



Texas Precision Agriculture

The Texas A&M University System – Agriculture Program

Annual Reports – 2000

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Primary Location: Bush Farm, Bushland, TX
North Plains Research Field, Etter, TX

Project Title: Automatic Spot Sprayer Application in Row Crops

Reporting Period: September 1, 1999 to August 31, 2000

Objectives:

1. Evaluate the capabilities and economics of an automatic spot sprayer application in row crops.
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A. Summary of Progress:

The Patchen *WeedSeeker* sprayer incorporates new technology that only applies herbicide to weeds growing in-between crop rows. The sprayer uses advanced optics to sense the presence of weeds. When a weed enters the sight of its sensor unit, a signal is directed to the spray nozzle and a precise amount of herbicide is delivered. Studies in sorghum were established at Bushland, Etter and the West Texas Nance Ranch.

The effectiveness of the *WeedSeeker* sprayer was compared to traditional broadcast applications of pre and post emergence treatments. Roundup was used in the sprayer. When the sprayer being tested was used alone too many weeds were left in a 12-inch band around the sorghum. When the sprayer application was combined with a pre-emergence band treatment over the sorghum row overall weed control was greatly

improved. Much less herbicide was used with the *WeedSeeker* sprayer compared to the broadcast pre or post treatments.

B. Education/technology transfer:

The *WeedSeeker* Sprayer was demonstrated at the following field days:

Etter Station Field Day: Attendance 150
Sorghum PROFIT Advisory Board: Attendance 25
Randall Co. Crops Tour: Attendance 85

C. Milestones achieved: N/A

D. Publications:

Scott, D.R., B.W. Bean, and M. Rowland. 2001. Evaluation of Weed Control Methods in Grain Sorghum in the Texas Panhandle. Submitted: Proc. Southern Weed Sci. Soc.

E. Precision agriculture proposals: PROFIT State Initiative – \$6000

F. Precision agriculture meetings attended/papers (posters) presented:

West Texas A&M University Graduate Student Paper Contest

G. Other Developments:

A graduate student from West Texas A&M University is working on this particular project. It is possible that the student will no longer be on the project in 2001. It is hoped that another student will be found to continue the project. If not, the project will continue under the direction of Extension assistant, Matt Rowland.