



LOCAL NORTHERN BEES

Siouxland Bee Improvement Project
SBIP.LoneOakHoney.com

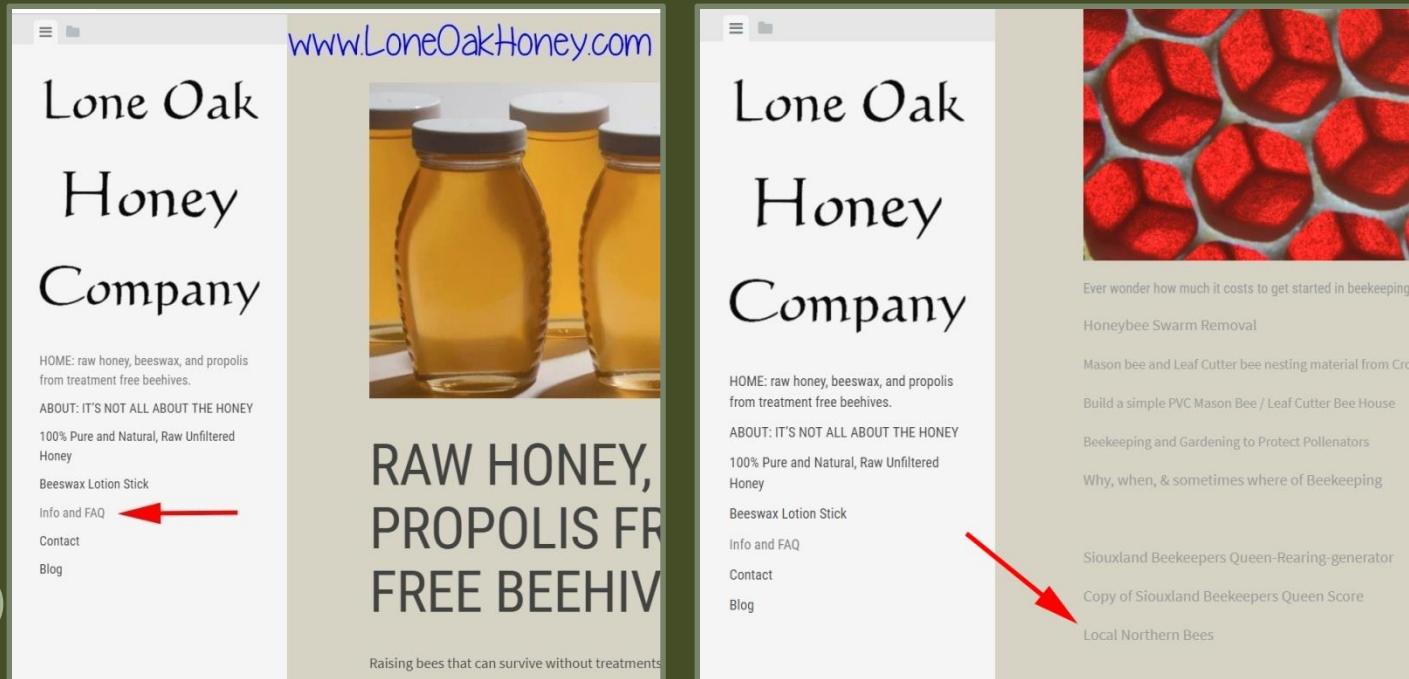
John Anderson

Lone Oak Honey Company

LoneOakHoney.Com

Siouxland Beekeepers
SiouxlandBeekeepers.org
LoneOakHoney@gmail.com

A COPY OF THIS PRESENTATION IS AVAILABLE
ONLINE AT:
LONEOAKHONEY.COM/INFO-AND-FAQ



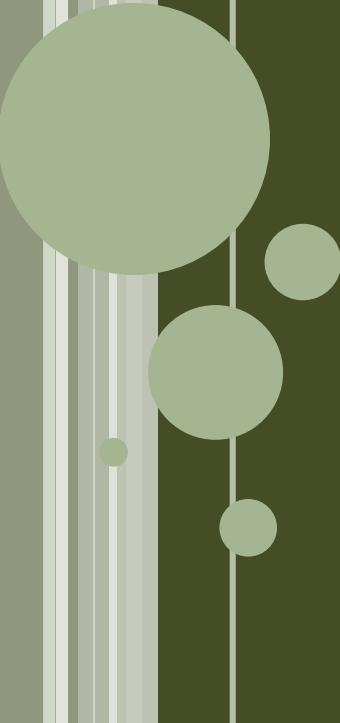
The image displays two side-by-side screenshots of the Lone Oak Honey Company website. The left screenshot shows the homepage with a navigation menu that includes 'Info and FAQ'. A red arrow points to this menu item. The right screenshot shows a different page with a sidebar containing a link to 'Local Northern Bees'. Another red arrow points to this link. Both screenshots feature images of honey jars and bee cells.

