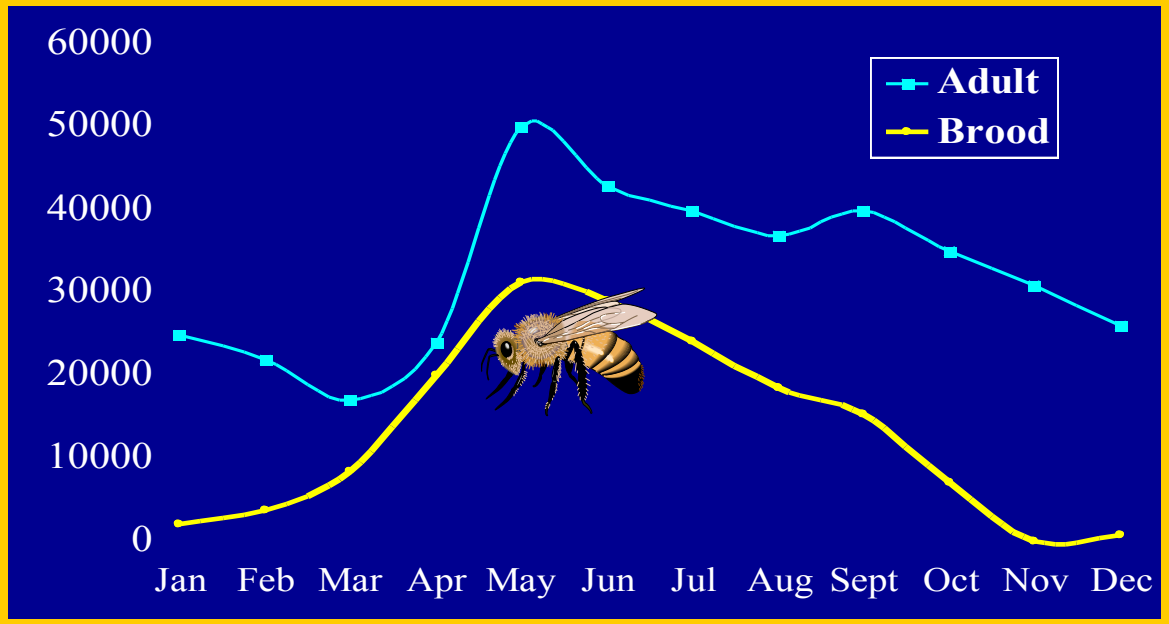
Monthly Management

What do I Need to Prioritize and When?

Beginning Beekeeping

Webb Flowers, Carroll County VA Extension

January 26, 2010



January

- Long, cold nights are ideal for talking and reading about your bees.
- Start the New Year off by attending a beekeeper meeting in your area. Read beekeeping books and magazines. Review successes and failures of past year. Make plans for any needed changes in management and schedule.
- Assemble and repair beekeeping equipment.
- Hope for a January thaw so the bees have a cleansing flight.
- Monitor weights and amount of honey in hives.

February

- Maples, willows, and other early season plants are in bloom.
- Make a brief check of wintering colonies for honey and brood (laying queen).
- Reposition frames with honey and pollen placing them near the brood cluster.
- First pollen should become available. If low on pollen add a pollen supplement or substitute. Feed bees 1:1 sugar/water syrup on warmer days to minimize winter mortality. If low on honey stores feed 2:1 sugar/water syrup. In late February stimulate brood production by feeding 1:2 sugar/water syrup.

Late Winter / Early Spring Exam

(Early February)

Quick Check of Colony Condition

1) **Colony alive?**
2) **What is the amount of food stores?**

If Colony has died.

1) **Seal up and remove to prevent robbing and possible disease spread**

Primary Goals in Beekeeping

- Obtain a large population of bees that coincides with the major nectar flows
- Utilize the population to the greatest advantage for honey production or pollination
- Maintain healthy colonies, high probability of survival

Overview of the Yearly Management Cycle

- Late Winter - Early Spring
  - insure colony survival
- Spring
  - encourage colony build-up, prevent swarming
- Early to Mid Summer
  - super colonies for honey production, remove and extract honey
- Late Summer
  - queen replacement, disease and mite treatment
- Fall
  - colony preparations for wintering

Annual Cycle of the Honey Bee Colony

Successful management of honey bee colonies requires an understanding of the annual cycle.

