Africanized Honey Bees

Middle East and Africa is the original native range of *A. Mellifera*.

Where is the Africanized bee?

Photo: UF
Africanized Honey Bees

How did the African bee get to the U.S?

Escape

“….perhaps the most remarkable biological event of the century.”
- Tom Rinderer
Africanized Honey Bees

Why are they so Successful?
Africanized Honey Bees

Better Adapted

Drivers of Success

Reproductive Swarming

- EHB colony swarms every 1-2 years
- AHB colony swarms 4-12X a year
- Growth rate 16 fold annually (Winston-87)
- Makes swarm management very important
Africanized Honey Bees

Drone Production

- AHB colonies produce drones earlier than EHB colonies
- AHB colonies produce proportional more drones than EHB
- AHB colonies saturate DCAs

Absconding

- Entire colony leaves
- Rate 15%-30% a year
- Travels long distances-160km
- Engine behind rapid colonization of an area
- Resource-induced and disturbance-induced absconding

AHB Genes Dominant
Africanized Honey Bees

Shorter Queen Developmental Time

<table>
<thead>
<tr>
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<th>European honey bees</th>
<th>African honey bees</th>
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<tbody>
<tr>
<td>Queen</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Worker</td>
<td>21</td>
<td>19-20</td>
</tr>
<tr>
<td>Drone</td>
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Usurpation

AHB queen always with a small group of workers
Africanized Honey Bees

More Defensive

What does all this mean?

2 month old AHB Aerial Nest
Likely To See More Open Air Nests
Africanized Honey Bees

**Meter and Valve Boxes**

EHB almost never nest underground

- Average cavity volume occupied by EHB is 40L
- Average cavity volume occupied by AHB is 22L
- Have been known to occupy less than 1L

**AHB are More Intensely Defensive**

30 yds. (m) 10 Times as Far and 10 Times as Many

**10 Times as Far and 10 Times as Many**

EHB 30 yds. (m)

AHB 300 yds. (m)
Africanized Honey Bees

**Danger Zones**

- 150 ft
- 150 yds.

**Problems Caused by AHB**

- Competition with managed colonies.
- Usurpation of EHB colonies.
- Hybridization of EHB queens by AHB drones.
- Public fear of “Killer Bees” causes decrease in bee yard locations and willingness for pollination services.
Problems with Managing Africanized Honey Bees

- AHB can be intensely defensive of the colony.
- AHB swarm excessively.
- AHB abscond if frequently disturbed.
- AHB should not be placed on pallets – hives need to be spaced at least 6-8 feet apart.

Bee suits with zipper veils and bee gloves are the best protection

Ventilated Suit
Africanized Honey Bees

Hive Manipulation Implications
- Always smoke - once AP is out
- Have cover available
- Keep keys in your car
- 30 min. before night
- Ventilated suit
- Have your phone with you

Advantages to Keeping Africanized Honey Bees
- Reduced impact from Varroa mite and Small Hive Beetle.
- Strong foragers – good pollinators.
- But some colonies are poor honey producers, so yields may be reduced.
- They have added much needed gene diversity to the population pool

Management Implications
- Recommended:
  - Buy a marked and mated queen to control genetics
Africanized Honey Bees

Management Implications

If you see an unmarked queen- requeen asap

- Larger colonies are more defensive
- Large colony less likely to accept a new queen
- Africanized colonies are more likely to reject an introduced queen.
Africanized Honey Bees

How Much of the U.S. Will They Colonize?

Future Range

Southern Distribution

As of March 2008
Africanized Honey Bees

Africanization-What can you do?

• Buy only marked Queens
• Requeen as soon as your queen is superseded/swarmed
• Keep your colonies a safe distance from neighbors and pets
• Make any possible AHB hive area bee tight
• Always use smoke and be well covered

Questions?

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