

INTRODUCTION

Funds provided by the Tennessee Soybean Promotion Board have made it possible to continue testing for disease and nematode control strategies. Some accomplishments of the major projects include the following examples:

Disease ratings for Frogeye Leaf Spot, Sudden Death Syndrome (SDS) and Stem Canker:

Each year soybean producers are provided a new list of soybean varieties with disease ratings for the most damaging diseases and nematodes. This has been a tremendous, no-cost aid in reducing diseases and increasing yields. Producers have UT results either in hard copy or on the internet (utcrops.com). Soybean breeders and commercial seed producers are using this data to bring more disease-resistant varieties to the soybean farmer. This year 495 varieties were tested in disease nurseries, many in three locations.

Foliar fungicide testing with varieties: Each year, 40 commercially available varieties are sprayed with a foliar fungicide to determine the profitability of spraying a foliar fungicide. As a result, producers are able to select varieties that respond to a foliar fungicide. The Weakley Co. Extension personnel documented the spraying of fungicides on more than 25,000 acres with an average increase of 6 bu/A in 2003. This gave an additional 150,000 bushels, and at \$7.50/bu., this amounts to \$1,125,000. At a cost of \$15/A for the fungicide and application, the net profit is still \$750,000. Soybean producers in Weakley Co. started spraying fungicides in 1992 on about 300 acres. This practice has grown steadily to include at least a third of all soybean acreage in the county.

Testing of foliar fungicides for effectiveness in controlling Frogeye Leaf Spot. In 2003, ten different treatments of various applications and rates of foliar fungicides were tested at the Milan Experiment Station against Frogeye Leaf Spot. The yield was increased by 19 bushels per acre with the best treatment. The cost was less than \$15 per acre. This is a clear profit of \$100-150 per acre depending on the price of soybeans.

Cyst nematode survey and sampling program: Approximately 115,000 acres have been sampled by the GPS nematode units funded by the TSPB since this program started in 1997. Nearly half of those acres have been identified as positive for cyst nematodes. With this information, producers are better able to select varieties with resistance to their race of SCN and reduce the damage caused by this pest. The discovery of new races (race 2 & 5) of SCN existing in large areas of the state led specialists to recommend new resistant varieties. Some producers report an increase in yields of as much as 15 bushels per acre. This program has encouraged producers to do more SCN sampling on their own.

In general: Due to the grants awarded by the TSPB for disease and nematode projects, producers have become more aware of the damage from diseases and nematodes. They are using information generated from disease ratings, fungicide trials and variety testing to reduce diseases and increase profits. One soybean producer in Dyer Co. has documented an average increase of 15 bu/A by using disease- and nematode-resistant varieties along with the use of foliar fungicides. The seed industry also relies on this information to make major marketing decisions. Breeders use this information to evaluate their new selections before releasing them for production. Use of this information has had a positive, far-reaching effect on soybean production in Tennessee by making the production of soybeans more profitable.