The cycle varies in different areas of the country, because of environmental factors and plant diversity.

Differences are reflected in:

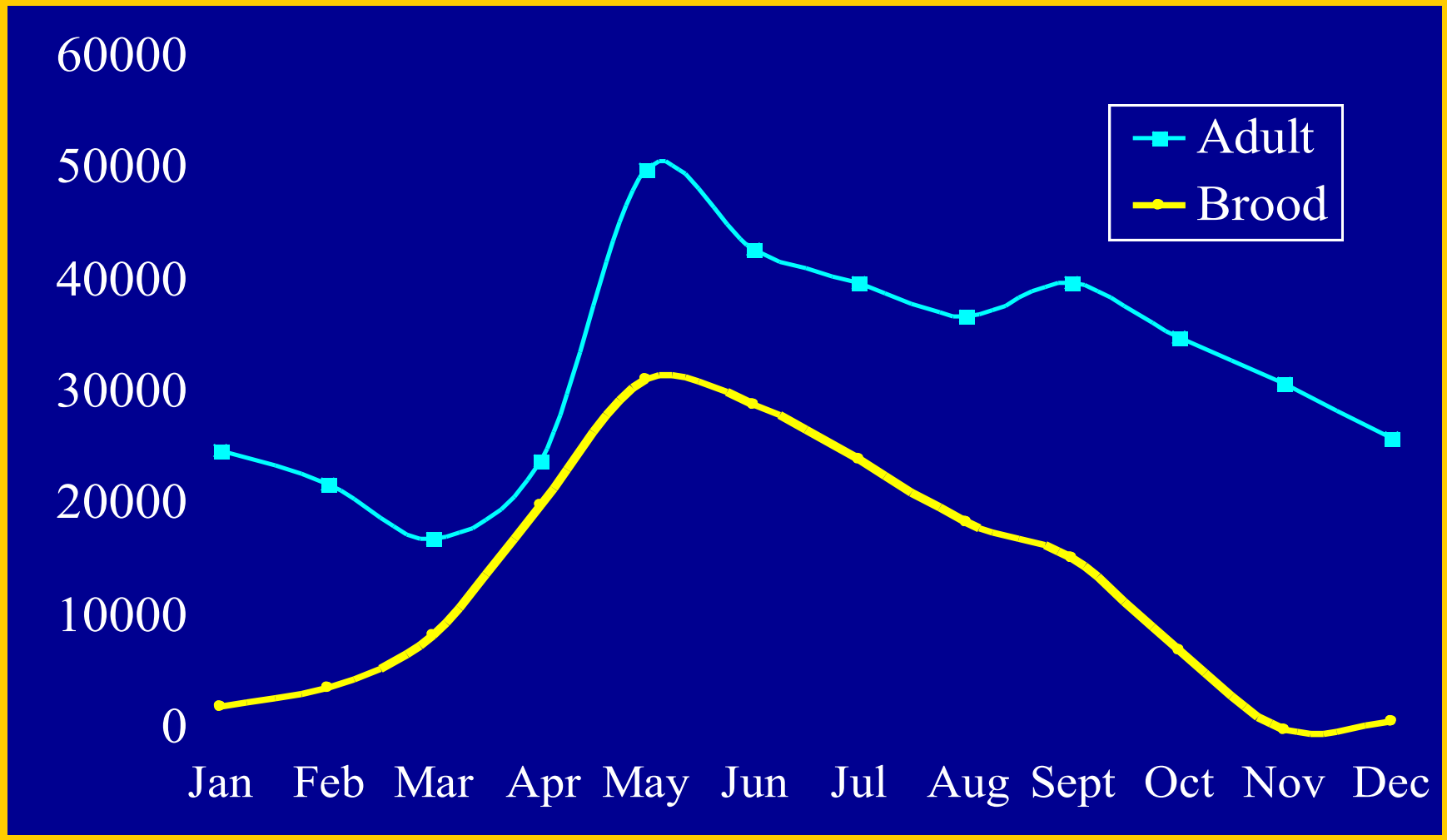
a) population size

b) time of peak population

c) brood production

Annual Cycle of a Honey Bee Colony

Data collected in Blacksburg Virginia



March

- Dandelion is in bloom. Check colonies on a warm, sunny day.
- Check for old and rotting wood, frames in disrepair or with old comb, food reserves, and brood pattern and size.
- If food reserves are short feed 1:1 sugar/water syrup.

