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Weed Management in Corn

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Weed Management in Corn

Abstract

The purpose of this study was to evaluate preemergence and postemergence applied herbicides for crop phytotoxicity and weed control in corn.

Keywords

Agronomy

Disciplines

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Weed Management in Corn

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Introduction

The purpose of this study was to evaluate preemergence and postemergence applied herbicides for crop phytotoxicity and weed control in corn.

Materials and Methods

The crop rotation was corn following soybean. The seedbed was prepared in the spring with a field cultivator. Crop residue was 10% at planting. A randomized complete block design with three replications was used. Herbicides were applied in 20 gallons of water/acre. Visual estimates of crop injury and percentage weed control were made during the growing season. These observations are compared with an untreated control and are made on a zero to 100% rating scale (0% = no control or injury; 100% = complete control or crop kill).

‘Dekalb hybrid DKC 53-32’ corn was planted at 33,674 seeds/acre in 30-inch rows on May 14, and preemergence (PRE) treatments followed. Early postemergence (EPOST) and postemergence (POST) treatments were applied on June 11 and 22, respectively. Corn growth stage was V4 and 5 inches tall on June 11, whereas on June 22 corn was V6 and 13 inches tall. Weeds had cotyledon to numerous leaves and were 0.5 to 4 inches tall on June 20. On June 22 weeds had cotyledon to numerous leaves and were up to 7 inches tall. Weed species occurring in this study included: giant foxtail, velvetleaf, common waterhemp, common lambsquarters, and Pennsylvania smartweed

with an average population of 5, 1, 1, 1, and 1 plant/ft², respectively.

Results and Discussion

Summarized in Tables 1, 2, and 3 are the data on percentage corn injury and weed control as affected by herbicide treatment. No crop injury was observed from soil applied preemergence (PRE) treatments prior to early postemergence (EPOST) and postemergence (POST) application timings (data not shown). Excellent giant foxtail and broadleaf weed control was noted on June 7 from PRE applied Epic and Balance Pro (data not shown). Other PRE treatments achieved excellent giant foxtail control. Broadleaf weed control with these PRE treatments was dependent upon the selectivity of the herbicide. Nearly all provided excellent control of the light infestation of Pennsylvania smartweed, poor to fair velvetleaf control, and fair to good common lambsquarters control.

Significant corn injury resulting from EPOST and POST applied treatments was observed on June 24. On July 11, injury persisted with several EPOST and POST treatments. Excellent broad-spectrum weed control was observed on July 11 and August 23 from EPOST and POST applied treatments following a PRE and EPOST treatments not following a PRE. POST applied Steadfast plus Atrazine that did not follow a PRE treatment provided fair giant foxtail control and poor velvetleaf control on August 23. All treatments resulted in significantly higher corn yields than the untreated control, except the POST applied Steadfast plus Atrazine treatment. Yields ranged from 177 to 222 bushels/acre, with significant differences determined between several treatments.