International Journal of Academic and Applied Research (IJAAR)
ISSN: 2643-9603
Vol. 4 Issue 12, December - 2020, Pages: 11-13

Water Treatment Networks and Receivers on Irrigated Lands

[1]Rakhimov Jasur Qadamovich, [2]Hodzhaev Nadir Khamidovich,[3]Saporboev Zakir Yusufboevich

[1,2,3]Teachers of Urgench State University, Faculty of Bioengineering and Food Safety, Department of Soil Science and agronomy.

Abstract: *Rational and efficient use of water in modern farming systems is becoming a significant issue. In this regard, drainage networks and receivers on irrigated lands play an important role. The use of water in the drainage system, the spacing of the channals requires an effective increase in the productivity of machines in the irrigated area. Actually, this demands the implementation of a lot of requirements. Scientifically based conclusions are given in solving such kind of issues in this article.*

Keywords: Collector-drainage network, reclamation, trunk collector, water collection area, water consumption, flow module, washing saline soils.

I. INTRODUCTION

The function of leakage water removal networks is to timely transfer excess water from the irrigated area and surface water to the water receivers. Through the networks of adjustment in wet leakage (primary trenches gruppasi), the flow of the trenches is sent down to the primary water removal channel – the collection channel. And the water in the collection channels is poured into the domestic farm collector and from it to the farm collector. The water in the farm is poured into the collars, which are of regional or inter-Republican importance. (The river kollektori in South Khorezm can be an example of this).

Natural cotlovines, located far from the melioration zone with a sufficiently large capacity, pass the receiver service. For example, Sarikamish (deep) receives flowing streams from the lands of Gruppa districts in the Khorezm region of Uzbekistan and the Tashuvuz region of the Republic of Turkmenistan, as well as flowing water.

The intervals of the water removal channels in the wet leakage system are changed to the structure of the adjustment networks and at the border of the area from 400 M to 600 M and even greater, provided that the machine – tractor park operating performance is high. In cases where it is necessary to densely place the water supply channels, they are closed.

The following requirements are imposed on the water removal networks in wet leakage (all procedures of collars). All these networks must be transferred from the irrigated area to the timely receiver of the water of the trench, preventing the swamp and flooding of the land in the mass throughout the year. The cost of using this network (the cost of cleaning them from grass and mud) should be minimal.

In the irrigated lands of Central Asia, southern Kazakhstan and Azerbaijan, the water consumption of collars increases on account of the release (discharge) of irrigation water. The amount of these dumping water will depend on soil – climatic and geological conditions, which vary depending on the seasons of the year, as well as on the nature of the use of fields in agriculture (irrigation of arid vegetation during the period of growth, irrigation of rice, washing of salty lands, yakhob water supply, etc.).

Each channel in the water supply network has its own water collection area, the water consumption of a certain amount of seepage is collected from the same area. To determine the same consumption, the concept of a trench flow module is introduced. The amount of water that accumulates from a unit of water collection area (from L/SEC to 1) is called a trough flow module.

The water consumption at the place of pouring (mouth part) of the water drainage channel (collector) (waterlogging also occurs on account of the leakage of surface water and the rise in groundwater (sizot) water level) is equal to the total sum of surface and trench water flows. Then the surface water in the zone of excess moisture is determined by the formula:

$$Q_{Y.Cq} = \Omega_C \cdot q_{Y.C}$$

Here: ΩC-water collection area, km^2;

$q_{Y.C}$ – upper water module l/sek 1 km^2 .

Consequently, the water consumption in the mouth of the removal channel(collector) is equal to the following amount:

$$Q_X = Q_{YC} + \Sigma Q_3,$$

Here: ΣQ_3 – the sum of water consumption of these reservoirs. The calculation of the removal channel from the gravitational point of view, that is, its elements of gravity, is determined from the beginning of the channel along the lots. Arid zone upper water QY.S-usually should be equal to zero, and when the Collector network is combined with dumps, the amount of water on top is determined depending on the amount determined by monitoring the flow of irrigation water.

In the zone of excess and unstable moisture, the water flow module consists of a variable amount. This amount,

changing in time and space, depends on the amount of precipitation, the water permeability of soil grinds, the relief of the surface of the water collection area, the slope of the area, the character of the growing layer of plants, the size and shape of the water collection area, the fact that it is crossed by the system of open channels.