Colonies that need feeding should be monitored and fed continually as needed.

- Clean bottom boards.
- Mid to late March replace solid bottom board with screen bottom board or remove cover from screen.
- Reverse hive boxes to position brood in lower box.
- Treat soil for small hive beetle (SHB) where infestations are found.

Spring Management

Objectives:

1) Ensure survival of colonies
2) Encourage colony growth
3) Prevent swarming

Second Spring Exam

The second exam should be made during the last week of March.

This exam should involve:

1) Brood nest inspection
   - queen evaluation, disease check (American foulbrood, stress diseases)
2) Initiation of swarm prevention practices

April

- Fruit trees, redbud, and mustards are in bloom.
- Examine the colony as the weather permits. Continue to monitor food reserves and brood development.
- Check for brood diseases and monitor mite levels. Replace queens two or more years of age.
- Begin dusting with terramycin if American foulbrood (AFB) or European foulbrood

April Continued

- (EFB) is present. Repeat reversal for hive boxes of strong colonies and begin
- checking for queen cells. Install package bees and feed light syrup. Make splits
- with brood and honey frames from multiple hives to increase hive numbers. Attend
- Virginia State Beekeepers Association Spring Meeting.

Early Spring Exams are Important

Food supply is critical in the spring

Most colonies starve in late winter or early spring (February and March)

Colonies should have a minimum of 3-4 full depth frames of honey

Feeding colonies in thespring:

- **Feed 1:1 sugar syrup**
- **Feed pollen supplement to help increase brood rearing**
- **Now recommend feeding in late January**

First Spring Exam

The time of the first real colony exam can vary, but generally should be made around the 1st or 2nd week of March.

Functions:

1) **Evaluation of food condition**
2) **Check on queen condition**
3) **Evaluation of strength**
4) **Check equipment, clean bottom board**

May

- Clover, tulip poplar, and locust trees are in bloom.
- Make final reversal of brood chambers or implement swarm prevention as needed.
- Inspect brood pattern for disease and parasites.
- Add first super and check if additional supers are needed in mid to late month.

May Continued

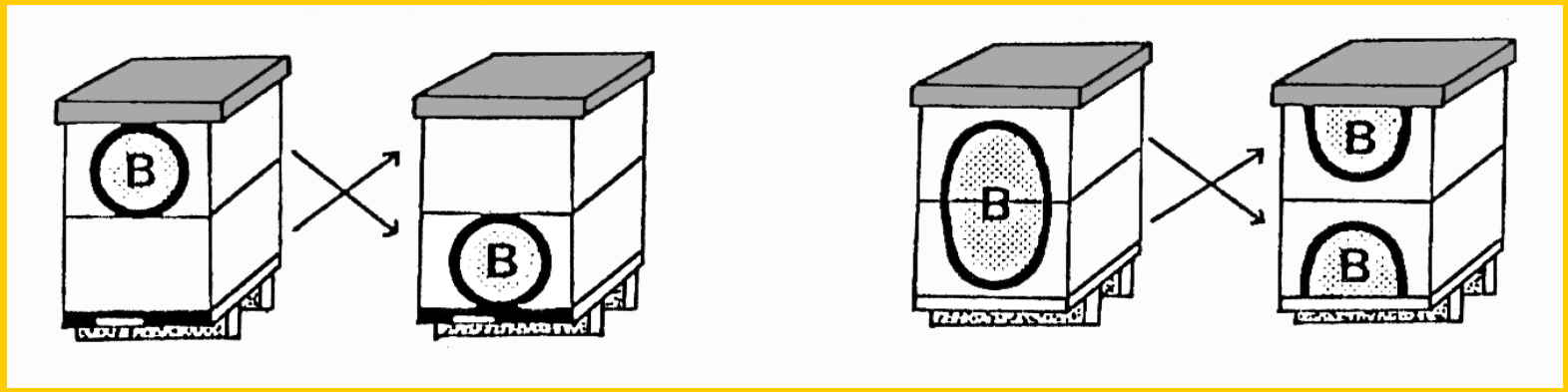
- Remove any antibiotics or pesticides from colonies about to produce surplus honey.
- Continue feeding and manipulate package bee colonies to aid in comb construction.
- Add a second brood chamber to package colonies.

