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Irrigation of Soybeans and Cotton on Level-Basin Fields

Land owners in Southeastern states have been grading fields to low (0.2%) slope to improve drainage and increase machine and irrigation water use efficiency. Some land owners are grading fields to zero slope (level-basin) for use in growing rice. Comparison of water use for irrigating rice indicates significant water savings on level basin fields compared with other rice field designs. Louisiana growers have used level-basins for rice, crawfish and ducks. Growers would like to have the option of growing soybeans or cotton on level-basin fields when market prices, input costs or weed conditions support these crops in preference to rice. One of the advantages of level basins for rice, crawfish or ducks is the low pump flow rate pump capacity required to manage the system. Flood irrigation of soybeans and cotton requires getting the water on the field and draining it quickly to avoid damage to the crop. Low pump capacity requires more time to irrigate, thus leaving soybean and cotton subject to injury from the root zone being saturated too long. Poly tubing, with or without gates, and varied spacing of spin ditches has been used in an attempt to spread the water out over the field more quickly with widely varying results. Filling supply ditches prior to irrigating, spacing spin ditches closer(100'), and planting multiple drills on raised (4"-6") beds have improved results.

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