Blackbird Damage to Sunflower Crops in Nebraska

Funding provided by National Sunflower Association

Summer 2015

Blackbird damage is a persistent problem faced annually by sunflower growers. However, the economic impacts of bird damage are not well understood. From 2009 to 2013, the National Sunflower Association sponsored a survey of mature sunflower fields in ND, SD, KS, CO, MN, TX, NE, and VT to estimate percent blackbird damage to oilseed and confectionery sunflowers. The data collected were used to estimate monetary losses ($US/acre) and to develop a comprehensive economic impact analysis of blackbird damage in each surveyed state.

Surveyors stopped every 10,000-15,000 acres and estimated percent loss due to blackbird feeding in two random locations within the field. Annual acres harvested and average yield in each state was obtained from the National Agricultural Statistical Service (www.nass.usda.gov/Quick_Stats).

The average annual (direct + indirect) economic impact for bird damage to sunflower production in NE was $2.6 million

- Total economic impact was calculated using a model of the regional economy that predicts how a change in one industry can affect revenue and employment throughout the economy. These results illustrate how crop loss affects the region’s economy.
- Annually in Nebraska, blackbirds reduced oilseed sunflower yields by 5.24% valued at $359,661 statewide in direct damages. Blackbirds reduced confectionery sunflower yields by 5.8% valued at $1.2 million statewide in direct damages.
- Overall, average annual direct blackbird damage cost to Nebraska’s sunflower growers was $1.6 million.
- Of the 8 surveyed states, Nebraska ranked 2nd in bird damage to confectionery and 4th in bird damage to oilseed hybrids.

Economic Impact of Blackbird Damage

- Study results indicate that the eight states lose $29.5 million annually due to bird damage to oilseed and confectionery, which causes a corresponding employment loss of 14 jobs.
- Average current damage per acre ranges from $11.75 in Oilseed to $25.92 in Confectionery in NE.
- Average percent bird damage in NE for oilseed sunflower fields are 5.2% and for confectionery sunflower fields are 5.8%.
- In all 50 states, blackbird damage is significant, with growers losing 2.8% and 1.8% per year of oilseed sunflower and confectionery production, respectively.
In summer 2009 to 2013, trained teams assessed 721 physiologically mature oilseed and 230 confectionery hybrid sunflower fields for yield and production limiting factors in ND, SD, KS, CO, MN, TX, NE, and VT. Table 1 displays the data collected by trained teams in Nebraska.

Ranking 6th in the U.S. for sunflower production, NE produces about the same amount of oilseed as confectionery sunflowers.

Data Collection Results:
- Blackbird damage came in 5th place in the Limiting factors on production (plant spacing, disease, drought, and weeds).
- Biological issues was ranked 3rd for blackbird damage (behind disease and weeds).
- Calculated field estimate loss for Nebraska is $1.6 million in direct damages.

National average annual blackbird damage was $11.3 million for oilseed and $2.5 million for confectionery sunflower fields.

- In NE, cost of blackbird damage was 120.6% higher for confectionery sunflower.

Note: Damage numbers are based on the survey done at physiological maturity. Additional damage could have occurred prior to harvest.

Table 1. Average Annual Sampled Results of Sunflower Damage and Yield in Nebraska, 2009-2013

<table>
<thead>
<tr>
<th>NE</th>
<th>Mean Harvested (acre)</th>
<th>Mean Sampled (N)</th>
<th>Mean Yield (lbs/acre)</th>
<th>Lost to Bird Damage</th>
<th>Mean % Damage</th>
<th>Mean Damage Value $US/acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oilseed</td>
<td>27,160</td>
<td>15</td>
<td>1,079</td>
<td>5.2</td>
<td>11.75</td>
<td></td>
</tr>
<tr>
<td>Confection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Oilseed | 19,753 | 11 | 1,331 | 5.8 | 25.92 |