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Encouraging Biodiversity with Wildflower Demonstration Plots

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Biodiversity is under threat in our landscapes as natural lands are converted into urban areas. Wildflowers have the potential to support insect pollinators, which can provide valuable ecosystem services. Many wildflowers are fairly low maintenance in the landscape, are easy-to-grow from seed and can be sustained year after year. Extension demonstration gardens are ideal locations to showcase new practices and plant selections. Objectives of this study were to 1) determine species and flower mixes to maximize flowering time, and 2) educate the public about wildflower species selection and growing techniques. Demonstration plots of wildflower species and mixes were direct seeded at the University of Florida/IFAS Orange County Extension center on 1 October 2020. Flowering time was recorded, and field days were conducted both in-person and virtually to educate the public. Cosmos, zinnias, and phlox were the earliest blooms starting less than 60 days after planting (DAP). Blanketflower, sweet alyssum, calendula, lanceleaf coreopsis and Leavenworth's tickseed flowered 90 DAP or later. After viewing our wildflower plots, 100% of survey respondents (n = 104) indicated they were likely to plant wildflowers. Two main reasons reported to plant wildflowers were to attract pollinators and use native plants. Responses indicated an increase of knowledge in seed planting (85%) and seed saving (84%). Wildflowers can be easily started from seed and are a great way to increase biodiversity of our landscapes. Extension centers are a trustworthy places for people to learn about species suitable for their location and initiate adoption of environmentally-friendly practices.

Landscapes in new developments of housing and retail spaces are often planted with perennial shrubs, some of which may be low maintenance, but they also have low wildlife value. Biodiversity is important to having an ecological landscape where the beneficial insects prey on garden pests (Dale et al., 2020). Many wildflowers are low maintenance, are easy to grow from seed and provide food in the form of pollen and nectar, for insects. Wildflowers have the potential to support insects, which can provide valuable ecosystem services such as biological pest control and pollination of food crops. In addition, wildflower gardens can be sustained year after year as seeds can be saved or allowed to reseed in place. Home gardeners face many barriers to adopting new practices, such as planting wildflowers in their yards. Demonstration gardens at extension centers are an ideal location to showcase species to enable the public to learn characteristics of plant selections. Extension centers are trustworthy places for people to get information and see practices in action (Glen et al., 2013). Extension programs can also assist people by supplying them with seeds. Seeds can also be easily obtained from local plant nurseries, seed suppliers and gardening groups. Objectives of this study were to 1) determine species and flower mixes to maximize flowering time and 2) educate the public about wildflower species selection and growing techniques.

Materials and Methods

Demonstration plots of seven wildflower species and mixes were direct seeded at the University of Florida/IFAS Orange County Extension center on 1 Oct. 2020. Plantings included two species of tickseed (*Coreopsis lanceolata* and *Coreopsis leavenworthii)*, blanketflower (*Gaillardia pulchella)*, phlox (*Phlox drummondii*), blanketflower + phlox, *Coreopsis lanceolata* + phlox, and Ferry-Morse wildflower seed mix (Ferry-Morse, Norton, MA). The purpose of the wildflower seed mixes was to extend the flowering time, as some of the native species take many months to bloom. Plots were 1.2 × 1.2 m in size and were prepared by loosening the soil with a hoe, leveling it out with a rake, and sprinkling the seeds on the ground and patting them in. The experimental design was set up as a randomized complete-block design with four replications. Plots were maintained with hand weeding and watered twice a week for establishment during the first month and once per week after establishment. No fertilizer or pesticides were used. Flowering time was recorded when blooms first appeared for each species or flower mix. Field days were conducted both in person and virtually via Facebook live video to show the public the wildflower demonstration plots.

Results

Cosmos and zinnias in the Ferry Morse seed mix were the earliest blooms starting at 30 days after planting (DAP) and phlox began flowering 62 DAP as shown in Fig. 1. Blanketflower, sweet alyssum, and calendula were flowering 96 DAP. Lanceleaf coreopsis blooms appeared 147 DAP (Fig. 2) and Leavenworth's tickseed did not flower until April 2021, at 196 DAP. Survey responses (n = 104) were collected from in person (n = 17) and online viewers (n = 87). After viewing our wildflower demonstration plots, 100% of survey respondents indicated they were likely to plant wildflowers in their garden.

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Fig. 1. Cosmos and zinnias in bloom at 62 days after planting at the Orange County Extension Center, Orlando, FL. Photo credit: Tiare Silvasy.

Fig. 2. Tickseed and phlox in bloom at 147 days after planting at the Orange County Extension Center, Orlando, FL. Photo credit: Tiare Silvasy.

Survey respondents reported the main two reasons to plant wildflower plots were to attract pollinators and to use native plants. Other reasons included to conserve water, reduce fertilizer and pesticide use. Survey respondents indicated an increase of knowledge in seed planting (85%) and seed saving (84%).

Conclusion

Wildflowers can be easily started from seed and are a great way to increase biodiversity of our landscapes. This could result in more diverse wildlife and pollinator populations. Wildflower seeds are cheap and can be easily obtained by mail order, they are adapted to low inputs of fertilizer and can withstand rainfall and drought. Wildflower gardening is sustainable; after the initial purchase of seeds, gardeners can save seeds and reseed the plot or share seeds with others. The University of Florida Florida-Friendly Landscaping™ program recommends both native and nonnative species. In this trial we found that native wildflowers bring unique insects, while non-native wildflowers are earlier to bloom. Extension centers are a trustworthy places for people to learn about species suitable for their location, learn relevant horticultural techniques and initiate adoption of environmentally friendly gardening practices.

Literature Cited

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