

EFFECTS OF ROOT SEGMENTATION ON CANADA THISTLE SUPPRESSION. Richard Crow and Edward Lushei, Research Assistant and Professor, Department of Agronomy, University of Wisconsin, Madison, WI 53706.

Canada thistle has earned a reputation of being difficult to manage due, in large part, to its spreading root system. Standard low-soil-disturbance control measures include mechanical actions, like periodic mowing, leaving the below-ground root system intact. We hypothesized that segmenting the root system might substantially improve control by inducing increased stem production, potentially increasing the amount of stored reserves converted into actively growing tissue. To test our hypothesis, we setup a 2x2 factorial experiment with mowing and root segmentation as factors. During each of the two replications, data was collected on biomass and stem production. We found a statistically significant interaction between the mowing and segmenting treatments on stem production in both temporal replications; as well as a significant interaction on biomass production in one of the two replications. There was no significant difference between the simple effects of mowing and mow plus segmentation on stem production, while the significant difference between the simple effects on biomass production was inconsistent. The simple effect of segmentation on stem production was an increase of 67% in 2006 and 9% in 2007 compared to a non-treated check. Root segmentation of Canada thistle was shown to increase stem production, but when combined with mowing, showed no significant difference from mowing alone.