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Project Title: Evaluating the Relative Attractiveness of Native Flowering Plants to Arthropod Natural Enemies and Herbivores

The use of native flowering plants in habitat management can enhance the biological control of pests by providing various environmental prerequisites to their natural enemies. Many agroecosystems can be difficult environments for natural enemies due to their high levels of disturbance and lack of essential resources. Resources such as pollen, nectar, alternate hosts or prey, nesting habitats, and shelter from adverse conditions can create a favorable climate for the development of natural enemy populations. The enhancement and conservation of these beneficial arthropods will consequently decrease presence of agricultural pests. I will compare ten species of Vermont native perennials against the background vegetation (grass margin) for their relative attractiveness to natural enemy and herbivore (pest) arthropods. Attractiveness of the plants was be based on the abundance and species diversity of arthropods collected per sample, and as such, will be a measurement of the relative attractiveness to the plant species. To compare herbivore and natural enemy abundance, I will conduct a two-way analysis of variance (ANOVA) with block and plant species as factors on the mean insect counts for the full bloom period. The plant species will be divided into three categories for ANOVA analyses according to timing of peak bloom: early season, midseason, or late season. The native plant species that attracts a diversity of natural enemy taxa, while attracting the least amount of herbivores, will be recommended for future testing. This alternative approach to widespread pesticide use may be adopted by those who wish to promote sustainable agriculture in a way that is less damaging to the environment and more cost effective.