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POLLINATOR VISITATION AND PLANT DIVERSITY IN TALLGRASS PRAIRIE COMMUNITIES

Cara Cook

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Successful pollination plays a key role in a species' survival, and while features of flowers have been well-studied in their effect on pollinator visitation, the effects of other variables, including the presence of soil microbes or the plant diversity of a community, are not well understood. We tested the hypotheses that 1) increased diversity of the surrounding plant community increases the rate of pollinator visitation as well as pollinator diversity; and 2) the presence of soil microbes mediates plant-pollinator interactions. During the summer of 2016, we observed the number and types of pollinator visitations on three tallgrass prairie species native to Missouri: *Monarda fistulosa*, *Echinacea purpurea*, and *Ratibida pinnata*. The plants have already been established at the Tyson Research Center in experimental plant communities differing in species richness (1, 3, or 6 species mix) as well as in the phylogenetic relatedness among community members. The monocultures were grown in the presence or in the absence of live soil microbes. The total number of pollinator visitations and pollinator diversity differed significantly among the three plant species. However, we found no evidence that plant diversity or soil microbes do influence total visitation and pollinator diversity for the three species. Species and species richness only interacted significantly on the total number of flies, but there was no interaction on the other pollinator groups or total pollinators. Our results highlight the importance of species specific interactions as we could show that specific pollinator groups are influenced by plant diversity as well as soil microbiota.