Some Problems of Irrigation in Indiana

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Within the last few years, particularly the last two, crop irrigation has been given a great deal of attention in Indiana. According to estimates made in the spring of 1953 by county agricultural extension agents, about 300 Indiana farmers were using irrigation on more than 15,000 acres. Various reports received during the past summer indicate that the acreage had more than doubled.

There is ample evidence to indicate that proper irrigation of farm crops will materially increase yields. Irrigated pastures, for example, have more than doubled their livestock carrying capacity. Non-irrigated fields of corn have produced 40 to 45 bushels per acre whereas other fields, with similar culture but with irrigation, produced nearly three times that amount.

The prolonged droughts of the past two growing seasons have undoubtedly stimulated the stepped-up interest in irrigation, but it must be recognized that irrigation is being considered more and more on Indiana farms as a means of increasing profits in normal as well as in dry years.

Irrigation, however, is not a cure-all. It requires good farm management and the solution of some important problems to make it succeed. It will not, for example, make up for any lack of fertility, inferiority in quality of seed, or the neglect of insect control. Also water that is applied to stimulate crop growth will likewise stimulate weed growth. There are problems in the selection of proper types and sizes of pumps, and the power units to operate them; the equipment necessary to distribute the water uniformly over the fields with the minimum of labor and in sufficient amounts; the spacing of the sprinklers and the lateral lines; and in the timing, frequency of application and the amount of water used. But the most important consideration of all is the available water supply. An adequate water supply is prerequisite.

The quantities of water required for irrigation are much more than many people realize. To cover one acre of land with one inch of water requires 27,154 gallons. According to reports issued by Purdue University Agricultural Extension Service, from three to ten inches applications may be needed annually in Indiana, depending on the crop being irrigated, the type of soil, and weather conditions. A well producing at the rate of five or six gallons a minute and pumping continuously day and night for a month would supply enough water to irrigate only one acre of land during a relatively dry season.

The Indiana Department of Conservation is receiving more and more inquiries in regard to pumping water from lakes, rivers and streams for irrigation. The law is not too clear regarding water rights and new problems are sure to arise as to its rightful use.

Under Chapters 181 and 301 of the Acts of 1947 the Department has jurisdiction over the public fresh water lakes of the State and before anyone can change the shore or bed of a lake or lower the water level, he

must secure the written approval of the Department. Under this authority the Division of Water Resources is requiring that individuals or others wishing to pump water from a public fresh water lake first secure a permit to do so.

Under Chapter 60 of the Acts of 1919 the Department has jurisdiction over the navigable streams of the State. At the present time the Wabash River and White River to the junction of the East and West Forks, and the West Fork as far north as Marion County are generally considered as the only navigable streams in the State. However, some years ago the State Legislature declared a number of other streams as navigable or as public highways, and the Division of Water Resources is now compiling a map showing these streams which were declared navigable by legislative action.

Under authority of the law relating to navigable streams we are requiring a permit to remove water from the Wabash and White River, and when information is officially released regarding the navigability of other streams a permit will also be required to remove water from them.

A farmer may install an irrigation system and withdraw water from a non-navigable stream. As a riparian owner he can do this with certain limitations, since the above mentioned law does not apply to streams of this kind. There may be plenty of water to meet his needs. But what is the solution to the problem that arises when his neighbor also installs a similar system and begins to draw water from the same stream. Then another land owner upstream, seeing the benefits of the others, invests in the same sort of equipment and takes water from the stream thus depriving the others. Similar problems may arise from the use of ground water. One well in a given area may yield enough water for irrigation purposes, but when other wells are drilled and irrigation pumps begin to operate, the time may come when there will not be enough water to meet the needs of all.

Other problems are created when conditions such as these develop. The Federal Government has recently enacted a law under which individuals can borrow money to drill wells and build ponds under certain limitations for various uses, including irrigation. Since the funds are loaned they must be returned, and if other irrigation projects are started which would reduce or deprive the original borrower of his supply it might put him in a position where he would not be able to repay the loan. The agency administering this law has already asked if such loans are good risks.

These points serve to illustrate that no matter how good the results are that may be obtained from irrigation it is necessary to see that an adequate water supply is available and that its use will not interfere with others who may have a riparian right to it. They also show that before irrigation can go very far in this State, that additional laws are necessary to regulate and control the use of both surface and ground water.