

ECONOMIC-ECOLOGICAL ROLE OF THE IRRIGATION IN CONDITIONS OF STEPPE ZONE OF UKRAINE

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The area of Steppe zone of Ukraine is nearby 25 million hectares that makes 40 % of all territory of Ukraine. Its role is determined by exclusively high economic resources of chernozems to what testily archeological digs of barrows of Scythian and Sarmatian times. Now steppes of Ukraine are tilled practically all and already many centuries provide with food stuffs the population of many regions of the country.

Chernozems of Steppe zone together with favorable climatic conditions is able to provide a high level of production of agricultural products. The lack of moisture of soil is limiting factor of resistant reception of heavy yields. In the Steppe zone a rainfall for a year is fluctuating within the limits of 300-450 mm. From this amount of moisture of 35-50 % it is spent for physical evaporation, surface runoff and an infiltration.

Hence, for formation of the yield, at the optimum agrotechnics, there are 200-300 mm of a moisture. If to consider, that on 1 centner grain is spent 10 mm of rainfall the possible productivity will make only 20-30 centners/hectares on the average. In the Steppe zone are observed practically annually the periods without rainfall by duration more than 2 months. At this time dry winds in May and July are especially dangerous from which yields of many crops perish. It convincingly testifies to necessity of restoration of the lost irrigated blocks and the further increase in the irrigated area for a steppe zone up to 4 million hectares.

The modern social and economic condition of national economy incontestably convinces, that the alternative to an irrigation is not present. The irrigated hectare gives agricultural production in 2-3 times more, than on the nonirrigated lands.

However the big problems in this plan are three directions: a) the further studying of ways of increase of efficiency of irrigation hectare, b) an economical expenditure of irrigation water; c) improvement of ecological conditions of locality.

All these problems can be solved successfully under condition of observance of physical and chemical properties of soil covering and biological features of cultivated crops.

First of all, the irrigation of field crops should be realized in strict conformity with settlement norms irrigating, vegetative and water supply irrigations. It will allow to establish real number of irrigations on each culture separately and to eliminate unsystematic irrigations, that will prevent occurrence of artificial saline soils. And the main thing, will allow to establish a monetary estimation of irrigated lands and economic efficiency of management of irrigating systems.

Direct and indirect expenses for carrying out of an irrigation are connected with these factors (here enter expenses for the petroleum products, the electric power, a payment of workers, a soil cultivation, on management of crops etc.). For example, in conditions of state enterprise "Vozrozhdeniye", district Melitopolsky, province Zaporozhye, the level of profitability of a winter wheat has made 71 %, Lucerne's on hay - 69 %, vegetable cultures - more than 80 % etc.

Use of irrigated lands in Steppe of Ukraine enables essentially to reduce change of yields on years. To increase the efficiency of the lands and the level of production of cultures on irrigated lands, to enter into crop rotations no conventional, economic farm crops.

Owing to smaller dependence of efficiency of crops on irrigated lands from weather conditions (coefficient the variation of productivity twice has less, than on nonirrigated lands), they carry out a role of the stabilizing factor in maintenance of production of agricultural products at a level, sufficient for maintenance of needs of the state.

Necessary condition conducting an irrigation farming is not only receptions of optimum growth and productivity of cultures, but also increase of ecological reliability which includes water-keeping modes of an irrigation, preservation of soil fertility, improvement of quality of irrigation water, effective operation of irrigated systems. Norms and methods of irrigation should coincide strictly to soil-hydrological conditions an irrigated field, with the obligatory account of features of absorption of moisture by plant.