

## Scientific works

Scientific researches carried out in the department - employees and researchers of the department have carried out and are carrying out a number of scientific and practical projects related to the field, the department mainly uses hydromelioration systems, resource-saving irrigation technologies, automation and reconstruction of water management facilities, water is carrying out its scientific activities on the improvement and development of irrigation regimes, increasing the efficiency of water use and other topics. The team of the department is currently implementing the start-up project on the topic "Single drop" number S-PM-90 announced by the Ministry of Higher Education, Science and Innovation, as the following scientific works have been carried out by the team of the department:

No	Subject of scientific research	Brief information about the goals and objectives
1	"Development of recommendations on the use of low-mineralized ditch water through the drip irrigation technology of cotton in different soil-ameliorative conditions of the Bukhara region"	Cultivation of the Bukhara-102 variety of cotton in the conditions of saline and salinity-prone soils of the Bukhara region, the technical elements of drip irrigation with low-mineralized ditch waters and river waters: the procedure for installing drip hoses, the influence of water consumption of droppers and other indicators on land reclamation and the growth and productivity of cotton, as well as the influence of quality indicators of fiber were determined.
2	Drip irrigation of the black-browed bean plant in the "Scientific-educational center"	The black-browed bean plant was planted in 2 types: double-row and single-row schemes. The results of the conducted experiments showed that in the optimal option, the number of irrigations was 23 times, and the seasonal irrigation rate was 2810 m <sup>3</sup> /ha. Vegetation period is 145 days. In production control options, 3600 m <sup>3</sup> /ha of water was consumed, compared to which 23% water saving was achieved in our experimental option. Productivity was taken to 30 s/.
3	"Development of recommendations using GIS to increase the efficiency of the inter-farm canal "Khamdam" belonging to Parket-Korasuv Irrigation Systems Department	During the study of the current state of irrigation networks, we were convinced that there are differences between the planned and actual water consumption of irrigation water. In fact, Khamdam canal was last reconstructed in 1970. Until now, in the process of operation for nearly 50 years, the canal's engineering view and design points have changed in some parts of both sides along the stream from PK559+00 to PK740+00, a total of 18.1 km. It was found that the embankments, inspection roads were in unsatisfactory condition and these indicators affect the FIK of the channel.
4	Reduction of inefficient use of mineral fertilizers using a screen made of interpolymer complex	This project aims to reduce the inefficient use of soil mineralization in cotton irrigation by means of above-ground and sub-soil screens created by using interpolymer complex, reducing the mineralization process by an average of 25.5-29.3%. scientific researches are being carried out to conduct research in the direction of increasing