BIODIVERSITY OF ANTS (HYMENOPTERA: FORMICIDAE) IN RESTORED GRASSLANDS OF DIFFERENT AGES

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ABSTRACT

Grasslands are an endangered ecosystem. Unfortunately, few studies monitoring the health of these grasslands have included arthropods, thus leaving out a vital biodiversity component. Ants have been proven to be reliable indicators of restoration success in some habitats. Literature regarding the benefits of ants in ecosystems is abundant; however, studies examining ant grassland ecology are limited. The availability of Conservation Reserve Program (CRP) land of different ages allowed us to examine differences in ant diversity (richness and abundance), species composition, and functional groups at different times since being restored as grasslands. Four sampling techniques were utilized (pitfall traps, litter samples, hand collection, and soil core sampling) on four different ages (0, 3, 7-8, 14-16 yrs) of grassland in east-central Missouri. Efficacy of sampling methods was also examined. A total of 18,743 ants were collected, representing 28 species in 16 genera. Ants were most abundant in older ages of CRP land. Species richness peaked in 7-8 yr fields. Some species showed patterns of being either early colonizers, late colonizers, or present in all field ages. The functional groups Cold Climate Specialists, Opportunists, Cryptic species, and Generalized Myrmicines (in descending order) dominated CRP land. Pitfall traps were the most effective sampling method. The results of this study provide baseline information on how ants establish on restored grassland in the CRP and provide information for future comparative studies.