

Weed control in roundup ready and liberty link sugarbeets. MESBAH, ABDEL O.¹, and STEPHEN D. MILLER², ¹Northwest Research and Extension Center, 747 Road 9, Powell, WY 82435, and ²Dept. of Plant Sciences, P.O. Box 3354, University of Wyoming, Laramie, WY 82071.

ABSTRACT

Field experiments were conducted in 1997 and 1998 at two locations; the Powell and Torrington Research and Extension Centers, Wyoming, to evaluate the time and number of applications as well as the rate needed to control weeds effectively in roundup ready and liberty link sugarbeets. Roundup ready (var. Empire RR) and Liberty link (var. Beta 8757 LL) were planted in 22" rows in a clay loam soil with 1.3% OM at Powell and in 30" rows in a sandy loam soil with 1.2% OM at Torrington. Plots were 10 by 30ft. with three replications arranged in a randomized complete block design. Liberty link sugarbeet trials consisted of two rates of glufosinate (0.27 with or without ammonium sulfate and 0.36 lb, ai/ac.) and three-way application starting at cotyledon, 2 leaf or 4 leaf stage with one or two week interval. Roundup ready trials consisted of one rate 0.75 lb, ai/ac. and two or three way applications starting at cotyledon, 2 leaf or 4 leaf stage with two or three week interval. Kochia (*Kochia scoparia* L. Schrad), common lambsquarters (*Chenopodium album* L.), redroot pigweed (*Amaranthus retroflexus* L.), wild mustard (*Brassica kaber* DC. L.C. Wheeler), hairy nightshade (*Solanum sarrachoides* Sendtner) and green foxtail (*Setaria viridis* L. Beauv.) Infestations were moderate (20 to 25 plants/yard²) and uniform throughout the experimental sites.

Weed control in liberty link sugarbeets was excellent (90 to 100%) when glufosinate was applied at 2 or 4 leaf stage. Glufosinate at the rate of 0.36 lb ai/A was more effective in controlling weeds than the 0.27 lb ai/A. However, ammonium sulfate at 17lb/100 gal enhanced weed control by 5 to 10%. Weed control with the three way application of glyphosate in roundup ready sugarbeets was excellent (97 to 100%). Similar results were achieved with the two way application when glyphosate was applied at the 2 or 4 leaf stage with three week interval (96 to 100%).