Emergency Response Kit Pollen Sampling Protocol

Sampling Pollen for Pesticide Residue

Part of the sampling process involves collecting pollen stored in colonies. This pollen will be analyzed for pesticide loads. Note: this analysis will not be conclusive; these results will not give you a definitive answer to the question: why are some of my bees dying. Some pesticides break down quickly so they will not be detected, others have unknown effects on bees at low doses or in combination with other pesticides. This analysis is meant to be informative, helping rule out some potential causes of loss.

*This pollen sample will be a combined (composite) sample from the healthy or declining colonies you sampled to gather your live bee and alcohol samples.

Equipment Provided

-16 wooden sampling sticks
-2 plastic pollen sampling tubes in a Ziploc bag

How to sample

The samples must be comprised of fresh pollen – not entombed pollen (pollen covered by propolis). The pollen you collect should be from dry, grainy and sometimes colorful cells usually surrounding brood frames (see Figure 1). Avoid sampling bee bread that appears moist and dull in color unless you cannot find fresh pollen.

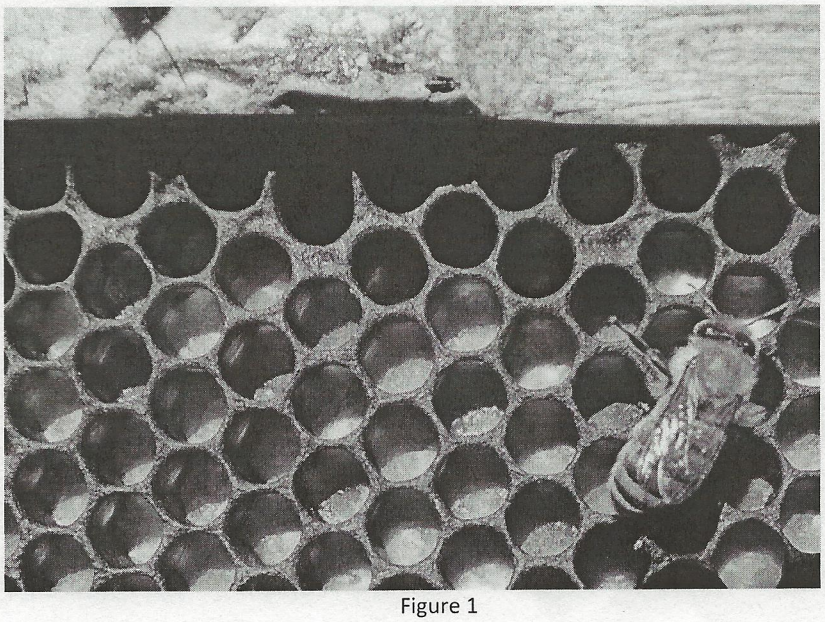

Figure 1

A minimum total of 3 grams of pollen must be collected from 8 colonies sampled within the apiary. To collect 3 grams, it is advised to sample at least 4 full cells of comb from each of the 8 colonies. One tube should be filled with pollen collected from 8 healthy colonies and 1 tube should be taken from 8 weak or crashing colonies.

After you have taken the live bee sample from the brood area, look at the frames you have pulled to see if there are any cells with fresh pollen in them. If so, take one end of a sampling stick and insert it all the way to the bottom of the cell and rotate the stick all the way around the cell scraping the pollen as you go. You may damage adjacent cells as the stick is slightly larger than a cell (Figure 2) but this is normal. Avoid collecting wax and brood cocoon.

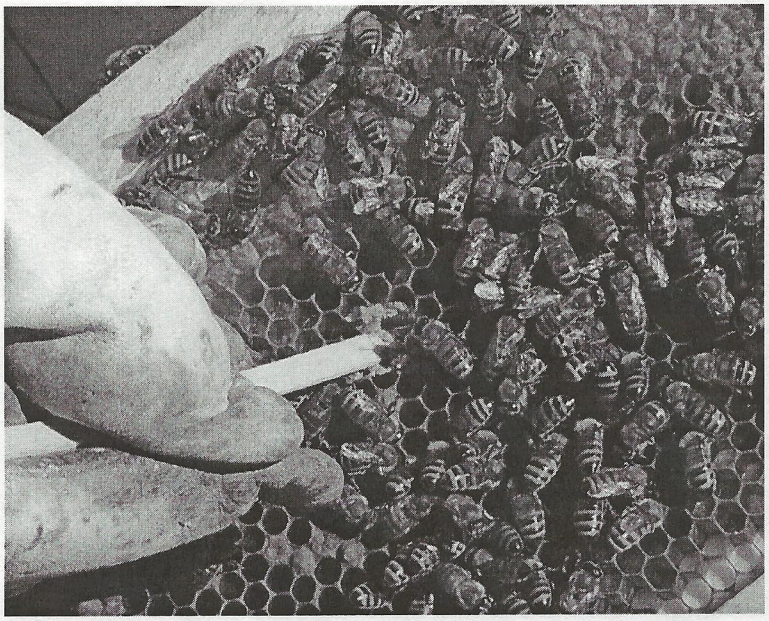

Figure 2: Opening cell wall to remove pollen

As you lift the stick from the cell, move slowly as the dry pollen is crumbly and may fall off the stick. Place the pollen in the plastic 15ml. tube by scraping the stick on the inside mouth of the tube making sure that the pollen falls into the sampling tube. Repeat in at least 4 cells per hive to gather the minimum of 3 grams of pollen.

If the frame you removed for sampling does not have pollen in it, set it aside and try to find another frame with pollen in the colony. If you cannot find any pollen in the hive, move to another hive for sampling and try to get pollen from it. If you cannot gather pollen from a particular hive, it is necessary for you to take extra pollen from the remaining hives to collect the requisite total of 3 grams. Each sampling stick will be used per each sample. The sampling sticks can be disposed of in the trash and should not be used again.

Once pollen samples have been collected from all colonies, place both tubes into a shipping box and send to the University of Maryland, College Park. Label the tubes with your **name, date and colony type**

(weak or healthy) with an identifying number for those colonies sampled. These samples do not need to be shipped on ice. The correct shipping address label has been included.

This sampling protocol is based on the USDA AHPIS National Honey Bee Survey. For additional information on this effort please visit
http://www.aphis.usda.gov/plant_health/plant_pest_info/honey_bees/survey.shtml