Or you can go to www.LoneOakHoney.com and click on “Info and FAQ” then find “Local Northern Bees” in the list.

My goal is not to show you how to raise queens but how you may incorporate local queens into your own operations. This presentation will give you a little information on the Siouxland Bee Improvement Project and our goal to develop local queens, why you may want to get involved and how you can help out.

Why local Northern queens?

So why would we want local northern raised queens and genetics in our bee yards? I mean, those southern queens that we get are available early in the season when we want them so what's wrong with them? I did some searching on the internet and I didn't have much luck finding studies comparing the performance of local bees to southern raised bees. But common sense tells us that bees bred in California probably don't have the ability to time the nectar flow in every part of the country that they are shipped out to. And they don't have as good a chance of surviving a real winter as northern bred bees do. But we all know common sense isn't always correct. I did find research carried out by members of the international honey bee research association COLOSS. The research was published in a special issue of the Journal of Apicultural Research in 2014. It concluded that "bees that are adapted to the local environment fare much better than bees that have been purchased and imported from a completely different home area." "It is very clear that the local bees fare better than imported ones, and that they live longer,".



So I did not find much research, but
what about the personal experience
and opinion of beekeepers we trust?



ScientificBeekeeping.com

Beekeeping Through the Eyes of a Biologist

Randy Oliver

Queens For Pennies

First published in: American Bee Journal, March
2014

“I’ve been encouraged in recent years by the number of beekeepers who appear to be successfully keeping locally-adapted stocks of bees without treatment for varroa. I am a strong supporter of their efforts, and see them as the wave of the future.”



MICHAEL BUSH
BUSHFARMS.COM

- Michael says of feral (local) bees: “From my experience they are often more productive because they are more attuned to your climate and build up at the appropriate time to make a good crop.”

The
Practical Beekeeper
Beekeeping
Naturally



by Michael Bush



New/Old Beekeeping Discoveries

KirkWebster.com



<http://kirkwebster.com/index.php/feral-bees>

Kirk Webster says “in order to move a productive apiary back toward health and balance, and away from miticides, adaptations must be made in both genetics (breeding) and methods (management). There are no bees you can introduce into your colonies that will solve all their problems and allow you to return to the beekeeping of the 1970's and early '80's; and there are no management schemes that will maintain productivity in an untreated apiary without stock that already has some ability to co-exist with varroa and other pests, and which is capable of further improvement.”

Kirk is talking about local, feral bees here.



Queen Rearing in the Sustainable Apiary

National Honey Show • 141K views • 5 years ago

A lecture given by Mike Palmer at the National Honey Show 2013 entitled "Queen Rearing in the Sustainable Apiary". If you have ...

Michael Palmer's YouTube video “Queen Rearing in the Sustainable Apiary”

<https://www.youtube.com/watch?v=R7tinVIuBJ8>

Michael asks “Why are you buying queen bees from far away places when you can raise queens that are better than anything you can buy?”

He then goes on to say “Queen bees are not difficult to raise. We can raise better queens than we can buy from far away places.”

“The best queens are going to come from your own area. Grown under the same conditions that you are keeping your bees”





THE THING ABOUT LOCAL NORTHERN QUEENS IS

**They are not ready in April or May
like southern queens are.**

- In 2019 I would like to start grafting on May 9th. But the weather has a lot to do with when I can start raising queens. To start on May 9th I need to put drawn drone frames in the drone mother hives by April 14th.

