COOPERATIVE EXTENSION SERVICE

UNIVERSITY OF KENTUCKY
College of Agriculture, Food and Environment

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EXTENDING KNOWLEDGE *Changing Lives*

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When you support Extension, farmers adopt production practices that benefit the health of the environment and individuals.

Several insect and disease weather models are available on the UK Ag Weather web site (mobile app compatible) to indicate a need for and optimal timing of needed sprays. Reducing insecticide sprays helps to minimize impact on honey bees and other pollinators.

Extension Conducts Research and Educational Programs on Pollinators Vital to Food Production

Extension and researchers work cooperatively with other universities to address issues with honey bees and other native pollinators particularly in the areas of minimizing impact of neonicotinoid insecticides and increasing supplemental forage crops.

Over 21,000 agriculture producers adopted resource management technologies as a result of Extension programs.

- Kentucky Extension Reporting System, 2014

While the precise cause of Colony Collapse Disorder (CCD) is not completely understood, the threat to honey bees posed by CCD and cascading impacts on agriculture and environment are significant. Kentucky State University has taken the lead on honey bee research and beekeeping extension for the past twenty-five years and Eastern Kentucky University has led efforts including use of honey bees on reclaimed mine land in Eastern Kentucky and promotion of alternative hive designs.

Some of the recent and ongoing programs at the University of Kentucky College of Agriculture, Food and Environment include:

(1) Reducing unnecessary pesticide applications through Integrated Pest Management (IPM) programs. UK agronomists, horticulturists, plant pathologists, and entomologists fully support state-wide IPM programs to eliminate unnecessary pesticide applications and other agricultural inputs through appropriate use of field monitoring, cultural, and biological controls. IPM programs also improve agricultural profitability, reduce rates of pesticide resistance development, and minimize impacts on human health and environment. Reducing insecticide sprays helps to minimize impact on honey bees and other pollinators.

(2) Finding alternative pest management practices to substitute for systemic vegetable insecticides in order to minimize effects on pollinators. Cooperative studies in Kentucky, Iowa, Ohio, and Pennsylvania, which have been funded through USDA NIFA OREI, SARE, PMAP, and SCRI grants, are developing controls for cucumber beetles, squash bug, and diseases they transmit to cucurbit crops as alternatives to systemic applications of imidacloprid, a neonicotinoid insecticide that may play a role in CCD of honey bees. Row cover management, use of trap crops, strip tillage to enhance natural enemies of insect pests, and use of disease-antagonistic bacteria are under evaluation in these multistate studies. A grower advisory group has been used to provide input and to test these strategies in 'real-farm' situations.

Cover crops such as buckwheat and sweet clovers not only promote soil health but also provide benefits for pollinators and natural enemies of crop pests.

A UK recent study funded through USDA NIFA OREI surveyed commercial vegetable farms in central Kentucky throughout the squash and cantaloupe bloom period to catalog and quantify the important pollinators of these crops.

(3) Encouragement of cover crops to enhance forages for pollinators. Extension vegetable programs have been encouraging vegetable producers to select cover crops such as buckwheat and sweet clovers that not only promote soil health but also provide benefits for pollinators and natural enemies of crop pests. Natural enemies provide biological control services of crop pests and reduce the reliance on broad-spectrum insecticides which can negatively impact honey bees and other pollinators.