

RESOURCE MANAGEMENT

Hive Development, Day To Day Organization, Added Value

Larry Connor

When I was assigned the topic of Resource Utilization for a presentation at a recent meeting, because I am not as well versed in the business area as I would like, I had to do a little research on the topic, and try to figure out what the group wanted me to address. Then I applied some of these comments to bees and beekeeping activities. Turns out that it's a valuable way to look at colony and apiary management.

What is Resource Management?

Here are three views of resource management. First, a Wikipedia article focused on the way organizations are structured. Second, a view from the Small Business Administration with an emphasis on obtaining financial aid, and third, the marketing perspective for a private firm that will manage your timberlands and investments related to them. This seems important for the correlation with another agricultural-related business such as beekeeping:

"In organizational studies, **resource management** is the efficient and effective deployment of an organization's resources when they are needed. Such resources may include financial resources, inventory, human skills, production resources, or information technology (IT)" (*Wikipedia*).

"Resource management is how you handle the day to day affairs of your business, including how you pay your debts, collect on debts owed to you, deliver your service or product to customers, and manage your inventory. Your

proven ability to manage the resources of your business is a prime consideration when a lender is determining whether or not to approve a loan. There are a few areas in which you will need to appear strong in order to make a favorable impression on a prospective lender" (*U.S. Small Business Administration*).

"Founded in 1950, RMS is a private timberland investment firm serving pension funds, endowments, foundations and family offices. For over 60 years we have been creating value for timberland owners and investors through the disciplined integration of forestry and finance. Our clients benefit from an accumulation of knowledge and experience that span decades, numerous business cycles and dramatic changes in forest management and investments. Throughout this history our commitment to innovation and professional excellence has remained constant" (*RMS*).

Pulling from these viewpoints, I edited and rearranged key points so they would be of use to beekeepers of all sizes and stripes

- 1. The efficient and effective deployment of your bee hives.**
- 2. How you handle the day-to-day affairs of your colonies.**
- 3. Creating value in terms of bees, honey, pollination, and other products.**

Each point becomes relevant to beekeepers when we look at how this involves our use of the time and resources we have for working our bees. We will review them point-by-point.

The efficient and effective deployment of your beehives.

Perhaps the most important issue for many new beekeepers, after a long period of chanting a mantra of "I want bees, I must get bees," is to set a goal for their beekeeping activity. Many new beekeepers say they wanted to start a bee colony to "help the environment" or "pollinate the garden" or "produce the honey the family eats (or drinks as mead)." But there is an advantage of setting other goals, such as:

Earn \$500 per hive per year before paying expenses.

- Produce one nucleus hive per colony per year and sell for \$150 each.
- Assist the bees to produce 50 pounds of surplus honey that we can sell for \$7/pound at the local market/community sale.

Develop a seasonal plan of work, so we know what has to be done each month.

- There are seasons for equipment purchase and assembly,



Student holding a frame of honey from a nucleus colony.

reading, attending meetings and conferences, time to obtain and build up colonies, time to move bees for pollination and time to super and harvest honey. There must be time to sell honey, and a place to do it. A scheduled time off is a noble goal that few beekeepers successfully achieve. They think that the expression *busy as a bee* should also apply to *busy as a beekeeper!*

Reduce colony losses

- Study colony losses and determine which factors have been critical to the death of a colony. More than one may be at fault:

- Queen problems (see Box)
- Varroa population explosion
- Poor nutrition and starvation
- Disease (see Box)
- Exposure to pesticides

- Develop a plan of action to correct each of these conditions:

Keep nucleus colonies on hand with young, healthy, mite-tolerant queens.

Develop a feeding program when there is a dearth of food

- Leave honey on the hive when there is a question of adequate food

- Use a disease control measure or disease tolerant stock

- Move the bees to minimize pesticide exposure.

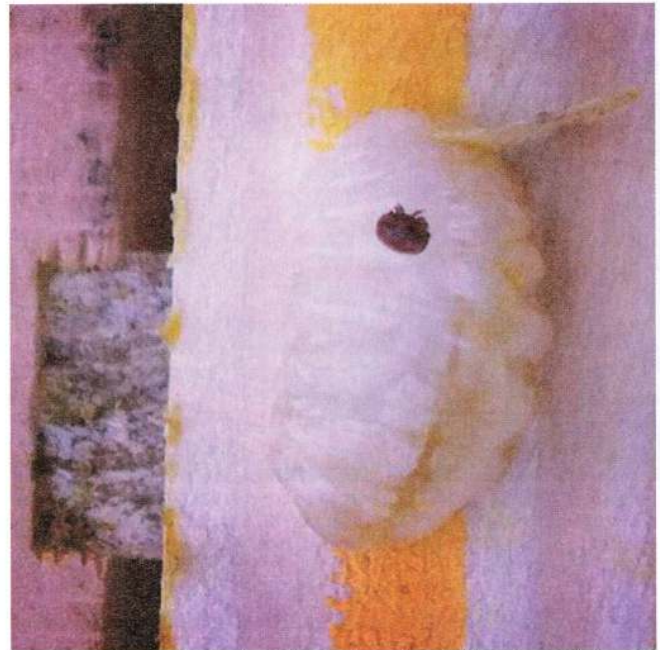
How you handle the day-to-day affairs of your colonies.

