

# Summary

The published agrarian-historical study outlines the prehistory of the irrigation work on the territory east of the river Tisza from the end of the XVIII th century to 1944. The study has the following undertitles: Survey of work in the regulation of water-ways and the use of waters; irrigation of grass plots; irrigation of fields; rice-growing; irrigation of vegetables; irrigation of orchards.

The first chapter makes acquainted with the preliminaries, work and results of the *regulation of rivers, embanking and draining*. It also outlines those efforts in water-use, which have appeared already while working on these, but especially after finishing work. Such was, e.g. the demand for a realization of irrigation and shipping.

The following undertitle summarizes the *irrigation of grass plots*. At the change of the XIXth century some 1500 hectare grass plot was prepared for sprinkling on the examined territory. Studies were carried out here, which resulted the following more important ascertainments:

- The mineral substances and mud-content of the water used for sprinkling does not cover the demand of the plants for nutritive material.
- It had been matter of discussions for years, whether the good or the bad fields should be irrigation. Then the scientists and estates decided for the irrigation of the bad fields. One of their reasons was that the more fertile soils generally gave acceptable crops without watering, and another reason was that on the sodic soils with an unfavourable character irrigation itself was considered a meliorational procedure. This opinion later proved false.

In spite of the results of research irrigation of the grass plots was practised only on 460 hectare on the examined territory during the years of World War I. Among the reasons for the decline there were the following: the neglect of manuring; soil-airlessness and flora change because of overirrigation; years rainy and with much inland waters; the economical difficulties during and after the war.

Similar to the watering of grass plots the *irrigation of fields* also developed disunitedly. There were mere sporadic and less successful attempts in this area in the years between 1900 and 1930. Between 1935 and 1941 certain reclamation could be experienced, when on about 500 hectare field crops were irrigation by sprinkling and surface irrigation. The slow development was caused by the following: the uncertainty of material- and energy-supply; the insufficiency of professional knowledge; there were no convenient species; the high prime costs and operation costs for fittings; the increasing rice-prosperity.

In the southern area of the territory east of the river Tisza they had already successfully produced *rice* on about 1300 hectare at the change of the XVIIIth

and XIXth centuries. The attempts of the years 1890—1930 then often ended with failures. Among the reasons for these there were: lacking professional knowledge; there were no convenient species of rice; the plots were overrun with weeds; the costs for production were high. The more economical production between 1930 and 1938 was based on the results of reasearch work: the acclimatation of the Dunghan-Shali species; the elaboration of fundamental principles concerning the salt-bearing of rice, the number of plants, setting and agrotechnical operations.

On the territory east of the river Tisza the *production of vegetables* for the market with irrigation was acclimated by Bulgarian gardeners immigrated to Hungary at the end of the XIXth century. With the time the Hungarians attained their methods, then became independent in their use. Their successes in growing led to the development of vegetable production on the territory east of the river Tisza in our days, too.

Between 1933 and 1941 they made attempts in the irrigation of orchards in the examined area on about 100 hectare. Though the attempts were successful, they did not give an unambiguous answer to a number of professional questions. Such were e.g.: the recommended amount of water and manure; the dates for, irrigation; the effect of irrigation on the lastingness of fruit; its content of sugar its taste and flavour.