The Problem of Swarming

- Major problem in the spring
  - 10 - 40% of colonies in an unattended apiary will swarm
- Do not have perfect techniques to prevent swarming
- Do not know the specific causes of swarming
  - Important factors include: crowding, age of the queen

Swarm Prevention Techniques

<u>Reversing</u>: a technique that involves switching the position of the hives bodies, allowing for upward expansion of the colony. Reversing needs to done at least two times.



Late March - Early April Reversal

Mid to Late April Reversal

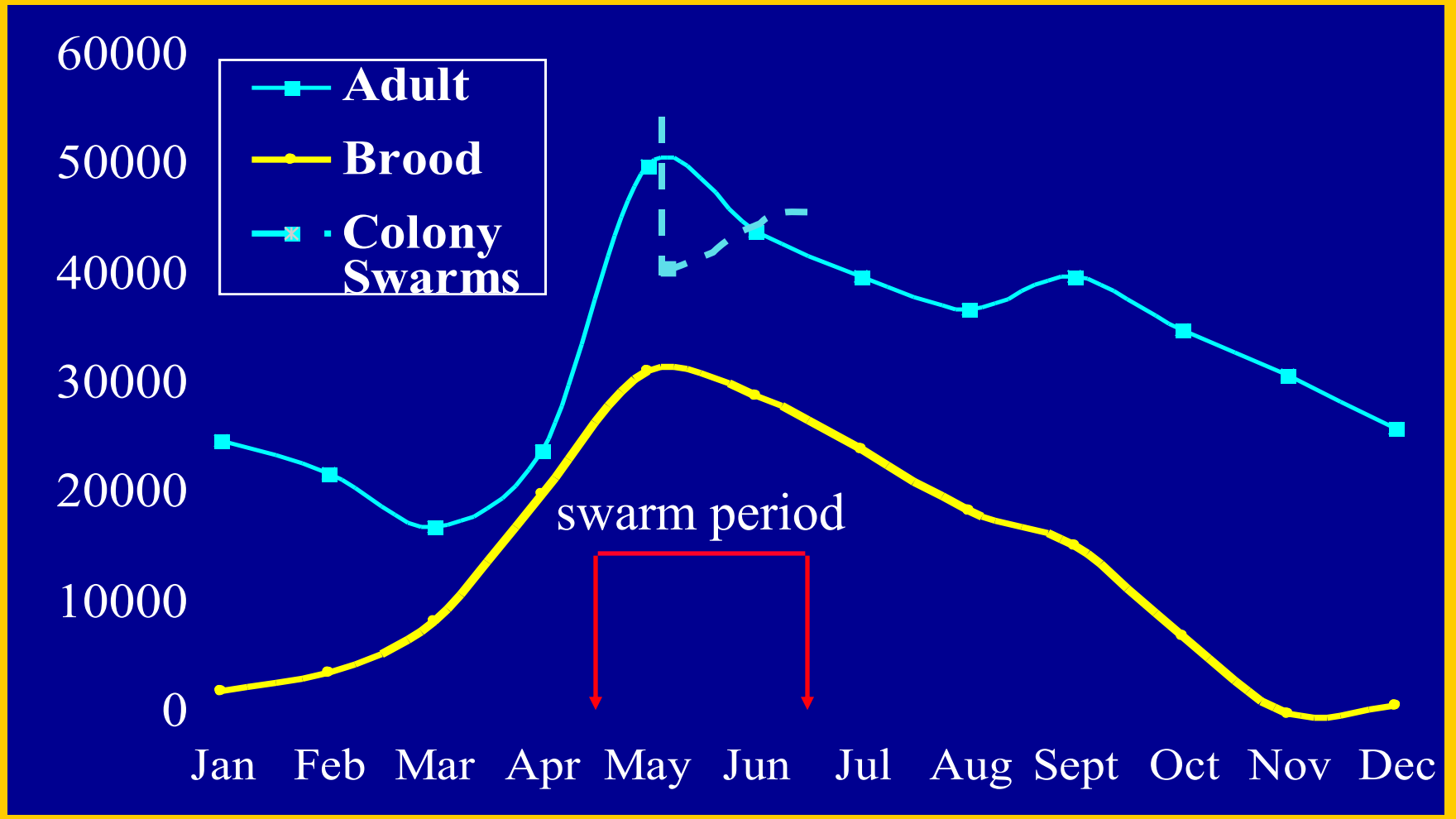
How Much Space is Needed?

