

A Herbicide Demonstration Using New Herbicide Resistant Soybean Varieties

RFR-A1973

Paul Kassel, extension field agronomist
Terry Tuttle, farm superintendent

Introduction

Soybean varieties tolerant to multiple herbicides are on the market in different versions. Roundup Ready Xtend varieties are available and are tolerant to glyphosate and dicamba. Enlist E3 soybean varieties also are available and are tolerant to glyphosate; 2,4-D; and glufosinate.

Dicamba; 2,4-D; and glufosinate herbicides offer new sites of action for weed control in soybean.

This study compared the weed control performance of glyphosate (Roundup PowerMAX), dicamba (Engenia), glufosinate (Liberty), 2,4-D (Enlist One), and 2,4-D and glyphosate (Enlist Duo). The primary weed evaluated was common waterhemp.

Materials and Methods

The research area was soybean in 2018. The research area was tilled with a field finisher. A section of the research area was planted to Pioneer variety P24A99X, and the remaining area was planted to Pioneer variety 22T86E. The seeding rate of each variety was 140,000 seeds/acre.

Pioneer variety P24A99X is tolerant to glyphosate and dicamba herbicides. Pioneer variety P22T86E is tolerant to glyphosate; 2,4-D; and glufosinate herbicides.

Waterhemp seed was applied to the research area June 7, 2019. The seed was from a waterhemp population known to be tolerant to glyphosate applications.

Herbicide treatments were applied July 3, 2019, with a CO2 backpack sprayer, which delivered 20 gallons/acre at 40 psi with 8002 flat fan nozzles. Eleven treatments with one untreated check and three replications were included. The waterhemp in this study was 6 inches in height at the treatment date.

Results and Discussion

Applications of glyphosate, dicamba, and glufosinate were more than 90 percent effective in the control of waterhemp in this study.

This study demonstrates that Engenia, Enlist One, Enlist Duo, and Liberty herbicides can effectively control waterhemp populations tolerant to glyphosate herbicides.