Queen-Rearing-generator 2019 SIOUXLAND BEEKEEPERS

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| A | B | C | D | E |
|---|---|----------|------|--|
| 2 | Queen Rearing Calendar Generator | | | |
| 3 | Enter the date you are going to graft here: 5/9/19 | | | |
| 4 | Day # | Day Name | Date | Task/Status |
| 5 | | | | Notes |
| 6 | | | | |
| 7 | | | | |
| 8 | -21 | Tuesday | 4/14 | Place drawn drone frames in Drone Mother Colonies. This is 41 days before the queens will take their first mating flights. Drones take 40 days from the time the egg is laid until they reach sexual maturity. |
| 9 | | | 4/29 | Starter / Finisher: If using the Cloake board method install it now without the slide and close off the Cloake board entrance. Leave the bottom entrance open. Make sure the queen is below the Cloake |

- And the bees need to raise drones in them right away in order for the drones to be ready when the queens go on their mating flights. Our weather is not always nice enough for that to happen on April 14th.

Queen-Rearing-generator 2019 SIOUXLAND BEEKEEPERS

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Queen Rearing Calendar Generator

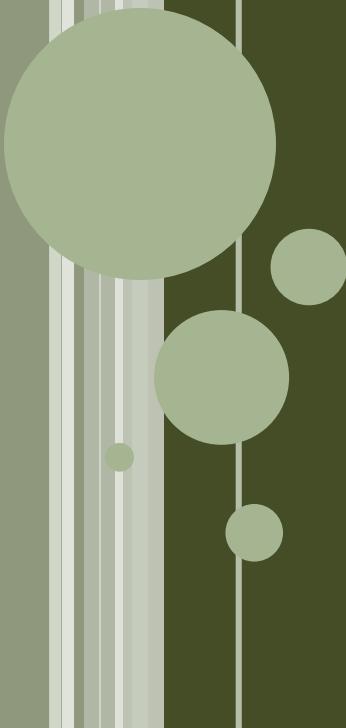
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- If I can start grafting on May 9th then I should have queens ready for sale by June 14th.
- If things get delayed by 2 weeks it will be almost July 1st before I have any queens for sale.

| | | | | |
|----|----|-----------|------|---|
| 46 | 37 | Monday | 6/10 | First day you should expect capped brood from new queen. |
| 47 | 38 | Tuesday | 6/11 | |
| 48 | 39 | Wednesday | 6/12 | |
| 49 | 40 | Thursday | 6/13 | |
| 50 | 41 | Friday | 6/14 | Check nucs for larvae: Larvae found? If so evaluate laying pattern and queen to see if she is sellable. |
| 51 | 42 | Saturday | 6/15 | Re-queen if no eggs or larvae found |
| 52 | | | | |
| 53 | 49 | Saturday | 6/22 | First day brood from new queen could emerge. |





WHAT CAN YOU DO WITH A NEW QUEEN ON JULY 1ST, AFTER THE NECTAR FLOW HAS ENDED?

Beekeepers usually plan to requeen in the spring, but that doesn't mean you can't do it in summer or fall. Some beekeepers actually prefer requeening in late summer.

“LATE SUMMER REQUEENING” BY LARRY CONNOR



http://www.wicwas.com/sites/default/files/articles/Bee_Culture/BC2004-08.pdf

“To recap, later Summer requeening should produce:

- 1 Larger number of winter bees
- 2 Queens with better spring laying (because they are young)
- 3 Colonies less likely to swarm in the spring





HoneyBees
Online.com

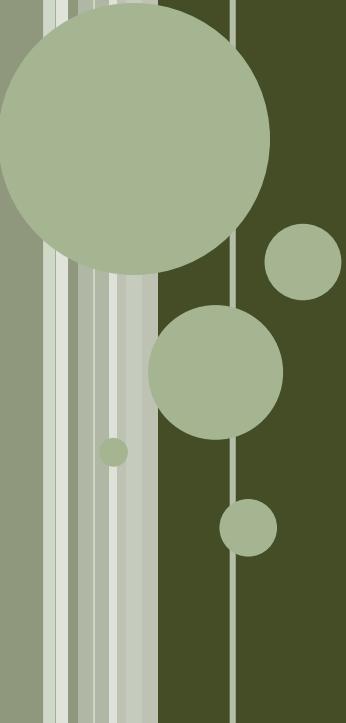
REQUEENING A HIVE LONG LANE HONEY BEE F FARMS

“July-September is often viewed as the best time to requeen because it allows your young queen time to become well established with her hive prior to winter.”

“And, when spring arrives, a new queen will be ready to lay as the weather warms up. However, requeening in September is more difficult because during September there is not a heavy nectar flow and bees more readily accept a new queen during a heavy nectar flow.”

