



The Managed Mentoring Program on getting started in beekeeping.

Managed Mentoring



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Packages and Nucs

Lesson | Considerations for buying bees



What is Covered in this Lesson

Packages and Nucs Primer

Package Dynamics

How Packages are Assembled

The Quality of Package Queens and Bees

Why Queens are Rejected

Package Adaptability and Risk – Mitigating Problems

Optimal Purchasing for Nucs and Packages

Closing Thoughts on the Information



Packages and NucS

A Primer on what they are and some purchasing considerations



The Customary ways to start beekeeping

□ Packages or Nucleus Colonies

- *Conventionally these are the most common*
 - As noted earlier, a package of bees is just that, a collection of bees in a shipping box that you move into a starter kit to establish a colony.
 - The bees are often placed in a completely new hive and build it out from scratch
 - On the other hand, is a Nucleus colony which is a colony in miniature
 - A Nuc in its most common form is five-frames of bees that you move into a kit as a ready-made start.
- *You can of course start with a donated hive or a captured swarm*
 - For this lesson we will focus on the more customary way to start; packages and nucs



Going Deeper

□ What is better, a package or Nuc?

- *If cost were not a consideration, we would recommend you start with a Nucleus (**Nuc**) colony*
 - They have the benefit of a working queen, and will build into a full-sized colony quite quickly
 - They are often source from bees started in the previous season and benefit from local stock, as well as a young queen.
 - The downside is that **they cost more**, and sometimes they are hard to find.

Term

Nuc: The term Nuc is short for Nucleus. It is pronounced in a similar style to a nuclear weapon – Nuke....



Is a package a good choice?

□ Packages are perfectly viable

- *Ask a large group of beekeepers how they got their start, and most will tell you they started with package bees*
- *Packages have been a customary way to start for decades*
 - Packages are usually widely available each spring and are less costly than Nuc Colonies
- *Technically they are a perfectly suitable way to go but they do have some drawbacks.*



Package Dynamics

- **Generally good, but some known drawbacks**
 - *Slow starters*
 - New beekeepers literally pour new packages on foundation comb and the bees start from scratch to build out the honeycomb and nest.
 - This naturally takes more time to get underway when compared a Nuc
 - *Sometimes subject to Queen Problems*
 - This is not something that is spoke of, but it is pragmatic to share that package bees are subject at times to queen adoption problems
 - To understand that requires some background on how packages are prepared.



Package Assembly

□ The origin of the bees in a package

- *A package supplier sources bees from colonies in a large operation.*
 - During the assembly, bees are sourced from a collection of colonies, without a queen.
 - Queens raised by the operation are inserted into a cage and each package gets a newly reared queen.
 - The photos show a very reputable package supplier from Georgia – Gardner Apiaries



Package Queen Quality

□ Dynamic Supplied Queens

- *Most package producers rear their own queens for packages*
 - This is an incredible skill and the package producers have proven quite adept at this task. It is quite admirable, the service they provide to the beekeeping industry each year.
 - Ideally the package producer is an established operation and has demonstrated that they have a proven track record for their work and will stand behind the packages they produce.
 - The truth is many package producers were knocked in the past for the quality of the queens supplied and have taken great measures to breed high quality queens.
 - One shortcoming that cannot be controlled is the fact that queen reared in the south are not necessarily optimal for northern climates. Not much they can do about this.



Queen Quality and Acceptance

□ Your mileage may vary

- *A suitable queen will be robust and last for several seasons.*
- *Unfortunately, there are times when queens are not accepted right from the start.*
 - We have witnessed persistent instances year-on-year where a colony starts out with their queen, things get going, and then they replace her.
 - Often times you will not know the reason.
 - It is ironic to point out that most times they restart by using a larva laid by the very queen they are rejecting.



Why are Queens Rejected?

□ There are several plausible reasons

- *Most times a queen is rejected because the workers find something wrong with her or some circumstance is going on inside the colony*
 - Poor mating, Genetic problem, injury to the queen, Queen not biologically working as nature requires (not laying enough eggs, poor pheromone, and other problems), queen chilled and sperm she holds is damaged and more.
 - Rejection from bees that do not accept their new queen after being with a previous queen out of their original colony.



Package Queens are Perfectly Suitable

□ Allaying some concerns

- *While we have spent some time recognizing that there can be some problems....*
- *The fact is, researchers have focused on the quality of package queens and found that they are factually well produced.*
 - For more information on this, see the research from Dr. David Tarpy NC State University. Dr. Tarpy is lauded as one of the most progressive and informed researchers when it comes to honeybee queens and has found that sampled queens from honey package producers are quite acceptable when randomly sampled.



