

ALFORD, CRAIG M.*, AND STEPHEN D. MILLER, Department of Plant Sciences, University of Wyoming, Laramie, WY 82071. **Comparison of desmedipham/phenmedipham formulations in sugarbeets.**

ABSTRACT

Oil-based formulations of Betamix (AE Bo 38584) and Progress (AE Bo 49913) have been developed as a possible replacement for current formulations of Betamix (desmedipham/phenmedipham) and Progress (desmedipham/phenmedipham/ethofumasate). The new formulations have been developed because of concerns with continuing registration of the current formulations of Betamix, Progress and the emulsifiers that they contain. Additionally these new formulations may eliminate the need to add methylated seed oils (MSO) to the tank mix in a micro-rate herbicide program.

A field study was conducted at the Research and Extension Center, Torrington; Wyoming to compare the effectiveness of the oil based formulations to the conventional formulations when applied as the standard or micro-rate treatments. Plots were established in a RCB design with 3 replicates. Beta 4546 LL sugarbeets were planted to stand (68,000 seed/A) on April 18, 2000. Applications were initiated at the cotyledon stage and continued 7 and 14 days later. All treatments were applied with a CO₂ pressurized knapsack sprayer delivering 20 gpa at 40 psi.

Initial stands were reduced 15 to 26% in all herbicide treatments. Weed control was similar between the standard and oil-based formulations. Slightly more injury was observed with oil based formulations with AE Bo 38584 providing the greatest injury. In the micro-rate programs weed control was equal with all formulations, and adding MSO to the oil based formulations did not add to the weed control obtained. With Betamix, the standard treatment provided the highest yields, and adding MSO to AE Bo 38584 resulted in greater injury and less yield. While with Progress treatments, AE Bo 49913 with MSO provided the highest yields and slightly higher injury than comparable treatments. All herbicide treatments in the experiment yielded better than the weedy check, but less than the hand weeded check. Yield increases were closely correlated to weed control ($R^2=0.82$).