I have not tried this, but I wonder if you could feed sugar syrup when introducing a new queen and improve the chances of her being accepted.





LATE SUMMER HIVES ARE FULL OF BEES, MAKING IT HARDER TO FIND THE QUEEN THAT NEEDS TO BE REPLACED.

One alternative that has potential to make your beekeeping more sustainable is:



RESOURCE HIVES FOR OVERWINTERING



This is a resource hive.

Dadant calls them Support Hives (<https://www.dadant.com/catalog/hive-parts/support-hive-m60035>).

Some people call them Double NUCs or Side by Side NUCs or 4 over 4 NUCs.

Some people call them Palmerized after Michael Palmer.

Brother Adam used them.

Image copyright https://www.betterbee.com/images/Double_nuc_instruction.pdf



The red arrow points to a center divider in the lower box.

These are really two hives that share a center divider.

There are 4 frames on each side of the divider in the bottom box.

There are 4 frames in each of the upper boxes.

There is nothing in-between the bottom box and the upper boxes.

The blue lines represent frames in one hive, the green lines represent frames in the second hive.

THE ADVANTAGE OF RESOURCE HIVES/SUPPORT HIVES FOR OVERWINTERING:



Blue line marks the shared center divider .

- The blue line marks the shared center divider of the Resource Hive.
- The main advantage is that both colonies of bees share the center wall of the hive and they share the heat. Each colony benefits from the extra heat of the other colony. Usually they will both end up clustered up against the center divider, almost like one big round cluster with the center divider between them. As winter progresses the two clusters will move up the hives.

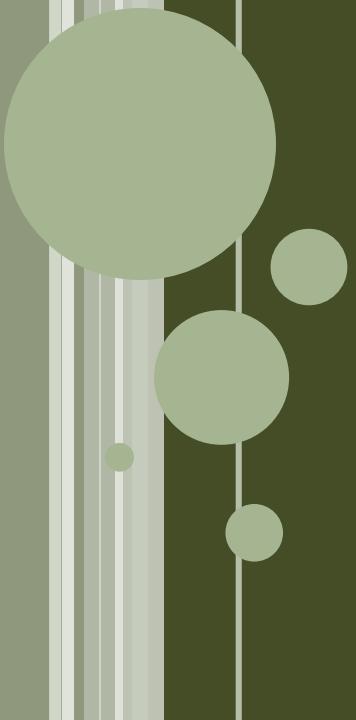
THE ADVANTAGE OF RESOURCE HIVES/SUPPORT HIVES FOR OVERWINTERING:



- The other advantage is the vertical configuration. Four frames over four frames is a tall narrow space. Since heat rises this tall narrow space seems to give the bees a heat advantage.
- Andy Joseph has used these hives to overwinter in Iowa and he says eight frames of bees in one of these hives overwinters much better than 10 frames of bees in a standard single Langstroth box.
- If you are breeding queens these hives give you an opportunity to test the winter survivability of a queen and only use 8 frames of bees. Instead of the 20 frames of bees in a standard hive.