Very strong colonies may require additional space, especially after second reversal.

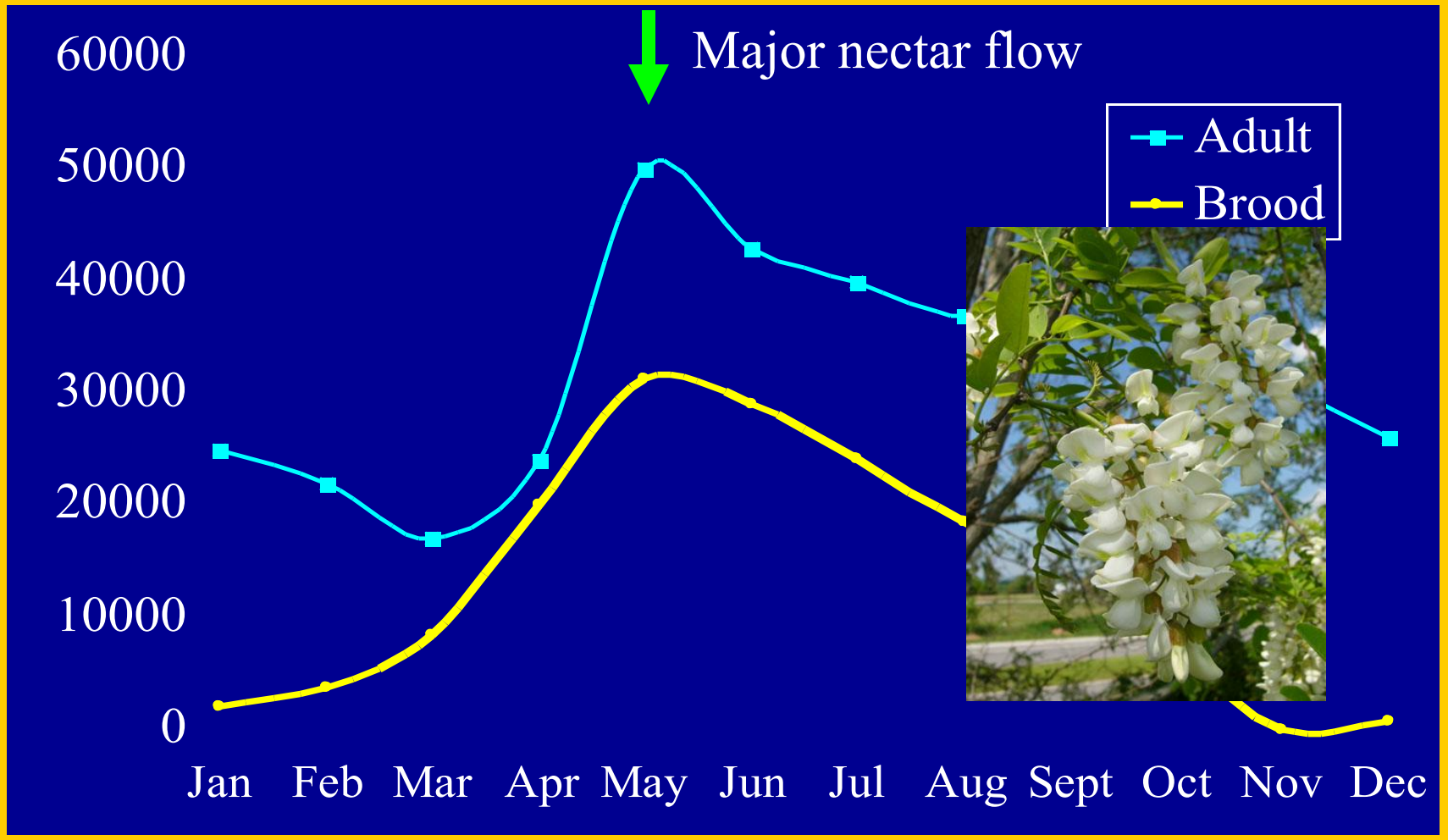
If needed, add a third hive body (medium or full depth).

