

LOS ANGELES UNIFIED SCHOOL DISTRICT PEST OF THE MONTH PROGRAM NO. 14

HONEY BEE SWARMS



INTRODUCTION

At this time of year (April 2004) in southern California, Los Angeles Unified School District (LAUSD) is experiencing problems with two species of insects that are swarming. These insects are: subterranean termites and honey bees. Please refer to LAUSD Pest of the Month Program No. 13 entitled Subterranean termite swarmers and Pest of the Month Program No.3 entitled Africanized honey bees for more details on these two pests.

PERTINENT INFORMATION ABOUT HONEY BEE SWARMS

From 2/27/04 through 4/2/04, LAUSD Pest Management Department received 84 work orders pertaining to swarming honey bees on District property. This averages out to 3.4 calls per school day. This number is very high for this time of year. Prior to Africanized honey bees colonizing Los Angeles County, the majority of honey bee swarming in this area generally occurred in mid spring over a 4 to 6 week period in May and June. A few swarms were again encountered in the fall but this swarming was largely insignificant. In April 1999, Los Angeles County was declared colonized by Africanized honey bees. Since that time, LAUSD has experienced a significant increase in the number of work orders regarding bee swarms. In 1998, the number of honey bee swarm work orders received by LAUSD was 149, and in 2003 the number was 687. That represents a 467% increase. The question is why is this happening? In order to answer this question, we need to explore the biology, behavior, and adaptive ecology of Africanized honey bees. First, we must understand two behavioral characteristics of Africanized honey bees that result in clusters of bees appearing on District property. These characteristics are reproductive swarming, the production of afterswarms, and absconding. These behaviors are explained below.

REPRODUCTIVE SWARMING AND AFTERSWARM PRODUCTION.

Two types of swarms originate from a honey bee colony, the prime swarm and subsequent afterswarms. The prime swarm contains a majority of workers in the nest and the old queen. Afterswarms, which issue about 10 to 15 days after the prime swarm, contain one or more virgin queens and generally a smaller number of workers. From zero to four afterswarms can issue from a nest although one to two afterswarms per colony are typical of temperate-evolved honey bees such as the European honey bees that were



present in California before the Africanized bees arrived here. Prime swarms from temperate-evolved honey bees average around 16,000 workers while first and second afterswarms have about 11,500 and 4,000 workers respectively.

Africanized honey bees may produce between 6 and 12 swarms a year, and when the swarm production of these offsprings is counted, almost 60 colonies can be produced from one original colony after a year. Tropical-evolved honey bees, such as the Africanized bee, produce more afterswarms than temperate bees each time they go through a swarming cycle. Afterswarms from the Africanized honey bee are often so small that the clusters they form are about the size of a tennis ball.



ABSCONDING

Colonies of tropical-evolved honey bees, for example Africanized honey bees, abscond much more than their temperate-evolved relatives. Absconding has been defined as the abandonment of a nest by a colony which forms a swarm and leaves to reestablishes itself in a more suitable environment. This can be caused by disturbance or lack of resources. Disturbance-induced absconding usually results from partial or total destruction of colonies by predators, destruction of combs by wax moths, fire in the near proximity, heavy wasp or bird predation at the nest, difficulty in regulating temperature due to cold or excessive sunlight, and beekeeper's manipulations. Resource-induced absconding seems to result from a scarcity of nectar, pollen, or water, and occurs primarily during the dearth season in tropical habitats. An average of 30% and up to 100% of colonies will abscond under those conditions.



CONCLUSIONS

What we are experiencing in southern California now is increased swarming rates, more production of afterswarms, and more absconding as a result of Africanized honey bees becoming established and well entrenched in the area. These behaviors explain why we are experiencing an escalating number of calls at LAUSD regarding honey bee swarms. In summary, Africanized honey bees build smaller colonies, produce more swarms and afterswarms, abscond more frequently and are feistier than the European honey bees that were present in California before they arrived here.

WHAT PLANT MANAGERS AND SITE-BASED ADMINISTRATORS NEED TO DO TO HELP WITH HONEY BEE SWARMS

Schools have a large number of children concentrated in one place. A swarm of honey bees on a school campus is a threat to the health, welfare, and safety of those who work or attend school there. **It is important to all concerned that it be clearly understood that swarming bees do not have food, combs, or brood to protect and defend and as such they are generally docile.** However, a swarm of bees on a school campus is a threat that must be taken seriously and acted upon with a sense of urgency. Plant managers are required to immediately go to the area from which swarming bees are

reported and verify, assess, and evaluate the situation **promptly**. If a clump, cluster, or group of bees, or large numbers (hundreds) of bees flying about are observed, the plant manager's first order of business is to secure the area and keep people away. Request help to do so if you feel you need it. Caution tape off the area and hang 8 ½ x 11 inch signs on the tape at intervals with the words: **Stinging bees. Keep away. Do not disturb**. Place an emergency call to LAUSD Pest Management Department regarding the honey bee problem. Give specific and clear information about the location of the bee swarm/cluster to the person in the work order call center. Leave your name and phone number as the contact person. If the swarm is located in a fenced area with gates, ensure that the gate(s) is/are locked so that no one can inadvertently enter there and place himself/herself at risk. Take whatever other precautions you deem necessary to isolate the swarm area and keep people away from there until the bees are removed or until they leave on their own volition. LAUSD Pest Management Department understands the urgency involved with honey bee swarms on school campuses and we will dispatch someone as soon as possible to the site to mitigate the problem.

BEES ARE BENEFICIAL INSECTS

Honey bees are a natural part of the environment in which we live. The little harm that honey bees may do from time to time is far outweighed by the good they do in pollinating flowers and producing honey, wax, and pollen. About one-third of our total diet comes directly or indirectly from bee-pollinated crop plants. By facilitating cross pollination, honey bees are important in maintaining genetic variability in natural plant communities which is important for adaptation to changing environments and future survival. Bees foraging on flowers in shrubs, trees, and weeds are busy bees. They are extremely focused on gathering food and they will not harm or bother anyone unless they are caught, restrained, molested, swatted, etc. Besides being against the law, it is also usually not necessary to control foraging bees. It is illegal in California to apply pesticides to plants that are in bloom on which bees are foraging or might be foraging because honey bees are considered beneficial insects.

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A swarm of bees clustered on a branch.