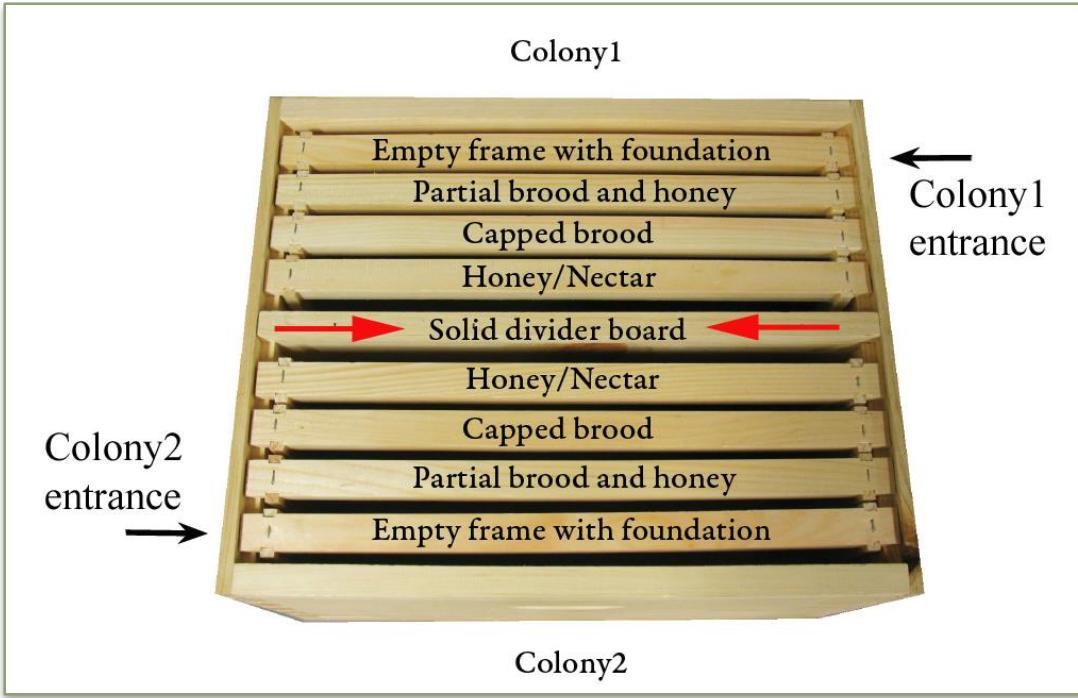
Better Bee has a nice set of photos and instructions at:
https://www.betterbee.com/images/Double_nuc_instruction.pdf

WHEN AND HOW TO START RESOURCE HIVES/SUPPORT HIVES:

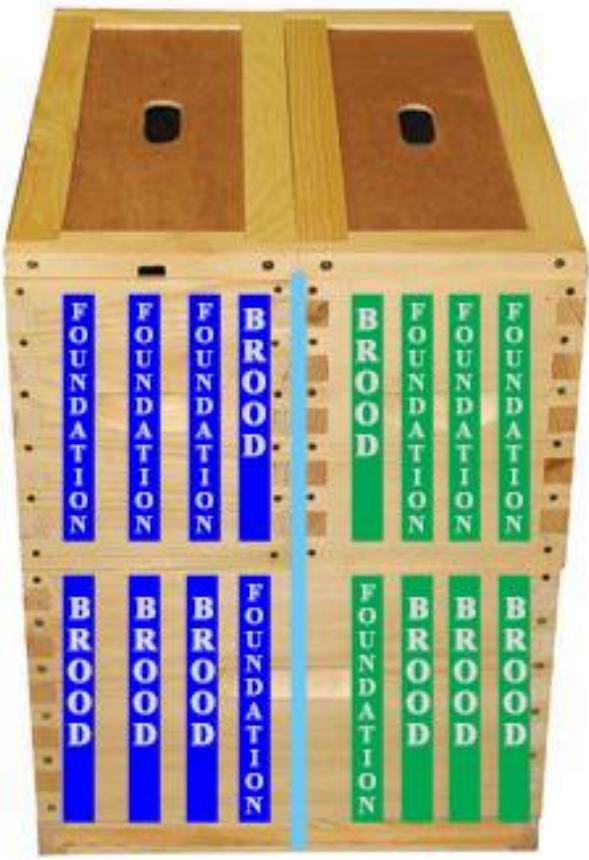


Michael Palmer in Vermont and Kirk Webster also in Vermont both make up these Resource Hives/Support Hives from their weak hives. Not sick hives, but the ones that have not built up like they should have and the ones that are not making honey like the other hives are. Instead of trying to save their week hives by stealing frames from their strong hives, they pinch the queens in these weak hives and split them up to stock new Resource Hives/Support Hives. They will give each new Resource Hives/Support Hives a new queen. Either a new laying queen they have raised or a capped queen cell.

Kirk starts doing this in the last half of June and the first half of July. Conventional thinking may tell you that July 1st is kind of late for starting a new hive. But remember you only need to build these up to 8 or 12 frames of bees to overwinter, not 20 frames. Also, if it works in Vermont, it should work here in Iowa as well.



- When making up these hives, Mike puts a frame of honey with bees in both sides, closest to the center divider. Then two frames of brood & bees. Then an empty drawn frame on the outside of each half. So each half ends up, from the center out to the outside, honey-brood-brood-drawn(empty). Then he moves the hives to a new location at least 6 miles away. They are pretty weak and you do not want the field bees flying back to the original location.



