



**HONEY BEE  
HEALTH  
COALITION**

## **Best Management Practices for Planting Pollinator Forage**



The practices that have been recommended thus far in this guide help protect bees. One of the best ways that growers and landowners working in canola production can proactively improve honey bee health is by providing pollinator habitat and forage

nearby. Research shows that planting forage provides honey bees, native bees, and other pollinators with better nutrition — and healthy bees means a healthier agricultural landscape. An added benefit is that the forage provided during canola planting and pollination may provide a buffer when pesticide applications are scheduled.

Planting pollinator forage can be integrated into existing sustainability efforts — such as field buffer strips and natural habitat restoration — by including pollinator-friendly seed mixes.

In this section, you can learn more about the forage benefits for canola growers, several types of forage projects, and then how to get started. You'll also find a list of resources with links that can help you connect with resources and programs for your area.

### **Forage Benefits for Canola Growers**

Growers and landowners may be eligible to earn payments from a variety of public sector and private sector programs. These include cost-share programs through the USDA Farm Service Agency (FSA) and the U.S. Fish and Wildlife Service (USFWS) as well as state and/or private programs offering seed, technical support, or other conservation incentives for creating and maintaining pollinator habitat. Programs include the Conservation Reserve Program (CRP) as well as local and regional programs with county-specific or temporary financial support. This is a great way to put marginal and non-production land (such as field borders, buffer strips, roadways, railways, and waterways) to use and get paid for conservation practices.

Beyond cost-sharing and potential financial compensation, growers who plant pollinator habitat may also benefit from reduced soil erosion, protected and improved soil and water quality, and enhanced food and cover for other wildlife, according to the USDA Natural Resources Conservation Service (NRCS). Michigan State University researchers note the potential for organic matter accumulation, compaction alleviation, and improved water filtration. Pollinator habitat may also store carbon in the soil and act as a carbon sink by encouraging deep-rooted plants and limiting soil disturbance.

Growers also may be able to earn recognition or a premium for sustainably produced crops and/or access to markets that require sustainability metrics (Muth, 2018; Wratten et al, 2012) such as established pollinator habitat. In addition, many consider pollinator habitat a beautiful addition to the landscape (Wratten et al, 2012).

### **Types of Forage Projects**

- Enhance off-field areas with forage
  - Plant diverse wildflower patches that bloom all season long
  - Install hedgerows with blooming shrubs, trees, and/or wildflowers
  - Establish non-crop buffer strips
  - Restore native plants in nearby natural areas

- Provide nesting habitat for ground bees
  - Leave areas of grass or bare soil untilled for ground-nesting bees
  - Leave some tree snags or dead pithy stems for stem-nesting bees
- Provide access to clean water
  - Bird baths
  - Irrigation, ditches, or natural ponds

### **Best Practices for Forage Plantings**

Because many pollinators and other wildlife have experienced extreme habitat declines, landowners should strive to make their pollinator forage plantings as constructive as possible. Plantings can be designed to fit the goals, size, and appearance the grower desires. The best planting will depend on budget, size, soil type, climate, weed history, and other factors. A good first step is to speak with field staff at your county USDA office, your Conservation District biologist, the closest Farm Bill biologist, or any of the programs linked below. The following best management practices provide a general overview, and the federal or nonprofit expert you work with will likely provide recommendations specific to your site.

#### ***Site Selection and Preparation***

To maximize success and minimize long-term maintenance, be sure to spend adequate time on site preparation. This means eliminating existing vegetation and reducing competition from weeds seeds in the soil. Many techniques can be used such as herbicides, grazing, and prescribed fire. A site with existing crop stubble is an ideal choice because of decreased competition from grasses. Consider any herbicides used the previous year that could have a residual effect and prevent pollinator-friendly species from growing. If the site has existing grass, it is recommended to plant soybeans and apply standard herbicide treatments for one growing season to address weeds and improve soil nitrogen. Depending on the techniques used and the season in which you start, proper site planning and preparation could take from six months to one or more years.

#### ***Seed Mix Selection***

When choosing a seed mix, growers should consider which pollinators they want to attract as well as the soil type, geography, and any species restrictions mandated for conservation goals. Seed mixtures should include a high diversity of species with a variety of bloom periods that will provide pollen and nectar for the entire growing season. Also consider avoiding species that are especially attractive to deer. Talk to your local Farm Service Agency representative or seed dealer to determine the best seed mix for the site and its cost. You can also use a seed calculator that shows each species' planting rate, seeds per square foot, bloom period, and pollinator value.

