# THE WEB-BASED CROP-WEATHER PROGRAM FOR SOUTH TEXAS: ACCESS TO WEATHER DATA AND CROP MANAGEMENT TOOLS

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## Abstract

The Crop-Weather Program for South Texas (CWP) is a user-friendly yet powerful Internet-based decision support system whose development began in mid 1999 to provide farmers of the Coastal Plains of Texas with an innovative method to manage their cotton crops and deal with the economic risk and uncertainty imposed by climate variability and complex soil-crop-pest-environment interactions. This program uses state-of-the-art dynamic HTML programming language and constitutes an entirely new and revolutionary cutting-edge approach for technology transfer. CWP, hosted by the web site http://cwp.tamu.edu, provides easy access to historical and current weather data and a suite of powerful numerical simulation tools for field-specific calculations of soil water balance, crop growth and development, and crop water use in cotton. CWP established a network of 23 weather stations, 21 of them located in 12 counties of the Coastal Plains of Texas, and uses a completely automated smart system to retrieve, upload, inspect, and update weather databases. Access to weather data is easy. Just select a weather station using any of the navigation paths provided in the home page and this will take the user to the page where he can search today's hourly data or select any date range to search for stored hourly or daily records of air temperature and humidity, solar radiation, wind speed and direction, soil temperature, and rainfall. Data is presented in an easy-to-read table, and is downloadable. Registered users can access the suite of numerical simulation tools by just login with user name and password. Once in the applications panel (suite of tools), the user chooses a field profile from the list of previously created profiles (or creates a new one) to run any of the tools available. Field profiles hold basic information about a particular field or crop management unit. Field profile information is entered only once and stored in the user's database. Currently, there are eight numerical simulation tools available to registered users (PET and Rainfall, Soil Temperature, Soil Moisture, Plant Development, Pest Risk, Defoliation/Desiccation, Crop Water Use, and Irrigation Monitor, and more are being developed. The modular and scalable architectural design used in the CWP web site facilitates the addition of a wide variety of tools to assist the decision making process in crop management and opens the opportunity to multi-disciplinary development.