

WILSON, ROBERT G., University of Nebraska, 4502 Avenue I, Scottsbluff, NE 69361. **When and what herbicides to apply for layby weed control in sugarbeets.**

ABSTRACT

Most of the herbicides applied postemergence to sugarbeets have a short life span and once they reach the soil they provide very little residual weed control. Weeds that germinate shortly after postemergence herbicides are applied escape treatment and go on to compete with the crop later in the growing season. To overcome this problem, growers have applied herbicides such as EPTC, S-metolachlor, and dimethenamid-P at early stages of crop growth in hopes that the herbicides will provide soil residual to control weeds that germinate later in the growing season. Field experiments were conducted in 2006 through 2008 to examine the efficacy of S-metolachlor or dimethenamid-P alone and in combination with ethofumesate for late-season weed control in glyphosate-tolerant sugarbeet. All weed control treatments were kept weed-free until the end of June. Beginning in July weeds were allowed to grow so that the residual benefit from herbicides applied from late April through mid June could be evaluated. Weed density was measured in late July and again in late August. Ethofumesate was applied at planting while S-metolachlor and dimethenamid-P were applied at either the 2, 4, 6, or 8 true-leaf sugarbeet growth state. Late-season weed suppression from both S-metolachlor or dimethenamid-P at the 6 to 8 true-leaf growth state provided better late-season weed control than earlier applications. The greatest late season weed control obtained with dimethenamid-P (54 percent) was obtained when the herbicide was applied at the 6 true-leaf growth stage while 70 percent control was achieved when S-metolachlor was applied at the 8 true-leaf growth stage. Sugarbeet root yield was increased 15 percent when compared to the nontreated when late season weeds were suppressed with a combination of ethofumesate at planting followed by S-metolachlor layby at the 8 true-leaf growth stage.