Many beekeepers are extremely poor managers of their time and resources, especially on a daily basis. How

Molten Brood

This season there are many reports of unusual brood disease symptoms in many hives. This condition has generated a number of rather colorful names, but it is most likely Idiopathic Brood Disease Syndrome (IBDS); this is the new name for what was called Bee Parasitic Mite Syndrome (Bee PMS), but the fact is that the source is not known (the word Idiopathic means arising spontaneously or from an obscure or unknown cause) and not solely associated with *Varroa* mites. Some of the samples sent to USDA return positive for European foulbrood, caused by *Melissococcus pluton*) while others are returned negative (which actually means they may not have been able to run tests for certain viruses and other causative agents).

IBDS is associated with European foulbrood like systems, but also with symptoms of American foulbrood (*Paenibacillus larvae*) and sacbrood virus (SBV). Unfortunately, IBDS has been associated with a very high mortality level and does not bode well for the beekeeper who has colonies showing these symptoms. In one study by vanEnglesdorp et al (2013), these colonies carry a risk three times those colonies with varroa mites, and are on par with the level of colony loss due to queen failure. Risks were assessed about 50 days after the IBDS was first observed.



Varroa mite on drone brood. Finding the right balance between mite and disease control and keeping productive colonies is a key part of colony management. (photo by Lo Ki)

many times have you walked or driven out of the bee yard to get something that you should have anticipated and had with you? Start by looking at your records of your last visit. Perhaps you had a follow-up list of things to be done and you can assemble the materials and have them with you as you enter the apiary. You may want to store a wide array of equipment in each out apiary that you are likely to forget and leave behind: Keep the essentials, such as a spare veil, smoker, hive tool, smoker fuel and lighter, bags for brood samples, cages for queens and paper and pencil for notes. Some beekeepers put up small buildings to house this material, while some of my friends use a metal garbage pail with a lid that can be fastened down securely (as with a bungee cord).

I try (with varying degrees of success) to carry a five-gallon pail with a tool apron to hold extra tools, including hive tools, pens, pencils, queen marking pen, small hammer and more. Inside the bucket I try to keep empty queen cages with candy in case I find a queen, old or virgin, that I want to keep. There is a subset of material I need to clean off insert boards for testing for *Varroa* mite drops, including a plastic scraper, a plastic kitchen cleaner, a bottle of soapy water and an old towel. There is a can of spray cooking oil to retreat the board as well as powdered sugar and a bee brush. Oh, don't forget the duct tape and your cell phone. If you need to have an Epi-Pen with you, don't forget it!

Before you leave your apiary, make a short list of followup items for the next visit. These may include colonies to check for queen status, check a colony to see if it is ready for a second box or a third super, and the like.

Creating value in terms of bees, honey, pollination, and other products.

Here is where the creative and joyful part of beekeeping meets the sweat and tears of bee stings and heavy honey boxes. We need to continually remind



A good frame of brood is a tremendous asset in a beekeeping operation. How it is used – to make honey, to be part of a new nucleus, or to sell to another beekeeper – is a decision each beekeeper must make.

ourselves that bees in nature, and without humans, often die due to the stress of the environment, poor forage conditions, long Winters, dry and nectar-less Summers and more. Our objective is to make sure that we have multiple full-sized colonies and numerous nuclei so we have brood, queens, and honey whenever we need to boost, recharge, or save a failing colony. In the study mentioned in the Box they report that any eastern migratory colony with queen problems is three times more likely to be dead in about 50 days. That means that the best thing any beekeeper can do, regardless of operational size, is to have a nucleus program keeping laying, healthy, young, disease and mite tolerant queens available at all times.

Some commercial beekeepers use nuclei as a means of strengthening their production colonies, rather than the other way around. Anytime a strong colony needs to be boosted with honey or brood, it is the nucleus operation that provides these resources. And if a queen fails for any number of reasons, there is a new replacement queen on hand for immediate introduction

or combination with the newspaper method.

To successfully produce large colonies of bees, have superior colonies for pollination and to produce honey and other products, one must have strong colonies. In *Bee-sentials: A field Guide*, I write about the need to have a minimum of two colonies for every new beekeeper, and that a new beekeeper must establish a nucleus from those two colonies during the first season of keeping bees. While this seems to be a drastic concept to some people, it will help reduce the percentage of beekeepers that are completely wiped out of bees, and thus more likely to leave beekeeping. With all the environmental challenges we face, humans need to promote beekeeping and seek to have growing beekeeping operations in all parts of the continent. **BC**

vanEnglesdorp, D., D.R. Tarpy, E.J. Lengerich and J. S. Pettis. 2013. Idiopathic brood disease syndrome and queen events as precursors of colony mortality in migratory beekeeping operations in the eastern United States. Preventive Veterinary Medicine, 108: 25-233.

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