
Farmscaping

Each year as the cool winter temperatures increase, the warm spring weather brings an abundance of aphids and thrips that enjoy feeding on tender new growth. If you watch closely, this is usually followed by an abundance of predators such as ladybird beetles, lacewings, hover flies, and other predators/parasites. Where synthetic pesticides are not regularly used, these predators and parasites, also called natural enemies, consume and reduce pest populations. In addition to natural enemies, pollinators such as native bees and honeybees pollinate 80% of our nation's food crops. Eliminating unnecessary pesticide applications benefits pollinators as well. Insect predators, parasites, and pollinators are beneficial insects that increase production and can reduce or eliminate the need to apply synthetic pesticides.

Another way to boost beneficial insect numbers and activity is through "farmscaping". Farmscaping is a whole-farm, ecological approach to pest management and uses non-crop plants interplanted with crop plants to support populations of beneficial insects. Farmscaping includes insectary plants (plants that attract and feed beneficial insects) and cover crops to provide habitat elements (food, water, shelter, and space) for beneficial insects. Cover crops can also increase soil organic matter, fertility, and tilth.

Farmscapers create prime habitat for the beneficial insects right in the fields. The beneficial insects will be healthier, reproduce more readily, and be more effective at biocontrol when provided nearby habitat with an adequate and easily available diet of nectar, pollen, and herbivorous insects and mites as food to sustain and increase their populations. Flowering plants are particularly important to adults of the wasp and fly families, which require nectar and pollen sources in order to produce the immature larval stages that parasitize or prey on insect pests.

Farmscaping requires some thought and planning. Simply selecting a random group of plants could result in a situation that favors pest species. This is why it is important to identify those plants, planting situations, and management practices that best support populations of beneficial insects. Farmscaping requires greater knowledge and management skill than conventional pest management. The farmscapers' payoffs are reduced pesticide use and associated costs, reduced pesticide residues on crops, and an overall safer farm environment with increased biodiversity.

Guidelines usually suggest planting 1 to 5% of the total field area to "farmscaping plants" in rows between crop plants or along windbreaks and borders. Data suggest that planting permanent insectary rows is superior to planting them annually. Depending on the plant species, these "perennial islands" provide food resources for beneficial insects as well as overwintering sites. During the growing season, beneficial insects can colonize the crop plants directly from the adjacent farmscape.

Many gardening catalogs sell seed mixes for farmscaping applications (often called "beneficial blends" or "insectary blends"). These mixes will usually contain plants in the carrot, sunflower, and mint families. Seed mixes may or may not contain cover crops (legumes and other soil building species). Cover crops that are good insectary plants include buckwheat, sweet clover, fava beans, vetch, clover, mustards, and cowpeas.

You might try some of the following plants in a farmscape plant/seed mix: sweet clover, alfalfa, gypsophila, alyssum, yarrow, black-eyed Susan, evening primrose, cowpeas, basil, carrot, dill, parsley, buckwheat, and fennel. There are many other options. Leave some carrot plants (biennials) to winter over and flower as well as plant nectar producers like Mexican sunflower (*Tithonia rotundifolia*). Hairy vetch (*Vicia villosa*) can be planted in the cool season. Cat mint (*Nepetia* sp.), a somewhat invasive, nectar producer, flowers throughout the summer. You can plant zinnias and cornflowers in between summer crops.

Natives and landscape plants can also contribute to the farmscaping potential of your garden or orchard. For this reason, you can record the species and bloom period of other plants in the vicinity of your garden and orchard. For more information, download the National Sustainable Agriculture Information Service Publication: [Farmscaping to Enhance Biocontrol](#). This 40-page publication is an excellent resource for farmscape planning, seed vendors, research projects, and applications. Remember to observe, take photos/notes, and build on your successes.



A carrot flower cluster showing solitary bees, flies, and an assassin bug in Prescott, Arizona (Photo by Jeff Schalau, University of Arizona).

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