

## **CROP AND CULTURAL PRACTICES INFLUENCE THE ABUNDANCE AND DIVERSITY OF SOIL-SURFACE COLEOPTERA IN THE PALOUSE**

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Soil surface Coleoptera include both pests and potential biological control agents. Some beetle species typically considered foliar can be trapped on the soil surface. Coleoptera trappable on the ground form a potentially interacting community because of their shared habitat. We trapped Coleoptera on the soil within experimental plots to compare conventional and reduced tillage in a typical winter wheat/spring cereal/legume (pea) rotation for 2 years. In each year, 6 treatments were compared (3 crops x 2 tillage methods) with 4 replications. Replicate plots were 10m x 10m. Our data include over 75 species and morphospecies, predominantly in the families Carabidae, Staphylinidae, Anthicidae, Chrysomelidae, and Coccinellidae. Among Carabidae, the most abundant species, *Poecilus scitulus*, was substantially and significantly more abundant in conventionally tilled treatments, and this effect was most pronounced in peas. In contrast, *Pterostichus melanarius* tended to be more abundant in reduced tillage plots than in other treatments, with the strongest effect in cereals. Other tillage and tillage x crop type effects in abundance of specific taxa occurred. The mechanisms producing these patterns and implications for community function have not been determined. Hypotheses will be discussed.