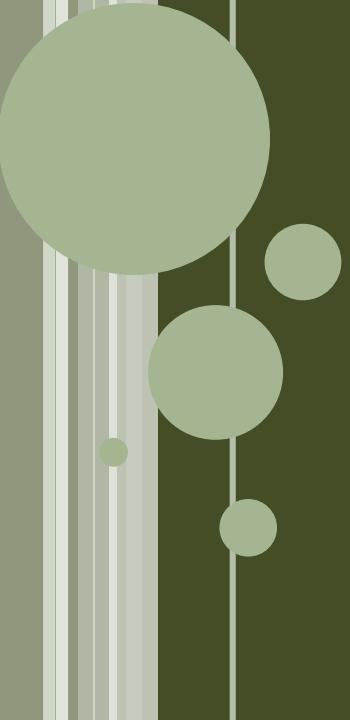
- About 4 weeks later (8 weeks if you used a queen cell) it is time to expand these colonies to 8 frames by adding the upper box.
- You cannot just put the box full of foundation frames on top. Bees do not see foundation above as room for expansion. Sometimes they don't even see drawn empty comb above as room for expansion.
- Take the frame of brood that is against the center divider and put it up in the box you are adding. Put it where it will be against the center divider in the top box. Fill the empty spot in the bottom box with foundation.
- So you end up with the bottom box from center divider out being foundation - brood - brood - brood. And the top box from the center divider out being Brood - foundation - foundation - foundation.

- About 4 weeks after this, if there has been nectar available, the colonies may need more space. At this point you could add a third box or you could swap frames of foundation for frames of brood and use the frames of brood in other hives that need a boost. This all depends on how late in the season it is and if the bees would have enough time to fill a third box before winter.
- If your 4 over 4 hives have filled 2 boxes (8 frames) and you decide to add another box of foundation, put it between the two boxes. Now you have brood on the bottom, brood on the top, and foundation in between. The bees DO see this as room to expand, because it is in the middle of the brood nest.
- Kirk says In a good year two thirds of his summer Resource Hives/Support Hives will expand to 8 combs by winter (4 over 4). This is without feeding.
- Michael Palmer builds his up to 12 combs by winter (3 boxes - 4 over 4 over 4).

TIMELINE:

- **May 26** A May 26 grafting date would result in queens verified and ready on July 1. This is probably later than when we will have them in reality.
- **July 1st** make up Resource Hives/Support Hives and give each hive a new laying queen you buy from the Siouxland Bee Improvement Project.
- **July 29 (Four weeks later)** Three to five weeks later add a second box of drawn frames or foundation, bringing the hives up to 8 frames each.
- **August 26 (Four weeks later)** Three to five weeks later, if the colonies have filled most of all 8 frames, then add a third box or pull some frames and replace them with foundation.
- **September** may have a fall nectar flow and they may fill the 4 more frames added in August.
- **October** you can reconfigure the hives setting them up for winter. You can leave them at 12 frames, just make sure the top box is full of filled frames, hopefully full of honey. Any unused or partially used frames can go in the bottom box. You can also reduce them to 8 frames if they did not fill out the 12 frames very far.
- **Next spring**, after these hives have survived a winter, they really take off. People who use them say they build up faster than many of the full sized hives they overwintered. You can start new hives with them or use them to replace your winter losses. Just clean out your dead hives and move the 8 frames from your Resource Hives/Support Hives into them when weather permits. If you have more survive the winter than what you need you can sell the extras as overwintered NUCs

- In 2018 I made up Resource Hives/Support Hives and gave them capped queen cells not on July 1 but **July 15**. Queen cells are 4 weeks behind laying queens. I had to feed these in August and September. They did build up to around 8 frames per hive by the time it got cold enough I had to stop feeding them.
- And here is something you may want to think about doing yourself: If you can create queen cells by grafting or splitting or catching a hive before it swarms, put a capped queen cell, one frame of honey + bees and one frame of brood + bees into each of your Resource Hives. That's just 2 frames per hive, but it is just enough to support the new queen once she is mated, and it does not use so many frames of bees that you will weaken your other hives much. Not all of the queen cells will hatch and not all of the queens will get mated. So at some point you can take frames and bees from the unsuccessful hives and add them to the successful ones giving them a boost.
- Let's say you make up 15 colonies with queen cells and 5 of them don't hatch or don't get mated. Take the 10 frames from those 5 unsuccessful hives and put them in the 10 successful ones. Now every Resource Hive has a new mated queen and 3 frames of bees, brood and food.
- When you add the second 8 frames you may want to feed right away. Depending on how slow the bees are building up and if your other hives are bringing in nectar or not.



