

Irrigation Systems and Cost Estimates for Row Crop Production in Florida

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Irrigation of row crops in north and northwest Florida is becoming increasingly popular. Because of recent droughts and the need by farmers to produce more on less land, the application of 6 to 12 inches of water during low rainfall spring months is a common practice. Major crops now being irrigated are: corn, vegetables, pasture, tobacco, and soybeans.

Irrigation systems commonly used for row crops in Florida are center pivots (medium pressure and low pressure) and traveling guns (cable tow and hard hose units). These are all self-propelled sprinkler systems, and they are very popular for row crop production because of their low labor requirements.

Irrigation Cost Estimates

Under low rainfall conditions, irrigation operating costs plus fixed costs can be a significant portion of total production costs for field and vegetable crops in north and northwest Florida. Even for average rainfall years, operating (variable) costs alone for traveling gun systems vary from \$40 to \$43 per acre. Center pivot operating costs vary from \$17 to \$21 per acre (Table 1 and Figures 1-2). Energy costs alone account for about 75 percent of operating costs for center pivots and up to 87 percent for traveling guns.

To determine irrigation costs for typical situations, four row crop irrigation systems were designed in 1981-82. Systems were competitively bid by installers and completely installed. They included (1) center pivot, low pressure (LP), (2) center pivot, medium pressure (MP), (3) traveling gun, cable tow (CT), and (4) traveling gun, hard hose (HH), for 138, 138, 100 and 100 acres, respectively. The acreages given were used because they are typical economical system sizes. Systems designed for fewer acres would be more expensive because of the economics of scale.

Irrigation cost estimates presented here were based on synthesized budgets, reflecting present fixed costs of individual com-

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