Remember goal is to build strong hives with as large a population as possible.

Annual Cycle of a Honey Bee Colony
Effects of Swarming



Annual Cycle of a Honey Bee Colony
Nectar Flows and Summer Management



Summer Management

- Honey production
- Disease / parasite prevention and control
- Queen management

Supering Colonies

1. Bees need space for nectar storage
2. Provide place for bees to congregate
3. Empty space stimulates nectar gathering
4. Potential problem - bees may use supers for brood: avoid by using a queen excluder

June

- Basswood, sourwood, and sumac are in bloom.
- Add supers to colonies as needed.
- Continue looking for queen cells until nectar flow slackens.
- Minimize disturbance of hives during honey flows.
- Requeen any captured swarms.

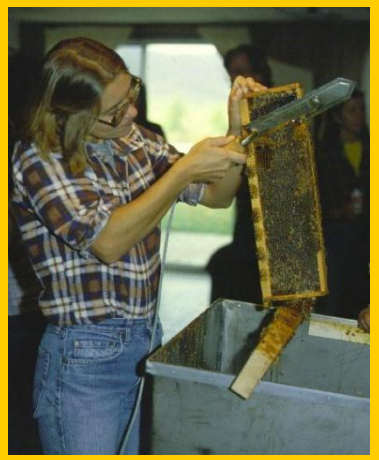
July

- Thistle, knapweed, and blueweed are in bloom.
- Add supers as needed.
- Harvest and extract honey when nectar flow slows. Colonies should be left with at least 1 full
super of honey at harvest time.
- Attend Eastern Apiculture Society or Heartland Apicultural Society Meeting.

Use of the Queen Excluder

Removal and Extraction of Honey

- Remove honey supers from hives after removing bees
- Extraction and processing of honey



Uncapping honey frame

Extraction

Course straining

Fine straining

Summer Management

- Honey production
- Disease / parasite prevention and control
- Queen management

August

- Alfalfa, buckwheat, and goldenrod are in bloom.
- Check mite levels in apiary(s).
- Begin Varroa mite treatment as needed once supers are removed.
- Order or begin raising queens for Fall replacement.
- Inspect colonies for honey and pollen reserves, queen condition, brood production, worker population, and disease occurrence.

August Continued

- Feed if low on food stores.
- Protect empty supers in storage and on weak hives against wax moth. Paradichlorobenzene (PDB) or other approved method of control may be used on stored supers. Freezing frames and woodenware will control both waxmoth and SHB.
- Show off your bees, honey, and hive products at the county fair.

