

CARABID DIVERSITY IN NORTHERN GREAT PLAINS CROPPING SYSTEMS

S. L. Blodgett, P.M. Denke, C. A. Miller and S. Wallace

Dept Entomology, Montana State University, Bozeman, MT 59717, USA

Ground beetles are a frequently encountered generalist predator of northern Great Plains cropping systems, though impacts of carabids are largely unknown. Studies of carabid assemblages have been conducted at two locations of the MSU Sustainable Pest Management (SPM) Program (Havre and Moore) and also at Agricultural Canada, Semi-Arid Prairie Agricultural Research Center located in Swift Current, Sask. Plots were established at each site to determine the effects of crops, crop sequence and rotational effects on carabid assemblages. Oilseed, cereal and legume crops were included at each of the sites. Pitfall traps were used to assess carabid species complex and activity.

There were significant differences in species and activity among years (1998 – 2000), sites and crop sequences. *Harpalus fuscipalpis* accounted for between 18.6 – 52.8% of the carabids collected across all sites in 1999 and dominated the collections from yellow mustard (*Sinapis alba*) and canola (*Brassica napus*). *Amara thoracica*, *Harpalus paratus*, and *Bembidion quadrimaculata* were found at two of the three sites in 1999. There was a significant decline in carabid numbers from 1998 and 1999 to 2000, with 12.0, 14.5 and 1.3 mean number of beetles collected per trap per day ($F=34.06$, $Pr>F = <0.01$) most likely due to a sustained period of drought.