TOLERANCE OF SIX CLASSES OF DRY EDIBLE BEAN AND ADZUKI BEAN TO PRE AND POST APPLICATIONS OF HALOSULFURON. Gary E. Powell and Christy L. Sprague, Research Assistant and Assistant Professor, Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI 48824.

Six classes of dry bean and adzuki bean were planted in 2005 and 2006 at St. Charles, Michigan to determine the tolerance of dry bean and adzuki bean to halosulfuron applied preemergence (PRE) and postemergence (POST). Varieties of the different dry bean classes are as follows: 'Vista' navy bean, 'Jaguar' black bean, 'Merlot' small red bean, 'Othello' pinto bean, 'Chinook 2000' light red kidney bean, 'Matterhorn' great northern bean, and 'Erimo' adzuki bean. The plots were kept weed-free throughout the season. Visual injury, maturity ratings, and yield for PRE and POST applications of halosulfuron were compared with an untreated control using contrast statements. Injury from PRE applications of halosulfuron ranged from 6 to 19%, 30 d after planting (DAP) for all classes in 2005. Adzuki bean and the 'Chinook 2000' light red kidney bean exhibited the greatest injury. In 2006, only the adzuki bean was injured (9%). Injury consisted of stunting compared with the untreated control. Even though some stunting occurred with all classes in 2005 and only the adzuki bean in 2006, yields were only lower than the untreated control with 'Jaguar' black bean and 'Chinook 2000' light red kidney bean in 2005 ($\forall$ = 0.1 level of significance). In both years, POST applications of halosulfuron caused stunting and chlorosis to all classes. Injury 4 to 6 d after treatment (DAT) ranged from 21 to 48% in 2005 and 12 to 56% in 2006. By 12 to 14 DAT, most dry bean classes started to out grow the injury; however injury in the adzuki bean increased. In 2005, injury was also greater for the light red kidney bean, 12 DAT. In 2005 yield was lower than the untreated control with adzuki bean ($\forall$ = 0.05), light red kidney bean, and black bean ($\forall$ = 0.1). However, in 2006 adzuki bean was the only bean were a significant reduction of yield was observed (>45% yield reduction). Differences in precipitation between 2005 and 2006 demonstrated the differences in recovery rates from POST halosulfuron injury to these different classes. Of all of the bean classes tested POST applications caused the greatest injury and yield reductions for adzuki bean, therefore POST applications of halosulfuron should be avoided to this class. Caution should also be taken when applying halosulfuron to black bean and light red kidney bean if conditions are not conducive for recovery from initial halosulfuron injury.

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