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# UC Research Report

Solving Problems, Creating Opportunities



The answer to chronic field side weeds that harbor pests could be planting strips of native grasses and hedgerows of perennial shrubs chosen to attract beneficials.

In the late 1990s we planted four hedgerows on field crop farms in Yolo County to evaluate the



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both sides of the hedgerows.

For two years we monitored both beneficial and pest insects in the hedgerows and compared them to insect samples in nearby invasive weedy areas.

Throughout the duration of our study we consistently found significantly higher numbers of beneficial insects than pests in the hedgerow shrubs and native perennial grasses compared to weedy areas at each of the four sites.

We sampled both in-season and during the winter and found at all times that there were more beneficial insects in the hedgerows.

The beneficial insects we found were the typical predators in our area, including assassin bugs, lacewings, lady beetles and parasitic wasps. The

contribution of these plantings to pest and beneficial insects in adjacent crops. The hedgerows included native California drought-tolerant plants that are known to provide nectar and pollen for beneficial insects to help adults survive and reproduce, especially during times of prey scarcity. At each of the four sites, we also planted native perennial grasses along one or

pests included stinkbugs, flea beetles, lygus and cucumber beetles.

Our research results are similar to many other recent studies that have also shown enhanced natural enemy activity in diverse agricultural landscapes.

The plants in our hedgerows included buckwheat, Ceanothus, coffeeberry, coyote brush, elderberry and toyon. The native grasses in the strips included purple and nodding needlegrass, California onion grass, one-sided bluegrass and blue and creeping wildrye.

The planting was done with the help of the Yolo County Resource Conservation District.

Our next step will be to try quantifying the impact that hedgerows can have on pest control in adjacent field crops here in the Sacramento Valley this coming season in collaboration with Lora Morandin, a postdoctoral researcher from UC Berkeley.

Trees, shrubs and perennial grasses surrounding farms are enjoyable to look at because of the diverse plant and animal life they bring to our cultivated landscapes.

Hedgerows are also known to bring environmental benefits, including protecting air and water quality, serving as windbreaks and erosion control measures and enhancing biodiversity on farmlands.

We are now learning the economic value that hedgerows bring to farms in terms of enhanced pollination and biological control by beneficial insects.

As a result, planting hedgerows around farms can serve as replacement vegetation for weedy areas that encourage pests and at the same time increase beneficial insect counts on farms.

*(University of California researchers and farm advisors who want to publish their recommendations in this space can contact Bob Johnson at [BJohn1135@aol.com](mailto:BJohn1135@aol.com).)*