

Effluent From Sewage Plants Utilized In Irrigation Plan

Water and plant nutrients from municipal sewage treatment plants, normally wasted when fed into streams or lakes, can be utilized in small or medium-sized communities by irrigating nearby farm and forest land with the chlorinated effluent or run-off, suggests Louis T. Kardos, professor of soil technology at The Pennsylvania State University.

Such a method of utilizing water and plant nutrients would require an irrigation system using 129 acres of land to take up the one million gallons of renovated waste water produced daily in a community of 10,000 persons, Dr. Kardos says.

He and his associates make this suggestion based on experiments applying 2 inches of chlorinated sewage effluent weekly to 65 acres of Penn State farm and forest land. They found that 60 to 80 percent of the renovated water trickles down to the groundwater reservoir and thence to wells, springs, and streams. The water easily meets standards for potable water as set by the U.S. Public Health Service.

Plant nutrients in sewage effluent undergo a "living filter" treatment by microbes, plants, and soil, Dr. Kardos explains. Plants take up nutrients such as phosphorus, nitrogen, and potas-

sium through the roots. Soil microbes break down organic molecules such as found in "hard" laundry detergents.

In the Penn State experiments, corn plants removed more nitrogen than was added in all the water applied during a 33-week period. The same corn, in silage form, removed 22 to 39 percent of the phosphorus applied in waste water. Soil particles known as colloids absorbed or held onto virtually all the rest of the phosphorus.

Such use of waste water is especially beneficial to crops in dry years. During four years of drought at State College, hay yields increased by 2 to 3 tons per acre where 1 or 2 inches of waste water were applied weekly. Corn yields increased by 30 to 50 bushels per acre in conventional rows 38 inches apart. Such benefits could help to pay costs of installing an irrigation system.

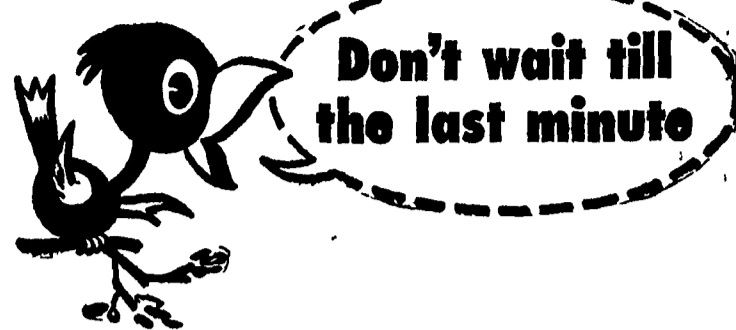
STATE GRAIN STOCKS UP 75% FROM YEAR EARLIER:

Total stocks of grain on January 1, 1968 were 75 percent more than a year earlier according to the Pennsylvania Crop Reporting Service. Stocks of all feed and food grains were higher on January 1 because of an extremely good growing season during 1967. Stocks of small grains increased moderately but the supply of corn on hand January 1 was more than double the supply a year earlier.

Stocks of grain in off-farm positions are not much higher now compared with the January 1, 1967 stocks. Most of the stocks from last season's harvest are farms.

POOR NIGHT VISION

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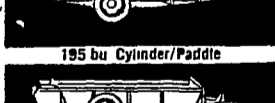
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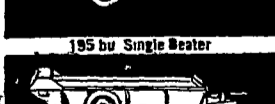
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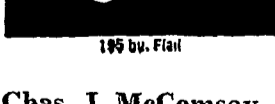
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