

# Re-queening Africanized bees



## Guidelines for requeening an aggressive colony

In Arizona, the feral honeybee population is strongly Africanized. Africanized honeybees (AHB) are a hybrid between European honeybees (*Apis mellifera*) and the African honeybee (*Apis mellifera scutellata*). They are difficult to distinguish morphologically, although the Africanized bees are slightly smaller. Identification is done via a wing morphology exam or a molecular PCR test. This hybrid bee has been present in Arizona since the 1990s and appears to have been able to adapt to extreme heat and drought, as well as the occasional cold spell and even snow.

One of the biggest problems with the “*scutellata* hybrids” is their defensive behavior. Not all of these hybrids are equally defensive, however, the potential for explosive aggressive behaviors is very real. Due to that unpredictability, “*scutellata* hybrid” bees are much less suitable for urban or suburban beekeeping than their European counterparts. Their aggressive behavior also increases the risk and liability for beekeepers that offer pollination services to growers.



The public in Arizona is certainly aware of the danger they present and often wants swarms and colonies exterminated, not simply collected live and removed from the property. Every summer, there are reports of workers trimming trees and palms, as well as those conducting yard maintenance being attacked, sometimes fatally, by a colony that had avoided detection.

Because of the dry Arizona climate, these bees tend to congregate where water is available causing trouble at swimming pools, at drinking troughs for cattle and horses, and even affecting wildlife at watering holes in natural environments.

The *scutellata* hybrids however, have many desirable traits: they are extremely efficient at collecting pollen and producing brood. This means they grow fast! They are hardy and resistant to many diseases and pests, and over time they have begun to store more honey to survive the winters.

Swarms of these hybrid bees can be collected and hived in a regular Langstroth box and the “bee biomass” can be converted to a more manageable colony by replacing the queen. In the southern states, managed European honeybees may become “scutellized”, when the young queen mates with drones from feral AHBs. Sometimes the personality of the hive remains calm but sometimes the bees become “hot”. Replacing the queen allows beekeepers more control over the temperament of their bees.

Always remember to wear a bee suit, gloves, and have a smoker with plenty of fuel before attempting to work with AHBs.



# Preparation

Finding the queen in a large aggressive Africanized colony can be very difficult. Splitting the colony is an option that will make re-queening simpler. Divide the adult bees and the brood (capped and open) among the 2 boxes. One box will still have the queen that needs to be replaced but finding her will be easier when there are less worker bees in the hive. The other box will be queenless. After a couple of days it will be easy to determine which colony is queenless because of the queen cells produced in one of them. The original queen is still laying on the other box and has to be eliminated. Once you find and remove that queen there will be 2 queenless colonies. It is important to repeatedly check the colonies over the next couple of days for emergency replacement queen cells that the workers will produce. Removing those queen cells before introducing the new queen is a must. Both colonies need to be “hopelessly queenless” before continuing and to do so, you need time.



## Wait 5 or 7 days ?

Africanized bees are surprisingly effective at making queen cells. Before introducing the new queen all natural queen cells need to be destroyed. Our Arizona data suggests that waiting 7 days, after removing the original queen, greatly improves your re-queening success. Check carefully to avoid missing a queen cell and allowing a Africanized queen to emerge.



## Introduction

Introducing a new queen needs to be done slowly. Our collaborators in Mexico, where Africanized bees are the norm, suggested 2 field tips that worked very well for us. Tip 1- the queen cage should be placed on an outer honey frame, possibly between the second and the third frame. This is clearly different to what is usually suggested for European honeybees where the queen is placed near the brood. The logic behind this method is that only a few bees at a time will find the queen, and the chances of rejection decrease. Tip 2- the candy can be taped, or in some way covered, so that the workers cannot release the queen immediately. This allows for more acclimatization time and increased probability of acceptance. Check the caged queen after 24 hrs. to see if the queen is being fed. If she is, remove the tape and expose the candy. If the cage has a cork, instead of a candy plug, you could open the cage then. Wait a week and check the colony for signs of egg laying.



## Options

Banking European caged queens can be done with an Africanized colony that is queenless. This has not been commonly reported but it can be done. Banking can buy time in the field if the recipient colony is not quite ready for the new queen. Make sure the candy is not exposed.

