ORAL PRESENTATION PROFESSIONAL

**Neonicotinoids on the landscape: Evaluating avian exposure to treated seeds in an agricultural region**

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Neonicotinoid pesticides (e.g., imidacloprid, thiamethoxam, clothianidin) are commonly applied to agricultural seeds such as corn, soybean, and wheat. Neonicotinoid-treated seeds could be available to wildlife through spillage during planting or through exposed seeds near or at the soil surface after planting. We examined exposure of wild birds to these pesticides in agricultural landscapes of Minnesota. We quantified seed availability at the soil surface in recently planted fields and the rate of seed spills during planting, as well as documenting wildlife that ate treated seeds with trail cameras. During 2 springs, we observed 329 spills during our surveys in 76 townships. Using plots in the centers and corners of 71 fields, we measured exposed seed at the surface of 25 fields and spills in 12 fields. In video observations, we documented numerous gamebirds and non-game birds, as well as mammals that consumed treated seeds. Forty-seven of 59 (80%) greater prairie-chicken (*Tympanuchus cupido*) fecal pellets and 97 of 109 (89%) sharp-tailed grouse (*Tympanuchus phasianellus*) pellets collected from leks had detectable concentrations of at >1 neonicotinoid, with imidacloprid being most commonly detected. We also used hunter-harvested samples to examine recent exposure in wild populations; 34 of 45 (76%) greater prairie-chicken livers and 74 of 81 (91%) sharp-tailed grouse livers contained detectable concentrations of >1 neonicotinoid. Our findings indicate that treated seed was widely available on the landscape, was consumed by wildlife, and that neonicotinoids were detectable in a majority of samples collected from wild prairie grouse both in the spring and fall.