## 1999 TESTING FOR RENIFORM NEMATODE RESISTANCE IN 226 SELECTD SOYBEAN CULTIVARS FOR ROTATION IN RENIFORM INFESTED COTTON FIELDS R. T. Robbins, L. Rakes, L. Jackson and D. G. Dombek Department of Plant Pathology University of Arkansas Fayetteville, AR

## **Abstract**

The object of this study was to find soybean cultivars with resistance to reniform nematode (RN) Rotylenchulus reniformis available for rotation with cotton in RN infested cotton fields. All cultivars and breeding lines, new for 1999, included in the Arkansas and Mississippi soybean variety testing programs and cultivars submitted by extension nematologists in Louisiana and Alabama were tested in pots in the greenhouse for resistance to RN. Resistance was measured as a ratio of reproduction of RN on the selected cultivar to that of the standard RN-resistant cultivar "Forrest". Resistant varieties Forrest and Hartwig, the susceptible variety Braxton, and inoculated fallow soil were included as checks for the 226 cultivars and breeding lines. All entries were replicated 5 times in clay pots 10cm diam. A single soybean plant in the dicotyledon stage was planted in fine loamy sand soil in each pot and 3450 vermiform reniform nematodes were added per pot including the fallow infested soil checks. Plants were inoculated on 29 June 1999 and harvested one replication per week starting 30 August 1999. RN was extracted from both the soil and roots and the number per pot determined. Of the 226 total lines tested 53 proved to be as resistant as Forrest (P < 0.05) when statistically analyzed using  $\log_{10} (x + 1)$ . Only Agripro AP 4501 RR in the relative maturity group of  $\leq$  4.5, 25 lines in the relative maturity group  $\ge 4.5$  and < 5.0, 9 lines  $\ge 5.0$  and < 5.5 were as resistant, 8 lines  $\geq 5.5$  and < 6.0, and 11 lines  $\geq$  6.0 were as resistant as the resistant check Forrest. This data shows that several soybean varieties tested in 1999 as well as those found resistant in 1998, may be useful in reducing RN numbers when used in rotation with cotton.

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