STUDIES ON IRRIGATION METHODS AND SALINIZATION CONTROL IN ZONES WITH SALT ACCUMULATION SOILS

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Summary

Prevention of soil salinization in the arid and semi-arid zones is an indispensable measure for successive farm production. Basically, study on suitable irrigation methods is very important to control the salinization of soils. So, the former research in this project dealt the simulation of salt concentration changes in soil using a computer, the utilization of irrigation system with solar battery-powered pumps, and the estimation of efficiency and applicability of ceramic irrigation.

So far as we know, little work has been done in order to investigate the strainer structure of porous irrigation pipe to prevent clogging with suspended irrigation water. As soil particles absorbed with Na^+ tend to be dispersive, the clogging of strainer is a serious problem in irrigation processes. This study dealt with effective forme of strainer structure of porous irrigation pipe. Through the experiment to evaluate effect of strainer structure on discharge of suspended irrigation water, it became clear that suspended water flows more through strainer of funneled form comparing with constant radius strainer. Additionally, it was analysed on the basis of rheological of suspension flow which prevents clogging that the effective strainer structure of porous irrigation pipe is the funneled strainer in which pore radius becomes larger with the flow direction.