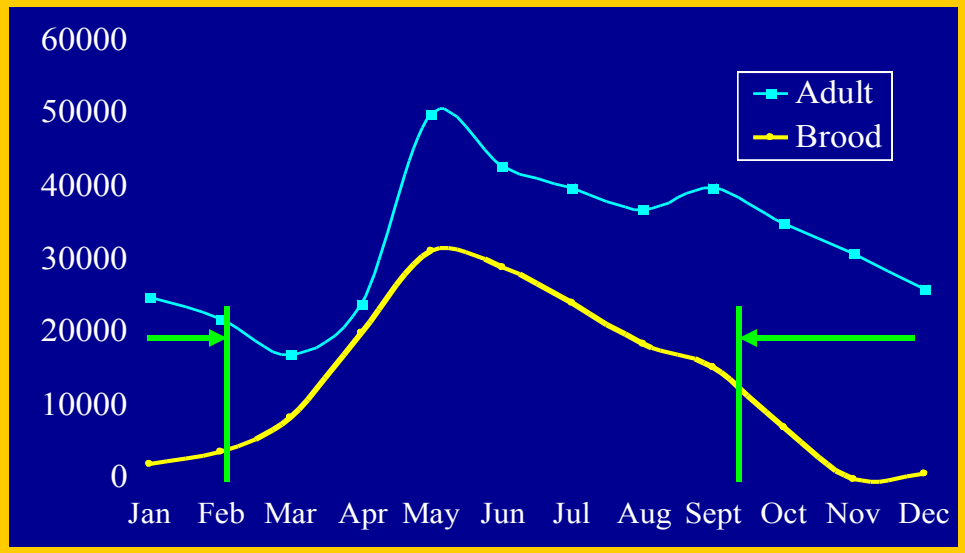
September

- Asters and ironweed are in bloom.
- Remove all excess supers. Unite weak hives.
- Requeen hives with queens older then two years of age.
- Extract supers or frames of honey or store for spring feeding. Honey in extracted and partially filled supers can be fed back to bees by placing them above the inner cover.

September Continued

- Do not let bees rob from neighboring hives.
- Feed syrup or pollen supplement if needed.
- Continue wax moth control for stored equipment.
- Enter honey and other hive products in State Fair.

Fall and Winter Management of Honey Bee Colonies



October

- First frosts can occur towards the end of the month.
- Combine any remaining weak

and queenless hives.

- Place reducer in hive entrance.
- Place spacer under inner cover and offset brood chamber boxes to provide ventilation and reduce moisture buildup in Winter.

October Continued

- Medicate as needed for Nosema after supers are removed.
- Remove Varroa mite control if colonies were treated. Feed heavy syrup if hive has less than 60 pounds of honey (two full supers or one deep box).
- Sell honey at craft fairs, fall festivals, etc.

Importance of Good Management in the Fall and Winter

- Colony survival
  - » mistakes are costly; average losses were 10 - 20%, now 40 - 60%
  - » winter hazardous period for honey bee colony
- Better prepared colonies improve productivity the following year

November

- One final inspection. Brood area should be in lower box(s) and small in size.
- Workers will begin clustering around queen and brood on colder nights.
- Cover screen bottom board or replace with solid bottom board.
- Order replacement queens, nucs, and package bees for next year.
- Attend Virginia State Beekeepers Association Fall Meeting.