II. ANALYSIS AND RESULTS

Accumulating water from the collection area, which extends for a considerable distance, flows slowly, while to the receiver all the water in the area does not accumulate in a certain period of time. Therefore the concept of SEK coefficient of deceleration has come into being. The A.What?Kostyakov believes that this coefficient can be expressed approximately by the average slope of the water collection area I and the length of the same area L:

$$\varphi = \frac{I^m}{l^n} N,$$

Here: m=0,2-0,05; n=0,4-0,65;

N – the coefficient , which depends on the amount of water accumulation during the discharge period (its amount reaches 0,4 in the period when the water decreases, and in times of blue flood-up to 4, in large water collection areas its amount decreases). The coefficient of deceleration can be less than one and equal together.

The A.N.Kostyakov showed that the maximum value of the current module can be vnicked based on the following formula:

$$q_{\max} = \frac{\sigma P}{t} \varphi,$$

Here: σ – current coefficient = (1-μ);

μ – water absorption coefficient of soil;

t – the duration of precipitation.

Flow module q is determined by the following formula:

$$q = \frac{P}{\sqrt[x]{\Omega}},$$

Here: Ω – water meeting area, ga;

x – it is obtained from special tables.

Many researchers have been working on determining the value of the parameters that determine the flow module. However, it can not be said with certainty that the formulas proposed by different authorities are universal. The most correct way is to determine the flow module in specific typical flow areas, which are fixed for some climatic zones.

The location of the removal channels in the Collector – trench networks must first be in accordance with the topographic and geographical conditions of the area to be avoided; the nature of the use of the area for economic purposes; the conditions for the entry of excess water into the swampy land (to keep the water flow flowing or to withdraw the surface water); the.

The last zvenos of the wet escape system is called the head trunk collector, and all the mites and mites in the area of intoxication collect water and carry it to the water receiver. The water level otmetka of the head collector at the bottom of the water intake should be greater than the otmetka at the moment when the water level in the receiver rises to the highest, so that it does not dim. The optimal angle of horizontal coupling of the head collector with the water receiver is 45-60. If the water level in the receiver rises above the water level in the head collector, then the reservoirs are built and the water in this reservoir is pulled out to the receiver with the help of pumps.

III. DISCUSSIONS

In the mouth of all (small and large) water removal channels in wet leakage, the water levels should gradually decrease like a ladder until adjacent to the head collector receiver from the primary adjustment trenches. Otherwise, water from large pits will not flow and will evaporate, as a result, the area will not be depleted.

The district head collector, the district, the farm and the farm collars are held along a large slope from the lowest otmetkali lands of the area where they are depleted. The correct placement of the side water treatment plants (small-order collars), which go to the head collars, and the optimal selection of their range, allows not only to ensure the good operation of the exhaust system, but also to reduce the construction cost.

V. CONCLUSION

In the improvement of the melioration of irrigated areas in agriculture, in order to prevent the decline in the sizot waters, waterlogging of lands and salinization of lands, the importance of leakage collector – drainage pits is very great. In addition, several measures are being developed to radically improve the performance of crop protection systems, namely trunk collars, farm collars and farm collars in irrigated areas. These activities are being used in all regions and districts of the Republic of Uzbekistan, and the use of trench-drainage networks and biosafety networks in regions where groundwater is very close to the Earth is of great importance.

References

1. Baraev F.A “use of Gidromelirotiv systems"., Tashkent 2008 Year, page 322.

2. Khamidov M.The X. , Shukurlaev X.I. , Mamataliev A.The B. , "Melioration of agricultural hydrotechnics". , Tashkent., Eastern publishing house 2008 year, 408-page.

3. Khaligulov Sh., Away P., Babakhaev I - "Soil Science", - N.Turnip‖,

The T.2013

4. Turapov I., Kamilov B.S., Kadirova D.The Q., Saidova M.The e., Namazov N.Ch.,

Burkhanova D.It's him. Soil physics. Tashkent. 2014

5.Rattan Lal, R., B.A.Stewart. Principles of Sustainable Soil Management in Agroecosystems. 2006. CRC Press, USA.

6. Turapov I., Kamilov B.S., Kadirova D.The Q., Saidova M.The e., Namazov N.Ch.,

Burkhanova D.It's him. Soil physics. Tashkent. 2014

7.Rattan Lal, R., B.A.Stewart. Principles of Sustainable Soil Management in Agroecosystems. 2006. CRC Press, USA.

8.Abdullaev S.The A., Prayer X.The Q., "Soil melioration"., Tashkent State Scientific Publishing House" National Encyclopedia of Uzbekistan " 2011

9. Raunova N.The B. , Sadikova S.G. , "Soil science basics". , Tashkent 2016 year.

10. Khamidov M.The X. , Shukurlaev X.I. , Shukurlaeva R. , "Regulation and protection of lands". , Tashkent 2008 year