Canada Thistle Suppression with Burning

Conservation Reserve Program (CRP) acres are occasionally burned in the spring to remove dead grass and litter for improved wildlife habitat, to stimulate germination of legumes, forbs and other plants, and to kill or set back encroaching woody vegetation. Some individuals have reported that burning has decreased the Canada thistle infestation in their fields. The objective of this research was to evaluate the effects of burning on Canada thistle in CRP land.

The research site was located near Lake Bronson, MN and the CRP land was a mixed stand of grasses and forbs with brome as the most common species. Plots are 30 by 30 ft with 3 ft mowed alleyways between treatments. The plots were burned on June 2 and there was a moderate canopy of green and dead plant material (Photo 1). The treatments were burned at a date later than that of a typical CRP contract holder who may tend to burn before there is significant early season growth of plants. Burning was delayed with the intent of allowing more Canada thistle plants to emerge, thereby increasing the amount of injury on the Canada thistle infestation. Canada thistle plants were at rosette stages of development and were from 6 to 12 inches tall. The total numbers of Canada thistle stems were counted in each plot in June before burning and again in October. The number of stems per plot was used to calculate the percent control, which is percent reduction in the number of Canada thistle stems in a treatment over time.

**Results:**

Burning increased Canada thistle density compared to unburned plots (Table 1). The increase in stem number from June to October in the burned treatment was over five times larger than in unburned plots. Canada thistle in burned areas were slightly shorter and flowering was delayed. Plants in the burning treatment (immediately after treatment) were either killed or strongly injured (Photo 2), however, the effect seems to be similar to that of mowing. Mowing Canada thistle stimulates the release of dormant root buds on roots and as a consequence increases the density of plants compared to un-mowed areas by the end of the growing season.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>% Control</th>
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<tbody>
<tr>
<td>Burned</td>
<td>-231*</td>
</tr>
<tr>
<td>Unburned</td>
<td>-42</td>
</tr>
<tr>
<td>LSD 0.05</td>
<td>69</td>
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*Negative number indicates an increase in Canada Thistle.

Table 1. Effects of burning on Canada thistle

* % Control - is not a visual rating but a calculation of the % reduction in stem number from the initial count of Canada thistle stems in each treatment to the final count.

Photo 1. Burned compared to unburned plots at Lake Bronson.

Photo 2. Canada thistle plants injured by burning

For additional information:

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