Marketing the ecosystem services provided by food plants for pollinators[©]

D. Smitley^a

Department of Entomology, Michigan State University, East Lansing, Michigan 48824, USA.

The recent focus on protecting bees and butterflies has created some pest management headaches for greenhouse and nursery growers. Despite the fact that production practices used when growing plants for garden center sales has very little to do with the decline of honey bees or monarch butterflies, much public attention has been focused on them. This has led to a few of the major retail chain stores putting some restrictions on their growers: banning the use of neonicotinoid insecticides, or requiring a label in each pot saying that one was used. Also, for plants that are either super-attractive to bees (Figure 1) (like linden trees, sedum, panicle hydrangea, etc.), or for plants used as food for caterpillars (like milkweed being sold for monarch caterpillars and butterflies), systemic insecticides should not be used at all, and growers should avoid insecticide residue on flowers.



Figure 1. A honey bee (*Apis mellifera*) and a small carpenter bee (probably *Ceratina mikmaqi*- male) on milkweed flowers.

In addition to increasing the complexity of pest management efforts, increased awareness of the importance of pollinators has also created some marketing opportunities for growers. Many of the annual flowers, perennials and shrubs grown for garden centers are highly attractive to bees, butterflies, and many important predators and parasitoids that keep pests under control. A relatively new term appearing more frequently in the press the last 5 years is "Ecosystem Services". Ecosystem services are the benefits people obtain from the land, water, plants and animals in natural ecosystems where they live or visit. The term has been used frequently to describe the benefits to mankind obtained from bees that pollinate flowers needed to produce fruit and nuts. But it can also be used to describe any natural benefit, like water for irrigation, natural beauty, and the cooling effect of trees on local climates. The ecosystem services provided by flowering plants purchased in garden centers include providing food for pollinators (mostly bees and butterflies), and providing food for many types of important predators and parasitoids that keep plant pests under natural control without the use of pesticides, or with selective use of pesticides to preserve natural enemies. For more information on how to manage major plant pests while also

_

^aE-mail: smitley@msu.edu

preserving and enhancing pollinators, see the new bulletin: Protecting and Enhancing Pollinators in Urban Landscapes, available for free on-line (http://msue.anr.msu.edu/resources/how_to_protect_and_increase_pollinators_in_your_landscape).

Some growers have started marketing the benefits of patented flower types that are beneficial to pollinators, with creative names like BeeBright[™] Pentas, and BeeDance[™] Bidens (*Bidens* 'Sunbidevb 2' Beedance[®] Red Stripe[™] biden) (Figure 2).



Figure 2. A: BeeBright® penta from Syngenta Flowers, and B: Beedance® Red Stripe™ biden from Suntory.

So far I have not seen any marketing of how natural pest control will be boosted by adding a sequence of flowering plants to the garden that will bloom throughout the year. This is just as great or even a greater benefit than providing food for pollinators. Here are a few resources for finding out which plant types are highly attractive to pollinators and other beneficial insects. Flowers that provide nectar and pollen for pollinators are also very good for predators and parasitoids. The following resources may be helpful for learning about which flower types are the best for pollinators and other beneficial insects.

Additional reading

Comba, L., Corbet, S., Hunt, L., and Warren, B. (1999). Flowers, nectar and insect visits: evaluating British plant species for pollinator-friendly gardens. Ann. Bot. 8 (4), 369–383 https://doi.org/10.1006/anbo.1998.0835.

Garbuzov, M., and Ratnieks, F. (2014). Quantifying variation among garden plants in attractiveness to bees and other flower-visiting insects. Funct. Ecol. *28* (2), 364–374 https://doi.org/10.1111/1365-2435.12178.

Lindter, P. (2014). Garden Plants for Honey Bees (Wicwas Press, LLC).

Shackleton, K., and Ratnieks, F.L.W. (2016). Garden varieties: how attractive are recommended garden plants to butterflies? J. Insect Cons. 20 (1), 147–148.

Smitley, D., Brown, D., Elsner, E., Landis, J., Shrewsbury, P., and D. Herms. (2016). Protecting and enhancing pollinators in urban landscapes for the North Central Region. MSU Extension Bull. E3314.

Xerces Society. Pollinator plants: Great Lakes Region. http://www.xerces.org/wp-content/uploads/2014/03/GreatLakesPlantList_web.pdf.