

depleting groundwater areas, for cotton 22 percent, for grain sorghum 16 percent, for citrus 15 percent, and for rice 13 percent.

Dickason says the effects on U.S. production of any of these crops would depend on available alternatives if farmers are eventually forced to discontinue irrigation from underground aquifers. These alternatives include growing the same crop under dryland conditions, switching to another crop that can be grown with available natural moisture, going out of crop production, or, in rare cases, irrigating from surface water sources such as rivers and reservoirs.

The "Ultimate" System

"Efficiency relates to the amount of water that must be applied to the field to satisfy the water requirements of crops," Sloggett says. "Application efficiency of irrigation systems can range from 40 percent to more than 90 percent. If the 'ultimate' system were available, an irrigator would have to pump and apply only one acre-inch of water for every acre-inch needed to supply the crop requirement."

Of course, evaporation, runoff,

Deep Wells and Sharply Declining Water Levels Are Common in the 11 States with Large Areas of Groundwater Irrigation

	Pumping depths ¹	Annual rates of decline ¹
	Feet	
Arizona	75-535	2 0-3 0
Arkansas	50-120	0 5-1 3
California	100-260	0 5-3 5
Colorado	175-275	2 0
Florida	250	2 5
Idaho	200-375	1 1-5 0
Kansas	190-275	1 0-4 0
Nebraska	25 250	0 5-2 0
New Mexico	100-200	1 0-2 5
Oklahoma	100-275	1 0-2 5
Texas	50 300	1 0-4 0

¹These figures show the range of average pumping depths and rates of decline in different parts of each state. The overall state average and the unaveraged lows and highs may be outside the indicated ranges.

seepage, and percolation of irrigation water below a crop's root zone all work against achieving the "ultimate" system. Nevertheless, small differences in irrigation efficiency levels can involve huge quantities of water—especially on farms with thousands of irrigated acres.

The Affordability Factor

"Capital costs may also dictate the choice of irrigation system,"

says Sloggett. Sprinkler or improved gravity systems generally require much larger investments than an unimproved gravity system.

"But as water levels and well

yields decline, irrigation water costs are rising, making the more technically efficient sprinkler systems increasingly appealing to the irrigator," he says. Improved efficiency can mean—and make—

the difference between continuing with groundwater irrigation or halting it completely.

"As well yields gradually decline," Sloggett says, "irrigation in more areas will begin to fall off as well."

Dugan Heads State Farm Dealers

Mr. Lloyd R. "Sonny" Dugan was recently elected President of the PA Farm and Power Equipment Dealers Association at their 73rd Annual Management Conference and Trade Show in Lancaster.

Lloyd R. Dugan was born in Galeton, PA. The only son of Lloyd L. and Ruth M. Dugan. "Sonny" as he is better known attended school in Galeton, PA. After school, he worked for his father on the 400 acre cash crop farming operation. The Dugans also ran a logging, trucking and bulldozing business. In the spring of 1954, Sonny got his first feel of the machinery business when his father signed a John Deere machinery franchise and put it in a newly built industrial building off Route 144, five miles south of Galeton. Sonny married

the former Patricia Ann Cimino of Galeton in May 1957. They have one son, Jeffrey L. Dugan. In the spring of 1963, the Dugans machinery business moved to Route 49 near Ulysses, PA. Llybd Sr. had bought out the John Deere business of E.E. Tucker who was retiring due to age. A new 8,000 sq. ft. steel building was built to be able to serve Potter County which was the Dugans newly enlarged territory.

In 1967, the business became Lloyd L. Dugan and Son, Inc. with Sonny as vice-president. When Lloyd Sr. formally retired in 1979, Sonny became president.

In July 1981, a disastrous fire struck the dealership. Working with plywood walls and a makeshift plastic covered roof, the dealership lost only a few weeks

service to its customers. A new 11,000 sq. ft. building was built over and around the temporary work area. The new facility had its open house on January 9, 1982.

In the spring of 1984, a consumer products branch store was opened in Wellsville, NY 20 miles north of the main facility. This branch has been a grand success winning many travel and sales awards from the John Deere Co. This branch is managed by Jeffrey Lloyd Dugan making the Dugan dealership a 3 generation organization.

Lloyd "Sonny" Dugan is a director of First Citizens National Bank of Ulysses, PA, chairman of the Potter County Industrial Development Authority, a director of Potter County Recreation, Inc., a member of St. Bibianas parish and parish council, a 3rd. degree member of the Knights of Columbus Council 693, an advisory board member of Alfred University and Smethport Vocational-Technical School, president of 'i AM felicia Creations, Inc.' a newly formed doll manufacturing company and a partner with his father in Dugan and Son Land Sales of Galeton and Ulysses, a land development and sales company selling land in Potter and Tioga Counties. One of the land sales company's most noteworthy accomplishments was the building and ownership of Potter County's largest lake.

Mr. Dugan will represent over 500 farm equipment dealers members throughout PA during his year long duties.

The association has represented farm equipment dealers since 1913. The state offices are located in Harrisburg.

Global Grain Trade

Not Price Responsive

More U.S. corn now goes for sweeteners in soft drinks, conversion to starch or alcohol and for other food and industrial products than is being sold in foreign markets. Corn refiners say they are now able to produce a crystalline product which they see as a potential substitute for dry sugar, but it must be stored at low humidity and shipped in bulk under controlled conditions.

Government economists now predict that 1.15 billion bushels of corn will be used in food and industrial products this year compared to 1,125 million bushels that will be exported in 1966-67. That is the first time since 1960-61 that food and industrial uses will consume more corn than sales abroad. At that time exports totaled only 292 million bushels and 311 million went for food and industrial uses domestically.

Corn refiners dream of the day when they can produce a crystalline product to compete equally with dry sugar, now several years away. But they learned a hard lesson in the early 1970s by building plants in Europe only to have European countries impose production quotas the following year, said Raymond Stanhope, vice president of A.E. Staley Co. The industry would benefit if restrictions can be eased in the forthcoming round of General Agreement on Tariffs and Trade talks getting underway in Switzerland, Stanhope said.

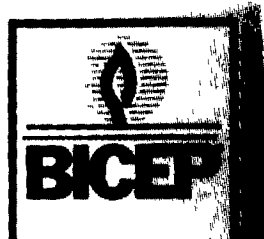
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