Glufosinate-ammonium for selective weed control in herbicide tolerant sugarbeets. Robert G. Wilson, University of Nebraska, 4502 Avenue I, Scottsbluff, NE 69361.

Abstract

Weeds are one of the most important pests limiting sugarbeet production. The objective of this experiment was to determine the efficacy of glufosinate-ammonium (Liberty) in selectively controlling weeds growing with sugarbeets. The experimental design was a randomized complete block with three replications. Glufosinate-ammonium tolerant sugarbeets were planted on April 24. The first herbicide application occurred when sugarbeets were in the cotyledon to two true-leaf stage of growth. Herbicide treatments were also applied when the crop was in the four, six, and eight true-leaf stages of growth. Herbicides were applied with water at 16.6 gallons per acre (155 L/ha). At later growth stages, sugarbeet leaves were chloric in color for several days following treatment with glufosinate-ammonium. The injury was temporary and plants quickly recovered. A single application of glufosinate-ammonium at 0.45 lb/acre (0.5 kg/ha) controlled 84% of the weed population. Two applications of glufosinate-ammonium at 0.36 lb/acre were required to control 98% of weed population. In contrast, three applications of desmedipham plus phenmedipham plus ethofumesate (Betamix Progress) controlled 84% of the weed population. Sugarbeet root yield and sucrose percent of sugarbeets treated with glufosinate-ammonium were similar to plants treated with desmedipham plus phenmedipham plus ethofumesate.