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FARM SUITE

IRRIGATOR PRO

for

Peanuts, Corn, & Cotton

An Irrigation Management System

USDA-ARS
NATIONAL PEANUT RESEARCH LABORATORY
Dawson, GA

Irrigator Pro is an expert system designed to provide irrigation scheduling recommendations based on scientific data resulting in conservation minded irrigation management.

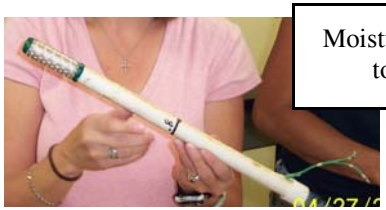
Irrigator Pro for Peanuts

This computerized expert system is designed to manage peanut irrigation and pest management decisions. The objective is to improve economic returns for irrigated peanut production and reduce risk associated with aflatoxin, foreign material, immaturity, off-flavor, chemical residues, and negative environmental impact. Irrigation recommendations are based upon over 20 years of scientific research data and information. To begin, enter field data including plant date, variety planted, previous crop, soil type, and irrigation capacity. Place a digital minimum/maximum soil thermometer in the field, in the row, a few weeks after the crop has emerged. Also place a rain gauge in this same area as well as outside the pivot to record rainfall. Mark the sensors in the field with flags because they will be difficult to find later in the season. Begin by taking soil temperature readings a couple of times per week and ask for the recommendation which will advise if and how much to irrigate or when to check soil temperatures again. Generally, irrigation recommendations are made to maintain soil temperatures and water in the optimum ranges. The program generates graphs showing your data in relation to optimum and minimum zones helping you diagnose problems that may occur. Irrigator Pro for peanuts has been extensively evaluated and validated in replicated research plots as well as commercial trials with cooperating farmers. Yield increases of over 300 pounds per acre and 2 percentage point increases in Sound Mature Kernels and Sound Splits have been demonstrated.

Irrigator Pro for Cotton and Corn

The success of Irrigator Pro for peanuts created interest from other groups and a collaborative effort between the USDA ARS National Peanut Research Laboratory, GA Cotton Commission, Craig Bednarz with the University of Georgia, and the Peanut Foundation was established to create comparable models for cotton and corn. Recommendations are based upon the physiological needs of the plant during different stages of growth and development. These models differ from the peanut model by requiring the use of soil moisture sensors. Follow manufacturers preparation and installation recommendations that accompany your sensors, test them, then install at depths of 8", 16", and 24", in the row, after the crop has emerged. Record rainfall events from the day of planting until sensors are installed and readings are entered. Data specific to each field is required such as soil type and irrigation capacity. To begin entering data, simply enter farm information, then individual fields, and the data for those fields as it occurs. When sensor readings are entered, recommendations can be retrieved advising if and/or when to irrigate, an amount, and when to check the sensors again. A comment section is also included for any information that you may want to reference later in the season. The photos show preparation and installation of the soil moisture sensors.

Soil moisture sensor and digital reader



Moisture sensor attached to thin wall pvc

Applying silicone around wire leads

Making the hole with 1" auger

Installing sensor

Taking a reading in the field