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## Effectiveness of flowering plants in attracting arthropod natural enemies in vegetable production

Flowering plants help to attract natural enemies of pest arthropods to cropping systems. Natural enemies are a category of beneficial arthropods such as insect predators and parasitoids that could control pest arthropod populations in cropping systems. The use of flowering plants is a sustainable way of managing pests in crop production. Growing them in crop fields is an alternative pest management practice, especially for cropping systems such as organic and small farming, where the use of pesticides is limited. Flowering plants maintain natural enemy populations through their flower nectar and pollen; thus, they are also called insectary plants. The floral resources of flowering plants are essential for natural enemies to survive, develop, and reproduce, especially when their prey is scarce. Although the use of flowering plants in crop fields is not a new concept, their use is still limited to a few plant species. Information on insectary plants and the natural enemies they attract is still scarce in the southeastern United States. The objective of this study is to find the suitability of various flowering plant species for arthropod pest management in crop production. We evaluated eight species of flowering plants; cosmos (*Cosmos bipinnatus*), black-eyed Susan (*Rudbeckia hirta*), lanced-leaf coreopsis (*Coreopsis lanceolata*), borage (*Borago officinalis*), golden marguerite (*Anthemis tinctoria*), marigold (*Tagetes erecta*), eastern purple coneflower (*Echinacea purpurea*), and a dwarf sunflower var teddy bear (*Helianthus annuus*) to identify the natural enemies they can attract throughout the growing season from May to October 2022. We selected these flowering plant species based on their USDA plant hardiness zones that match with Tennessee plant hardiness zones. We conducted a field study at the Tennessee State University's Agricultural Research and Education Center in Nashville, Tennessee, and collected data at weekly intervals. We used three monitoring methods to evaluate the natural enemies attracted to flowering plants. First, visual observation to count the number of insects visually observed on the plants; second, sweep sampling to monitor the flying or jumping insects; and third, Pitfall traps to collect the ground-dwelling insects. Our results show that flowering plants, such as cosmos, sunflower, marigold, and Rudbeckia, attract predatory arthropods, like syrphid flies, ladybeetles, big-eyed bugs, ground beetles, and minute pirate bugs. Our study demonstrates the suitability of various flowering plants in attracting and conserving natural enemies in cropping systems. This study's outcome will help promote flowering plants in crop production.