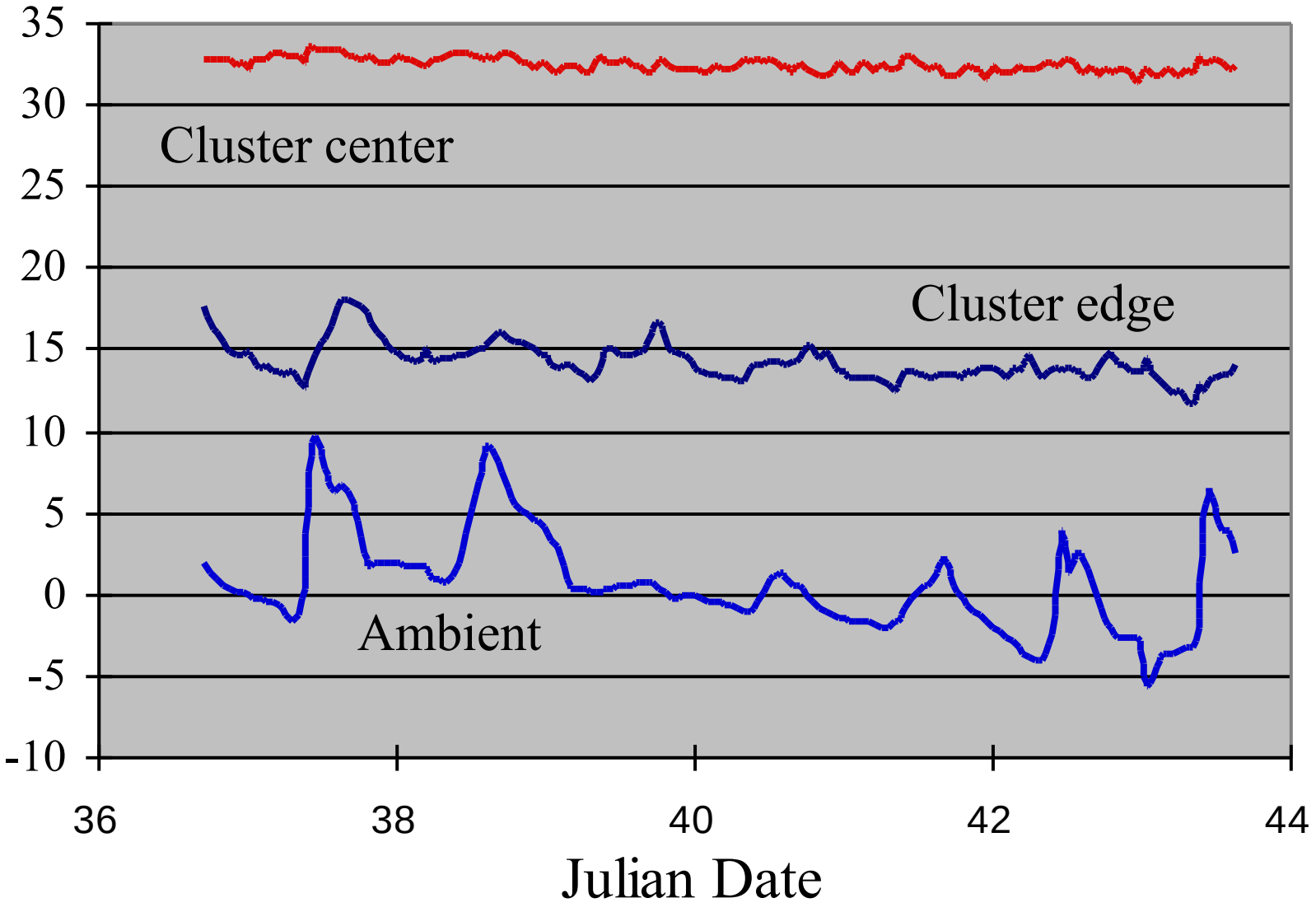
December

- Sell honey and candles at Holiday shows, prepare as holiday gifts, etc.
- Begin planning for next year.
- Look for new apiary sites.
- Renew old pollination contracts and look for new ones. Leave the bees alone!!
- Take inventory of supplies and order equipment.
- Make sure the family knows your bee needs for Christmas.

Honey Bee Colony in Winter Adaptations for Survival

- Store food (honey)
- Increased lifespan: winter bees live 3-7 months (summer bees live 30 - 35 days)
- Suspend broodrearing
- Form winter cluster to control temperature (Do not heat the hive - only the cluster; temperatures - early winter 76-80ºF, late winter > 90ºF)

Temperatures in the Winter Hive



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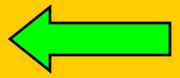
- Form winter cluster to control temperature (Do not heat the hive - only the cluster; temperatures - early winter 76-80ºF, late winter > 90ºF)
- Utilize periodic cleansing flights 

Cleansing Flights

Cleansing flights during the winter. Dead bees are commonly found on snow after a warm day with flight activity.

Fall and Winter Management

- **Early fall management - primary concern is colony strength**
- **Late fall / early winter - concern is for proper preparations of each colony for winter**

Colony Preparations for Winter

1. Every colony must have a good queen
2. Colonies must be protected from climatic extremes
   - selection of a good overwintering site
   - protection of individual hives

Entrance reducers - good winter practice

Upper entrances increase air circulation, allow moisture escape

Should We Insulate Hives?

- Honey bees cluster to maintain temperature; cluster provides the insulation
- Insulation is designed to slow temperature changes
- Insulating a hive can have a negative effect - holds in cold temperatures and prevents the hive from warming
- Warming allows for cleansing flights and cluster shifts for feeding

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3. Every colony must have adequate honey (55 - 60 lbs) and pollen stores

Winter Food Needs

- Storage of honey in excess of summer needs is a key factor in wintering success
  - Colony requires 50-60 pounds of honey

- Colonies also require pollen stores for successful wintering
  - Minimum of 3 - 5 frames of pollen are required
  - Pollen provides protein for winter brood rearing

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4. Every colony must be maintained in a disease and parasite free condition

Varroa mites

Questions?