United States Department of Agriculture

Agricultural Research Service

National Soil Dynamics Laboratory

Conservation Systems Research

Research Project Description No. 34

December 2003

Contact us:

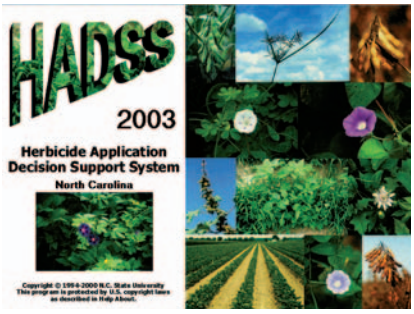
USDA-ARS-NSDL
411 S. Donahue Dr.
Auburn, AL 36832
334-844-4741

http://msa.ars.usda.gov/al/auburn/nsdl/csr

Conservation Systems Research

HADSS (Herbicide Application Decision Support System) Development and Distribution in Alabama

RESEARCH PROJECT DESCRIPTION NO. 34



Herbicide Application Decision Support System

Researchers

A.J. Price (Weed Scientist), M.G. Patterson (Weed Scientist-Auburn University), G.G. Wilkerson (Professor-N.C. State University)

The Challenge

Producers of row crops in the Southern Region have a difficult task when making decisions about weed management. Complex economics are involved in choosing crop varieties and herbicide systems due to the availability of both conventional and herbicide-resistant varieties in corn, cotton, and soybean. Herbicide-resistant varieties typically include technology fees that must be factored into the economic plan. Producers choose varieties and herbicide systems based upon both yield potential as well as ease of weed management. Producers choose a cropping/herbicide system that allows control of their most troublesome weeds. Producers must also know which weeds impact yield more that others so that highly competitive weeds

can be targeted for control. Also, there are few herbicides that provide similar weed control within a cropping system. Not only do producers have to know what weed(s) a particular herbicide or tank mix of herbicides will control, herbicide efficacy usually changes with weed size and vigor of growth. Additionally, herbicide labels can contain complex application restrictions pertaining to crop growth stage and soil type. Less money would be spent on ineffective herbicide treatments. Reducing non-effective herbicide applications would also reduce environmental risks. The challenge is to distribute to the public an Alabama version of HADSS. Producers using HADSS could make more economically sound variety selection (herbicide resistant vs. conventional) and weed management decisions.

The Experiment

An economic-based herbicide decision aid has been under development for corn, cotton, soybean, and peanut by ten southern states including Alabama; however, the program is only currently available in North Carolina, South Carolina, Georgia, Mississippi, and Oklahoma (www.webhadss.ncsu.edu). Researchers at Auburn University have made some progress in developing an Alabama version of HADSS for use in cotton. Further development will include completing an Alabama version of HADSS, field validation in reduced tillage systems, and distribution of the program to producers throughout Alabama. Validation will include comparing recommendation from the completed decision aid to typical grower practices in field trials. Alabama HADSS will be distributed free through the web as well free on mini-CDs given away at field days and training sessions at extension offices.