Apr 12th, 10:00 AM - 11:00 AM

Organochlorine Pesticide Contamination and its Potential Effects on Eggshell Characteristics of Dickcissels (Spiza Americana)

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Wall, Bridget; Koval, Jason; Ross, Stephanie; Harper, Faculty Advisor, Given; Frick, Faculty Advisor, Jeffrey; and Hoffmann, Faculty Advisor, Stephen, "Organochlorine Pesticide Contamination and its Potential Effects on Eggshell Characteristics of Dickcissels (Spiza Americana)" (2008). *John Wesley Powell Student Research Conference*. 2.  
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ORGANOCHLORINE PESTICIDE CONTAMINATION AND ITS POTENTIAL EFFECTS ON EGGSHELL CHARACTERISTICS OF DICKCISSELS (*SPIZA AMERICANA*)

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Dickcissels (*Spiza americana*) are small, sparrow-like songbirds that nest in grasslands in the U.S. and winter in Venezuela. Farmers in Venezuela intentionally spray dickcissel flocks with organochlorine (OC) and other pesticides in an attempt to kill them when they feed in rice fields. Previous studies have shown that organochlorine (OC) pesticide contaminants (e.g., DDT) have significantly reduced eggshell thickness in eagles and falcons. Although DDT was banned more than twenty years ago, OC compounds and their metabolites still persist in wildlife, possibly resulting in reduced reproductive success and in disrupted endocrine systems (Harper et al. 1996). Recent studies (e.g., Harper et al. 1996, Klemens et al. 2000, Bartuszegvige et al. 2002) have shown OC contamination in Neotropical migratory passerines (i.e., songbirds that breed in Canada and the United States and winter in Mexico and Central and South America.), including dickcissels. The purpose of this study is to determine the effects of OC contamination on thickness and color (hue, saturation and brightness) of dickcissel eggshells. The ecological implications of contamination may include the effect of eggshell coloration on the amount of male parental investment, reduced hatching success of dickcissel eggs, as well as the success of dickcissels in rejecting brown-headed cowbird (*Molothrus ater*) eggs.