Our goal is to foster communication between commercial beekeepers and corn and soybean farmers, groups that have more in common than they may realize. We examine where tension exists regarding how to best protect honey bee colonies while ensuring crop production and supporting the livelihoods of both groups of producers in Minnesota. We are providing general perspectives from both sides of the main issues, but acknowledge that these perspectives may not be held by all in the commercial beekeeping or farming communities. We hope to highlight that both parties may be limited in what they can do or are willing to do, but more importantly that both parties would like to work towards a positive solution. We invite you to come to the table, understand your neighbors’ lives and livelihoods and think about how to productively support both the beekeeping and farming industries in Minnesota.

Marla Spivak, Robert Koch & Theresa Cira
Honey bees fly an average of 2 miles to locate flowers. Simply avoiding colonies during pesticide application, which reduces the risk of direct spray or drift onto the colonies, will not protect the bees that are foraging in the 2-mile radius around those hives.

Commercial beekeepers in Minnesota and many other states are reluctant to use online databases to record their colony locations for a number of reasons: Beekeepers fear that publicly listing their locations will encourage other beekeepers to place their colonies nearby, which increases competition and decreases per colony honey yields.

Foraging Range

Honey bees fly an average of 2 miles to locate flowers. Simply avoiding colonies during pesticide application, which reduces the risk of direct spray or drift onto the colonies, will not protect the bees that are foraging in the 2-mile radius around those hives.

Location

Locations that are good for bee colonies are becoming rarer due to increasing acres of corn and soybean and use of herbicides that kill flowers. Additionally, competition between beekeepers to find and use good locations is steep.

Corn does not provide any nectar, and in Minnesota, soybeans do not yield sufficient nectar for bees to make honey.

Bee Protection

Even if a beekeeper receives 24-48 hours of notice before an application, there is often nothing the beekeeper can do to protect their bees. The colonies cannot be closed up because they will suffocate. In addition, the colonies often cannot be moved because of lack of alternative locations with adequate flowers and no pesticide residues.
Selection of pesticides with reduced toxicity to bees. These pesticides might also be less toxic to natural enemies that eat pests, which is beneficial to growers.

Farmers want to avoid pesticide drift, because they understand consequences of off-target movement of some products and want to keep the pesticide they purchased in the field working against its targeted pest(s).

**TOXICITY**
Selection of pesticides with reduced toxicity to bees. These pesticides might also be less toxic to natural enemies that eat pests, which is beneficial to growers.

**TIMING OF APPLICATION**
Apply pesticides between dusk to dawn when bees are not foraging.

**DRIFT**
Avoid drift of pesticides on to flowering habitats adjacent to crop fields, because the majority of bee exposure to pesticides occurs when an insecticide or fungicide drifts off the target crop onto blooming flowers.

**FARMER PERSPECTIVE**
Farmers are generally looking to decrease additional input costs, such as pesticide applications, especially when crop prices are low. However, they do need to occasionally rely on pesticides to protect their crops. Common concerns about the considerations requested above are:

For many pest problems in row crops, pesticides with low toxicity to bees are not available, are too expensive, or are not effective against the pests.

Spraying pesticides between dusk to dawn may avoid the active period for bees, but this period of time is often most conducive for temperature inversions in the air above the crop. Temperature inversions can facilitate drift of pesticides away from fields and on to neighboring habitats (sometimes great distances from fields). Some pesticides have legal restrictions preventing application during this time period or during weather conditions typical at this time period. Furthermore, applying pesticides in the dark may pose challenges for some farm operations.

Farmers want to avoid pesticide drift, because they understand consequences of off-target movement of some products and want to keep the pesticide they purchased in the field working against its targeted pest(s).
Point Of Contention #3: AVAILABILITY OF FLOWERS IN THE AGRICULTURAL LANDSCAPE

COMMERCIAL BEEKEEPER PERSPECTIVE
Commercial beekeepers would like more food for bees on the landscape. When honey bees have access to nectar and pollen from flowers throughout the growing season, their immune systems and ability to detoxify pesticides are enhanced. Changes that are commonly requested to increase flowers include:

COVER CROP
Plant a flowering cover crop such as clover, hairy vetch, alfalfa, and buckwheat.

FLOWERING WEEDS
Leave flowering weeds/plants in ditches or other non-productive areas.

ALFALFA
Chop alfalfa after it has flowered.

FARMER PERSPECTIVE
Farmers are generally not opposed to planting or maintaining flowering plants that bees use to make food, especially when the farmers can choose where and how this will happen. Common concerns about the considerations requested above are:

Though research has shown that some cover cropping systems may provide benefits in crop production, implementation of cover cropping in Minnesota poses several challenges, such as the narrow window of time for establishing some cover crops between harvest and freeze, and cover crops delaying the drying of soil in spring, which can result in delayed planting of primary crop.

Leaving certain flowering weeds/plants in ditches or other non-productive areas may not be a concern; however, some weeds pose significant threats to crop production and allowing such individuals to flower and go to seed creates risk for nearby fields to become infested with those weeds.

The nutritional quality, such as protein content, of alfalfa changes with plant development. Chopping alfalfa after it has flowered results in reduced quality of the alfalfa as feed for livestock.

PHOTO CREDIT
Dave Hansen (corn & soybeans), James Wolfin (clover), Katie Lee (beekeeping)
Ken Ostlie (sprayer), Etayne Sears (cover crop), MNDOT (ditch), Ivar Leidus (alfalfa)

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