

## POPULATION DYNAMICS OF BLACKBIRDS RESPONSIBLE FOR DEPREDATION OF THE NORTHERN GREAT PLAINS SUNFLOWER CROP

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Blackbirds feed on ripening sunflowers in the northern Great Plains which results in significant losses to sunflower growers. These marauding flocks consist primarily of Red-winged Blackbirds (*Agelaius phoeniceus*), and to a lesser extent Common Grackles (*Quiscalus quiscula*) and Yellow-headed Blackbirds (*Xanthocephalus xanthocephalus*). Recent Breeding Bird Surveys indicate that redwing populations in the northern Great Plains have decreased from 1966-1996, whereas grackle and yellowhead populations have increased in the region (Sauer et al. 1997). Despite the decrease in redwing populations, it was the second most frequently encountered species in North America during the 1994-95 surveys (Peterjohn et al. 1996).

Wildlife Services personnel plan to conduct a spring baiting program with 2% DRC-1339 treated brown rice. This management strategy has the greatest potential to effectively reduce populations because populations are at their lowest during this time of the year, the birds are congregated in large numbers, and food is limited. Thus, they should be more readily targeted than fall populations that are larger, more dispersed, and that have a large food supply available to them.

It is proposed that one million birds of each sex will be removed annually over the next three years. Assuming a stable age distribution, an initial breeding population of 24.6 million redwings in the sunflower growing region of the northern Great Plains (Stehn 1989), and that equal numbers of males and females will be removed from the population, a very simplistic and preliminary analysis using the RAMAS computer model predicts that the population will be reduced to 18.5 million birds after three years. This would result in a 25% population reduction. If the population is not stable and is declining, the population management effects will be exacerbated, whereas if the population is increasing the effects will be less.

Production losses from blackbirds in 1999 was estimated at approximately 5%. Theoretically a 25% reduction in population could translate into a 25% reduction in sunflower damage which would decrease damage to 3.75%. Such a strategy over a six year period could then reduce damage by 50%. However, the problem is that sunflower damage is clumped locally, and birds will be culled equally from throughout the region. Therefore, these damage reduction estimates may not be applicable to all growers.

## Literature Cited

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The 1999 Sunflower Research Workshop, sponsored by the National Sunflower Association, took place on January 18 and 19, 2000, at the Ramada Plaza Suites, Fargo, ND. The workshop was very well attended and received by public and private researchers from the United States and Canada, as well as other interested parties.

This volume contains nearly all the presentations given at the 1999 workshop. Some of the papers are summarized or abstract form.

The National Sunflower Association would like to extend its appreciation to those presenting papers/posters at this annual Sunflower Research Workshop and to those who participated by their

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Questions regarding these proceedings may be directed to the National Sunflower Association, 4023 State Street, Bismarck, ND 58501.

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