A SHIFT IN THINKING.

If we want to increase the number of hives we have, do we really need to always increase in the spring with packages and NUCs? Or can we shift our thinking and start making our increases in summer? The disadvantage is you will not get a honey crop from your increases in the first year. But many times you don't get a honey crop from packages and NUCs in the first year anyway. The advantage is you can get northern bees. Local bees that are acclimated to your area. Bees that can time the nectar flow in your area and can survive your winters.

A SHIFT IN THINKING.

Kirk Webster article titled “Cell Building And Overwintering Nucs - The Key To Stability And Resilience In A Northern, Non-Migratory Apiary”

<http://kirkwebster.com/index.php/cell-building-and-overwintering-nucs-the-key-to-stability-and-resilience-in-a-northern-non-migratory-apiary>

“If the demand (for northern queens) is there, then only one basic change in northern beekeeping practice is necessary for a whole new industry to grow up; and it’s a change in the beekeeper’s mind only: Forget about queen cells and new queens available in March, April and May; and learn what you can do with cells and queens produced in June, July and August. This is the key to everything. It’s the starting point of real bee breeding in our region, self-sufficiency, the ability to produce surplus bees, and the way to make beekeeping really profitable and enjoyable once again.”

HOW YOU CAN HELP

By now I am sure I have convinced all of you that you need to buy our queens right? Well maybe a few of you I hope. The truth is we are just starting out and a lot depends on weather and luck and timing and so many other variables. We don't know how many queens we will be able to produce this year. We do hope to have some to sell to you if you want them.

It has become clear to me that this is not just a four person project. (Dave, Ron, Dean and me). This is a whole club project. And you all can help in some way.

You can help by identifying your best hives and letting them raise a few drones in the early spring. Maybe they will mate with some of the new queens we raise and your bees genes will add to the projects success.

You can help by buying NUCs from the club this year, the ones that are headed by VP Queens. You can let them raise a few drones, or better yet you can participate in our Queen Score project this year. Then if your VP Queen scores high you can let use raise new queens from her next year.



HOW YOU CAN HELP

The Queen Score is how we plan to evaluate queens. It will help us find the queens that have the traits we are looking for to improve our stock. I think it will be the key to our success and I don't think we can get far without the help of the club.

Randy Oliver estimates that from evaluating 1000 queens he would get around 25 potential breeders. That is only 2.5%. I usually have around 10 hives. So using Randy's estimate, in order for me to take my 10 hives and get 2.5 queens with the traits we are looking for I just need to raise and evaluate queens for ten years! That would be the equivalent of 100 hives.

I can't handle 1000 hives as a hobbyist. But our club members probably have thousands of hives between them. And this idea also came from Randy Oliver, why not have as many club members as we can evaluate queens and identify the ones we want to raise more queens from? If we did this year after year we should eventually find some real winners, some queens that outshine the rest.



QUEEN EVALUATION SCORE SHEET

Points for each criteria are added up to give each hive a total score. The hives with the highest scores are the best potential breeders. The next highest scores are the best for drone mother colonies. We will start using this evaluation sheet in 2019. We hope that by using this scoring system it will make it possible to fairly compare all hives scored and eliminate any beekeeper bias.

SBIP Queen Score 2019

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A B C D E F G H I J K L M N O

| 1 | Queen ID | Eval Date | Number of frames | Pounds of honey harvested | Mite Count Method | Number of mites (in negative) | Mite Treatment score (0 or -1, -5 or -40) | Brood Treatment score (0 or -1, -5 or -50) | Overwintering Score (max 15) | Temperament (0 or -50) | Brood Pattern Score (0 or -50) | Total Queen Score: | Z-SCORE | Comments and Notes: |
|----|----------|-----------|------------------|---------------------------|-------------------|-------------------------------|---|--|------------------------------|------------------------|--------------------------------|--------------------|----------|---------------------|
| 2 | B1 | | 16 | 10 AW | | -2 | 0 | 0 | 0 | -50 | 0 | -26 | -44.6835 | |
| 3 | B2 | | 16 | 10 AW | | -4 | 0 | 0 | 0 | 0 | 0 | 22 | 3.3165 | |
| 4 | B3 | | 16 | 10 AW | | -6 | 0 | 0 | 0 | 0 | 0 | 20 | 1.3165 | |
| 5 | B4 | | 16 | 10 AW | | -8 | 0 | 0 | 0 | 0 | 0 | 18 | -0.6835 | |
| 6 | B5 | | 16 | 10 AW | | -10 | 0 | 0 | 0 | 0 | -50 | -34 | -52.6835 | |
| 7 | B6 | | 15 | 8 AW | | -12 | 0 | 0 | 2 | 0 | 0 | 13 | -7.5825 | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | |



