



Entomology Insect Information Series

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THE AFRICANIZED HONEY BEE IN THE UNITED STATES

HONEY BEES IN SOUTH CAROLINA

Honey bees are not native to North America. During the 1600's, European settlers coming to New England brought European honey bee colonies with them; hence the name European honey bees. Today honey bees are commonly seen visiting flowers to gather nectar needed to produce honey, the sweet food product associated with this insect.

In the process of visiting blossoms, honey bees pollinate cultivated crops that are valued at approximately \$10 billion, nationally. Honey bees also play an important role in pollinating plants important to wildlife.

Honey bees are important to South Carolina Agriculture. In South Carolina, cash receipts from cucumbers, watermelons, apples and cantaloupes, all of which depend on the honey bee for pollination totaled \$23 million in 1998. Many other crops grown in South Carolina depend on or benefit from honey bee pollination. In addition, the estimated annual value of honey bee pollination for vegetable and orchard crops produced by S.C. home gardeners is another \$20 million.

AFRICANIZED HONEY BEES

History - African bees were brought to tropical Brazil in 1956 by bee experts who hoped to increase honey production through a cross-breeding program with the domesticated European Honey Bee (EHB). In 1957, 26 swarms headed by African queens were released accidentally, and hybrid descendants have been moving Northward since. Hence the term "Africanized Honey Bee" (AFB) is a common name given to a race of honey bees whose genetic line emerged from the initial escape of African bees in Sao Paulo, Brazil.

The offspring of these "mismatings" defended their nests more vigorously than European bees and

swarmed more often. Therefore, they were better suited for survival in the Tropics. Researchers named them Africanized honey bees. However as a result of widely publicized stinging incidents, the name "killer bee" was used by the movie industry and the

media to describe the AHB. Sensationalized movies entitled "The Swarm", "The Savage Bees" and "The Killer Bees" were produced which have created inaccurate perceptions of the AHB.

The first known AHBs to enter the U.S. from Mexico occurred in the Rio Grande River Valley near Hidalgo, Texas on October 15, 1990. The AHBs have now spread mostly westward in the U.S. and are now found in Arizona, California, Nevada, New Mexico, and Texas. Although isolated AHB colonies have been discovered in other regions of the U.S., the colonies have been destroyed and were not the result of natural spread.

DEFENSIVE BEHAVIOR OF AFRICANIZED HONEY BEES

Unlike the docile EHB common in the United States, the AHB quickly defends its hive and will pursue intruders longer distances. The venom from an AHB sting is no more potent than the venom of a single EHB sting. Most AHB stinging incidences have involved animals, but on rare occasions humans have been attacked. Stinging attacks occur only when the AHB's nest or territory is threatened by an intruder. In some cases, the noise or vibration of tractors or motor boats has provoked the bees to sting. However, chance encounters with individual AHBs on blossoms pose on greater threat than encounters with EHBs. Even though mass stinging attacks are terrifying and could be life-threatening, they are not common. The best defense for avoiding stings from all stinging insects - not just honey bees - is common sense. If you find yourself near large numbers of honey bees, calmly and quickly move away from the area.

OTHER AFRICANIZED HONEY BEE TRAITS

In spite of its reputation, the AHB is slightly smaller than the EHB. For conclusive identification, specialized

identification techniques must be used to distinguish the AHB from the EHB already in the U.S.

Honey bees swarm when a queen bee and several thousand worker bees fly to a new nest site. AHBs produce swarms more often than EHBs. Because AHBs produce more swarms each year than EHBs, and also grow from egg to adult more quickly, AHBs can produce more adult bees faster than EHBs. This characteristic results in AHBs gaining a population advantage over EHBs, eventually decreasing the EHB population.

Occasional swarms onboard ships coming from South and Central America are a concern, but they are not major threats to the American public or to the U.S. beekeeping industry.

Because these bees are well suited for life in warm climates, there is reason to believe that the warmer states will have to contend with the establishment of AHB colonies first.

AHBs are not as selective as EHBs when choosing a nest site. In fact, AHBs frequently construct nests in exposed areas that would rarely be selected by EHBs. Consequently, states having regular cold months may not have to contend with AHBs initially; however, in the future even honey bees in northern states may show some of the AHB traits.

AHBs require pollen collected from plants as a protein source just as EHBs do. Even though the AHB pollinates plants as well as the EHB, the AHB's nature worries many U.S. beekeepers who move thousands of colonies each season for crop pollination and honey production.

UNDERSTANDING AFRICANIZED HONEY BEES

Scientists have studied the AHB in the U.S. and other countries for many years. Studies conducted in Argentina, Venezuela, French Guiana, Brazil, Mexico, and the U.S. during the past 25 years have yielded much information on the behavior and biology of the AHB.

Much has been learned about the AHB, but more research is needed. Even though articles have been published about deaths associated with the AHB, actual deaths have been few. Everyday risks such as auto accidents or lightning strikes pose a much greater risk statistically.

FUTURE IMPACT OF THE AFRICANIZED HONEY BEE

The public should stay informed about issues concerning AHBs, but should not be unduly alarmed. Any future AHB problems are not without solutions.

Honey production may decline drastically as the AHB moves into new areas, but will recover as beekeepers adjust their management practices. A

disruption in movement of bees out of AHB areas is expected initially which will effect queen and package bee producers.

However, the American Beekeeping Industry, being the most advanced in the world, will strive to manage the AHB with minimum disorder. A methodical requeening program with queens of favorable characteristics will be used most likely to maintain gentle managed bee colonies.

Increased regulatory restrictions on movement of honey bees across state lines will undoubtedly cause economic losses to migratory beekeepers and farmers who depend on honey bee movement out of AHB areas.

The greatest challenge facing the American Beekeeping Industry and U.S. Agriculture is avoiding widespread public alarm and reaction to ban or limit beekeeping because of isolated incidents associated with the AHB.

PREPARATIONS FOR ARRIVAL OF THE AFRICANIZED HONEY BEE

The South Carolina Africanized Honey Bee Advisory Committee was formed in April 1989. The committee was established due to bees potential impact on our beekeeping and livestock industries, elevated public health concerns, and essential pollination for S.C. agricultural industry. The committee consists of fourteen members selected from various state agencies and associations that could either be directly impacted or who have a potential role to play in education, health or management of the AHB once it reaches South Carolina.

The advisory committee has formulated the South Carolina Africanized Honey Bee Management Plan which incorporates the best possible strategies for dealing broadly with the problem, based on the best current technology, when it arrives in our state. The plan lists recommendations in five areas: 1) education, training and public information, 2) regulatory and quarantine, 3) public health, 4) a management plan for South Carolina Beekeepers and 5) control and identification.

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