Adaptability and Risk

□ Package Bees and Timing

- *Most package bees are assembled for shipment to the Northern states early in the spring.*
 - It has to be recognized that there is significant pressure each year to provide a large quantity of bees to the north. This is hard to do with perfect success.
 - Sometimes the weather in the south is not conducive to building packages on a northern beekeeper's schedule and as such the packages are just not as high quality and as good as previous years.
- *Shipping methods play a factor*
 - Bees riding on a trailer for hundreds of miles may be damaged during transport if they are chilled or mistreated.



Package Queen Acceptance Technique

- A 2021 Study has provided us with this advice
 - *Supply a frame of eggs and young larva*
 - A recent study demonstrated that installing a package of bees into a hive with a single frame of eggs and young larvae resulted in a 200% increase in acceptance of the package queen
 - The net result was an 86.7% total success rate of colony installation and queen survival.

- The challenge
 - *Obviously as new beekeepers you will not have a frame to use...*

Read more at:

<https://entomology.ces.ncsu.edu/2021/04/installing-a-new-package-of-bees-heres-a-new-tip-to-improve-acceptance>



Package Shortcomings

□ Recapping Some Factors

- *Some years the weather of the package provider plays a factor in the availability and quality of the bees in the package.*
- *Sometimes the handling of the packages in shipping damages the bees*
- *These are prevalent enough to necessitate telling you that sometimes package bee installations fail, and it is not through the fault of the new beekeeper.*



Mitigating Package Problems

□ We will do our best to provide guidance

- *Most years things go ok, but sometimes problems come up*
 - Ultimately it is the responsibility of your vendor to address problems with packages that have difficulties
 - As an example, many sellers have spare queens because they know that sometimes supplied queens in packages have problems.
- *If you have problems, we will do our best provide guidance but there are no guarantees.*
 - This is why, as you might imagine, we would lean toward Nucs to start if that is an option – but assure you that packages are so common as to not be to much of a concern.

This information is shared for consideration. It is not our takeaway to say that we do not endorse packages.

Quite frankly they are necessary when considering costs, fulfilling demands by new beekeepers, and other factors.

Still, it is important to know the dynamics recognize the risks, and be prepared if problems do arise



Purchasing Guidance

□ Knowing what good looks like...

- *We want to spend a moment telling you what an optimal purchase of a Nuc or Package looks like.*
 - In the next two slides we will cover what to look for in Nuc and Package purchase



Nucleus Colony

□ Five Frame is Customary

- *Most nucs sold come with a full five-frames (sometimes it is 3 or 4)*
 - The colony should have a quality queen that has a good laying pattern and is prolifically laying eggs upon purchase.
 - You likely do not know what this means when starting, so follow the next attribute
 - The box should be full of bees and resources and the seller should disclose what they have done to address any varroa mite concerns.
 - All five of the frames should have honeycomb built out, and the box should be full of bees
 - Ideally the seller will tell you the background of the hive and it is best if it had overwintered (which draws a premium price in many areas)



Package Bees

There are approximately 3300 bees to a pound and 10,000 bees in a package

□ A full 3-Pound Package

- *Most colonies are sold after being physically weight on a scale*
 - 3-pounds of bees equates to around 10,000 total bees. The colony will increase to 30,000+.
- *The carrier box should have been protected during transport*
 - It should show no signs of damage and the bees inside should be alive
 - It is customary for some dead bees to be on the floor of the package. Only a handful though, not an excessive amount.
- *The seller should provide some information and guidance*
 - Most sellers will tell you where the bees came from (state of origin) and provide handling instructions as well as some guidance for how to install them into your equipment



Closing thoughts...

□ Uncertainty

- *We recognize that it is not very comfortable to consider what was covered*
 - It is likely disconcerting to discover the reality of risk when spending money and investing time in the quest to be a beekeeper starts out with notions of failure due to circumstances you cannot control.
 - The truth is sometimes hives fail, and you have to restart. The reality however is we do our best to support our beekeepers and 99% of the time we get them through.
 - In a moment of full disclosure, we would rather share the risk out loud, and have you informed of potential problems so you can recognize them and be proactive.
 - Take a moment to imagine if you were doing this on your own; what would happen if you happen to encounter the rare but plausible problems discussed.



Closing Comments

- **Customary Close**
 - Where we stand, where we are going...
 - *This lesson closes out the dynamics of purchasing bees in packages or nucs.*
 - *Our next topics cover the overall aspect of bring bees into your location*
 - Learning the important concept that **Beekeeping is Local**
 - The background of **Choosing a Style** of beekeeping
 - The obligation to be **Be a Good Neighbor**
 - A primer for **Adherence to Regulations**



Q&A

- **What Questions did we not anticipate?**
 - If you have feedback, you can leave a constructive comment; but be nice.
 - You could also send an email to comments@managedmentoring.com
 - *Please refer to this video in the subject so we know what the reference is.*

