39, 0,035, 0,06 and 9 % respectively from soil mass, that shows low supply by nutrient elements. The least water capacity is 19,6 %. Slope is 0,01 - 0,04 along the pipelines. Maximum differences at field surface are 0.01 - 0.07 m/m.
4	<i>Parameters of Pilot Projects and Technical Solutions:</i> Irrigated area is 578 ha (500 ha net). Land use efficiency is 0,86. Main crop is cotton. Water supply to the height 95 m is performed by two pumping station with total discharge 500 l/sec through the main pipeline with length 4,6 km, to which 20 distribution pipes are connected with diameter 125 - 368 m. Irrigation tubes with diameter 70 mm and holes 6 - 10 mm are laid on depth 0,56 m into the ditches. Water comes to furrows from beneath like springs. Experiments with watering technique were carried out on 6 ha area; number of simultaneously watered furrows was 33,5. Furrow's depth was 12 - 16 cm. Its length was 60 - 400 m, slope 0,01 - 0,1. Furrows were lined by settling from water turbidity 6,27 g/l. Soil erosion was 7,5 - 10 tn/ha.
5	<i>Methodology:</i> During 3 years cotton was irrigated under soil moisture before irrigations: 60 - 60 - 60 %; 70 - 70 60 %; 80 - 80 - 60 of least water capacity according to plant germination phases: budding, blooming, germination, ripening . For acceleration of silt settling polymers K-4 and K-7 were used under slope 0,1 and area 6 ha.

During irrigation discharges to furrow and heads inside the pipelines were measured.

6. Results:

According to irrigation schedule number of irrigations 60 - 60 - 60 %; 70 - 70 - 60 %; 80 - 80 - 60 % was 5, 6, 7 respectively. Within non-growing period (6 -12 days) irrigation norms were: 800 - 1265: 1270; 2850; 1320 m³/ha;

irrigation technique elements: discharges - 0,31 - 0,54 l/sec; Furrow length - 35 - 154 m; slope 0,01 - 01; within the control fields discharges were- 0,42 - 0,57 l/sec; ;

run off was 569 - 1117 m³/ha and filtration losses were 575 - 1118 m³/ha, within the control field - 2480 - 3450 m³/ha;

nutrient stock increase was noticed;

best irrigation regime was 80 - 80 - 60 %, under which water expenses were smallest - 1970 m³/tn; within the control fields - 4680 m³ /t;

maximum settling in soil 9,2 - 13,6 t/ha was noticed under irrigation regime according to scheme 80 - 80 - 60 %;

colmatation regime allowed to create stock of humus - 1,96 t/ha, nitrogen - 270 kg/ha, phosphorus - 112 kg/ha, potassium - 43 kg/ha during 3 years;

soil wettering regularity was created under irrigation regime according to scheme 80 - 80 - 60 % at the beginning and at the end of furrow; discrete irrigation technology is more effective on steep slopes (>0,1 m/m), it increases soil wettering regularity and accumulation of humus (0,98), nitrogen (0,24) and phosphorus (0,14 % of soil mass); within the control field - 0,64, 0,12 and 0,06 % respectively;

proposed system cuts down filtration losses;

cotton yield significantly raises from 13 - 17 to 2,8 - 3,1 tn/ha;

discharge regularity is acceptable;

allowed to incert discrete water supply.

H Suggested key-words			
1	Soil erosion	4	Soil productivity
2	Irrigation technique	5	Water saving
3	Irrigation regime	6	Labour efficiency

I Most recent publications (maximum 3)						
1	Author(s): Kambarov Bakhodir					
	Title: Agricultural crops irrigation technique methods of furrow irrigation development within the premountain zone of Yzbekistan					
	Publication details:					
	Year of publication:	free access	<input checked="" type="checkbox"/>	restricted	<input type="checkbox"/>	confidential
1980						
2	Author(s):					
	Title:					
	Publication details:					
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3	Author(s):		
	Title:		
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