

Valuable Honey Bees

History indicates that honeybees have been domesticated since the time of the building of the Egyptian pyramids. These busy social insects have repeatedly demonstrated their value to society as they fly from plant to plant collecting nectar. Pollen from many plants get stuck on the bee's pollen baskets (hairs on the hind legs) and repeatedly gets rubbed off as the bees move from plant to plant. This process pollinates many flowering plants, fertilizing them and allowing them to reproduce. Without the vital work of bees, the productivity of plants would be diminished and our society would become hungry very quickly.

The honeybee's primary commercial value is as a pollinator of crops. Orchards and fields have grown larger and numbers of wild pollinators have diminished. This pollination shortage is compensated by commercial bee keepers (apiarists) who maintain bee hives and move them to priority geographic locations according to climatic conditions and plant needs. Apiarists, who generally have a major investment in their bees and equipment, harvest the excess honey as a very tasty and nutritious food for human consumption.

There is evidence that beneficial bees are often killed with insecticides that are intended to control destructive insects. A Utah State University Fact Sheet (Pesticides No. 19), developed by Dr's Howard Deer and Richard Beard, provide some excellent suggestions for pesticide applicators and bee keepers to reduce honey bee losses.

What the Pesticide Applicator Can Do

- Choose insecticides that are non hazardous to bees whenever possible. The more hazardous insecticide active ingredients include many of the organophosphates and the carbamates, and some of the synthetic pyrethroids and neonicotinoids.
- Choose insecticides that are non toxic to bees to apply on crops that are in bloom. Check the Environmental Hazards information under the Precautionary Statements section of the insecticide label to determine the hazard to bees.
- Choose the less hazardous insecticide formulations. Tests have consistently indicated that dusts are more hazardous than sprays of the same insecticide. Emulsifiable formulations usually have a shorter residual toxicity to bees than do wettable powders. Granular formulations are low in hazard to bees.
- Apply insecticides in late evening, night, or early morning while bees are not actively foraging. Evening applications are generally less hazardous to bees than early morning applications. When high temperatures cause bees to start foraging earlier or continue later than usual shift time accordingly.
- Apply insecticides when temperatures are not expected to be unusually low following treatment. Residues will remain toxic to bees for a much longer time under such conditions.

- Contact the beekeeper and ask him to remove his colonies from the area or to keep the bees confined during the application period.
- Select herbicide formulations that are the least harmful to bees for roadside and other weed control operations. Oily formulations seem to be more hazardous to bees. Spraying in late afternoon or evening will also lessen the hazard, since bees will not visit the blooms after they become curled.

What the Grower Can Do

- Mow or beat down orchard cover crops before applying sprays hazardous to bees. Treatment with 2,4-D is the best way to remove dandelion blooms. This is especially important in relation to the first cover spray on apples, which is applied during a critical foraging period when bees will fly several miles to obtain pollen and nectar from even a few blooms of dandelion, mustard, etc.
- Never spray a blooming fruit tree with any insecticide for any reason.
- When insect pests have been damaging a crop every season, use a preventative program of early season application before the insect populations increase or before foliage growth and weather conditions reduce the effectiveness of insecticides.
- Learn the pollination requirements of the crops you raise. Application of insecticides hazardous to bees on these crops, or driving beekeepers out of your area by the use of insecticides on other blossoming crops, will likely cause lower crop yields.
- Learn about the beekeeper's problems with the poisoning of bees and enter into mutually advantageous agreements with him or her to best produce bee-pollinated crops.

What the Beekeeper Can Do

- Mark colonies of bees that are next to orchards or fields that may be treated. Post your name, mailing address, email address, and phone number in printing large enough to be read at some distance in all apiaries so you can be contacted readily to move the colonies before hazardous insecticides are applied.
- Choose apiary sites that are relatively isolated from intensive insecticide applications and not normally subjected to drift.
- Keep hives out of fields treated with the more hazardous insecticides for at least 36 hours after the application. Tests have shown that about 90 percent of bee mortalities occur within 24 hours after application.
- Learn about pest control problems and programs so you can develop mutually beneficial agreements with growers concerning pollination service and prudent use of pesticides.