#### ***Planting and Water Requirements***

When planting, it's important to have great seed-to-soil contact. This can be done with broadcast seeding on roughened bare soil or in crop stubble, depending on the crop. In areas with heavier crop stubble or existing grass, a no-till drill should be used. Broadcast seeding into lighter crop stubble in the fall is preferred. Some conservation districts have rental tools available for establishing forage. Be sure to use the appropriate planting depth for the size of the seeds. Aim for a planting depth of two times the diameter of the seed and know that a planting depth greater than 1/8" will mean some species will not appear in the planting. Planting bee-friendly forage in the fall ensures maximum rainfall-use efficiency. When seeds are sown in the fall, they should germinate with normal precipitation in fall and early winter. Winter annuals may provide flowers in time for honey bee colonies in the spring. Monitor

seedling growth to determine if supplemental irrigation is needed. Some available seed mixes have low moisture requirements.

### ***Management***

Landowners should plan for long-term maintenance and record-keeping, especially if the forage is supported by an incentive program.

If allowed by the incentive program, mow in the first year when plants are about 24 inches tall to help the forage become established. Be sure to mow the vegetation no shorter than 10 to 12 inches tall. Mowing to this height removes seed-producing parts of many weeds while minimizing impacts to the pollinator-friendly plants. It's recommended to mow twice in the first year, once in the second, and then only at the end of the season in the following years.

Address any grass encroachment before the grass outcompetes wildflowers. Use an appropriate grass-selected herbicide so that it doesn't negatively impact the forage species. The herbicide is more effective combined with another method such as prescribed fire, grazing, or shredding. Prescribed fire (combined with green fire banks that allow rotation of fire treatments) and grazing also help with wildflower establishment. Combining fire and grazing provides better results. It is highly recommended to do some management of the planting every year.

### ***Forage and Crop Pesticides***

If forage is planted next to crops or water sources, it is important to carefully read and follow pesticide label directions to avoid drift and reduce the risk of exposure to bees. Many pesticides can be used safely when pollinators are nearby as long as label directions are followed.

### **Incentive and Cost-Sharing Resources**

Some websites can provide ideas and photos of successful projects, but they may not have the latest information or a complete list of available resources. It's best to call organizations directly and talk with someone at your closest office.

Don't limit your search to pollinator-specific projects. Some programs are designed for specific habitats, such as riparian restoration or deer habitat, but can still benefit pollinators by adding the right flowering plants.

- USDA Farm Service Agency (FSA):
  - [Conservation Reserve Program \(CRP\)](#)
  - [Conservation Reserve Enhancement Program \(CREP\)](#)
- USDA Natural Resources Conservation Service (NRCS):
  - Find your closest NRCS contact at <https://offices.sc.egov.usda.gov/locator/app>
  - [Agricultural Conservation Easement Program \(ACEP\)](#)
  - [Conservation Stewardship Program \(CSP\)](#)
  - [Environmental Quality Incentives Program \(EQIP\)](#)
- Conservation District:
  - Find your district at <https://www.nacdnet.org/general-resources/conservation-district-directory>
- U.S. Fish and Wildlife Service (USFWS):
  - Find contact info for your region and state at <https://www.fws.gov/partners/contactUs.html>

- [Partners for Fish and Wildlife](#)
- The Bee & Butterfly Habitat Fund:
  - [Seed a Legacy Program](#): The Seed A Legacy pollinator habitat program is available for private, public, and corporate lands in a 12-state region of the country critical to pollinator health and habitat needs. It offers access to documented, high-quality pollinator seed mixtures for free or at discounted rates to projects that are at least two acres.
- Pheasants Forever
  - Find a biologist: <https://www.pheasantsforever.org/Habitat/findBiologist.aspx>
- Quail Forever
  - Find a biologist: <https://quailforever.org/Habitat/findBiologist.aspx>
- Seeds for Bees:
  - Project Apis m. program for California residents: <https://www.projectapism.org/seeds-for-bees-home.html>
- [For soybean and corn BMPs: [STRIPS \(Science-Based Trials of Row Crops Integrated with Prairie Strips\)](#) at Iowa State University]

## References

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