

Northeast Beekeeping School

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Maysville Community and Technical College, Maysville, KY

Class Topic: Making Nucs to Increase Your Hive Numbers

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Why is creating nucs important:

- Need 1 Nuc for every 2 hives, you should try and maintain minimal 3 hives to help sustain your hives
- Prevent swarming
- Increase your number of hives
- Raise extra queens for queenless hive or re-queening unproductive hives
- Queen introduction
- Boost weak hives with brood or honey from nucs
- Nucs pull foundation really well, make extra comb to use in other hives
- Overwinter Nucs to replace winter losses

What is a Nuc:

- Baby Hive
- 3-5 frames normally, can use a separate box or full size box divided into sections.
- 5 frame nuc the most common
 - This can be a single 5 frame nuc box or a full size hive box split into two 5 frame areas

Today we are going to discuss creating the 5 frame nuc.

- Most common and easiest to manage
- How to create them
- How to manage them
- How to install nuc in full size boxes
- Equipment used

When do we create nucs:

- Depends on your goal
- Prevent swarming (April – May)
 - Depends on hive buildup and strength
- Create to increase your hive numbers in the summer
 - May - June (purchase queen or raise queen from eggs or queen cell)
- Create to overwinter against winter loss
 - July – early August

- Let the nuc raise a queen from your best hive, never let nuc raise a queen from a poor hive
- You can add a purchased queen or queen cell
 - Tend to get better quality queens from queen producers later in the fall

Prevent swarming: (April 1- mid May) varies per your location

- Hive must be built up strong, right on edge of swarming
- Must have drones in purple eyed stage for mating (Usually you have drone brood by April 1st)
- Reverse hive if necessary (need bees in both boxes)
- Make sure you check for swarm cells, swarm cells located on bottoms of frames
- Create nuc midday when foragers are out of the hive
- Use minimal smoke when creating nucs, use 1-1 sugar syrup spray and spray bees
- Remove existing queen along with 2 frames brood, eggs and sealed brood and adhering bees
 - Queen usually on frames with eggs
 - Queen usually not on honey frames
 - Helps to have marked queens
- Add frame of honey, frame of comb if possible and or frame foundation.
- Place frame of comb or foundation between brood frames, bees don't like brood separated
 - Queen can start laying in the comb provided
 - Bees will pull foundation quickly for queen to lay in
- Add 1 or 2 shakes of nurse bees to nuc.
 - Nurse bees have never been out of hive, won't fly back to parent hive
 - Nurse bees located on frames of eggs and brood
 - Can use nurse bees from other hives, they won't fight
 - Check in 2-3 days, may need to add additional nurse bees
- Feed 1:1 syrup and pollen patties
- Recommend to move nuc 3 miles from parent hive to avoid forager bees from returning to parent hive, **for most of us this isn't practical.**
 - To counter this, use only nurse bees and screen front entrance for 24 hours
 - Use a very small entrance, 1-2 bee size. Adjust as hive become stronger but keep entrance small, 5-6 bees
 - Use robber screen on entrance
 - Robber bees tend to land on front of hive and then walk down to the entrance
- Add foundation back to parent hive
 - Forces bees to work and create comb.
- Re-queen parent hive with a purchased queen or allow hive to raise it's own queen from eggs
 - Make sure parent hive has a couple frames of eggs

Creating nuc from frame of eggs:

- May to June is best time, can do earlier if you have plenty drones for virgin queens to mate with.
- Create queens from only your best producing hives, never from poor hives!!!!
 - Use good honey producing queens that you have overwintered
 - You are wanting queens with good genetics
- Feed the hive you plan to use to create nuc's really good 1:1 sugar syrup and protein patties for 2-3 weeks
- Create nuc midday when foragers are out of the hive

- Use minimal smoke when creating nucs, use 1-1 sugar syrup spray and spray bees
- Make sure you find the queen and leave her in the parent hive.
- Use 1 frame eggs, 1 frame brood, and adhering bees, 1 frame pollen and honey, 2 frames foundation
- Add 2-3 shakes of nurse bees to nuc.
 - You need tons of nurse bees to create quality queens
 - Nurse bees have never been out of hive, won't fly back to parent hive
 - Nurse bees located on frames of eggs and brood
 - Can use nurse bees from other hives, they won't fight
 - Check in 2-3 days, may need to add additional nurse bees
- Feed 1:1 syrup and pollen patties
- Recommend to move nuc 3 miles from parent hive to avoid forager bees from returning to parent hive, **for most of us this isn't practical.**
 - To counter this, use only nurse bees and screen front entrance for 48 hours
 - Use a very small entrance, 1-2 bee size. Adjust as hive become stronger but keep entrance small, 5-6 bees
 - Use robber screen on entrance
 - Robber bees tend to land on front of hive and then walk down to the entrance
- Add foundation back to parent hive
 - Forces bees to work and create comb
- Check in 5 days and see if you have queen cells forming
 - If any cells are capped, destroy them, they haven't been fed adequate royal jelly and will be poor queens.
 - Check day 10 and leave only the 2 highest quality (largest and peanut texture) cells to hatch
 - You want large and stippled cells, remove smaller developing cells
- Check on day 28 from nuc creation and see if queen is laying
- Allow queen to lay 21 days before moving to new hive
 - You want to see her first capped brood cycle
 - The queen reaches pheromone maturity on day 24 after hatching

If you discover swarm cells during inspection of a hive:

- You must split the hive up ASAP
- Once swarm cells started you can't stop hive from swarming
- Swarm cells make some of the highest quality queens
- Use frame with 1-2 swarm cells in each nuc
 - Pick the biggest and most stippled cells and destroy the rest
- If you have several good cells you can cut them off and add to another nuc
 - Cut out 2 inch square around cell and make a 2 inch indentation on frame and stick cell on frame with toothpicks

Creating nuc with purchased queen or queen cell:

- Use 2 frames sealed brood, 1 frame pollen and honey, 2 frames foundation
 - You don't want eggs, can't create queen cells without eggs
 - If eggs present, bees may create queen cells and reject caged queen
- Add 2-3 shakes of nurse bees to nuc

- screen front entrance for 48 hours
 - Wait 24 hours before adding new queen or queen cell This period gets rid of the old queen pheromone
 - Check for queen cells and remove if any are found
- Use a very small entrance, 1-2 bee size. Adjust as hive become stronger but keep entrance small, 5-6 bees
- If introducing queen in queen cage, use painter tape over candy to slow queen release
 - Introducing queen with push-in cage is best method for acceptance
- Check in 5 days to see if queen released, if not release her
- Check in 10 days and see if queen laying if you used purchased queen
- Check in 14 days to see if queen laying if you used a queen cell

Nuc management:

- Nuc's expand quickly, they love to build up, chimney effect
- Feed protein patties and 1:1 syrup (keep them fed well)
- Use small entrances and robber screens
- Add second box of foundation when necessary
 - Move a frame of brood up into second box, forces bees to occupy that box to care for the brood
 - Place frame foundation in between brood frames in bottom box, bees will pull foundation quickly
 - When second box is full you can create another nuc or move the double nuc into a full 10 frame box or add a third nuc box
 - If nuc is super strong, you can remove frames of brood and bees to boost other colonies
- You can overwinter a nuc in two box hive

Moving nuc into a full size box:

- Setup full size hive on bottom board, etc.
- Assuming you now have 3 frames of brood and 2 frames of honey in your nuc box, place them in the full size box as follows left to right

foundation, honey, foundation, brood, brood, brood, foundation, honey, foundation, foundation

- Feed 1:1 sugar syrup and protein patties

Overwinter Nucs to replace any Winter losses: