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Peanut Irrigation Management Decision Aid Using Climate-based Information

Water demand for irrigation in the Southeast is expected to increase in the future. There is a need to combine climate information and risk analysis for peanut irrigation in the southeastern US. This paper describes a peanut irrigation decision support system which was developed to assist growers and to provide information on the levels of profitability of peanut production with and without irrigation under different climate forecasts. The system provides probability distributions of the seasonal cost to irrigate peanuts and amount of water required. Results of a case study are presented for the Georgia Green variety grown in Miller County, Georgia. Yields were simulated for both irrigated and non-irrigated peanuts using the CSM-CROPGRO-Peanut model. The probability of obtaining a high net return under irrigated conditions increased when planting dates were delayed for El Niño years. Dryland peanut production was profitable in a La Niña year if peanuts were planted between mid-April and early May. The prototype irrigation decision support system will be deployed as a web-based tool on the AgClimate web site (www.AgClimate.org) after additional testing and evaluation.

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