QUEEN EVALUATION SCORE SHEET

We hope that club members will use this sheet with us and we hope some of you will use this evaluation sheet in your own queen rearing.

You can get a copy of it at www.siouxlandbeekeepers.org/links and at <http://www.loneoakhoney.com/info-and-faq/>

SBIP Queen Score 2019

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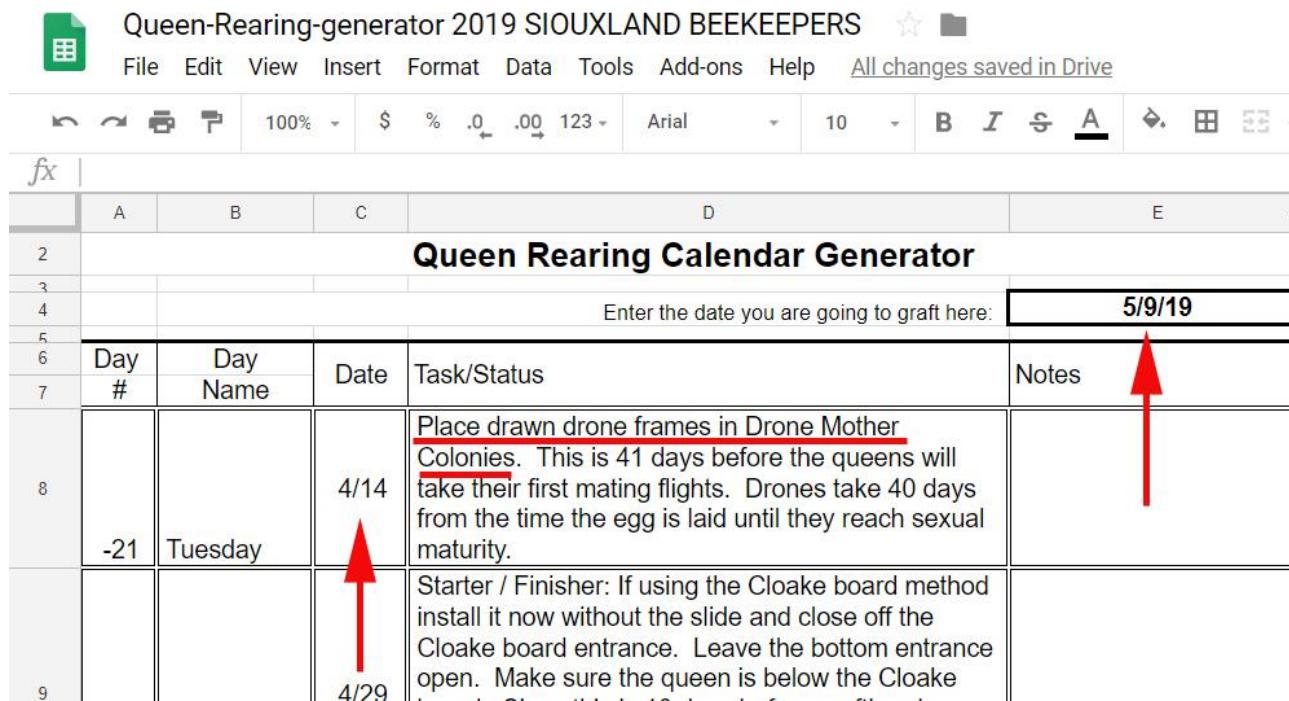


QUEEN REARING CALENDAR

We learned very quickly that when you start thinking about raising queens, and especially doing it as a group, timing is critical. I found a good queen rearing calendar generator to start with on the Ohio State Beekeepers website (<http://www.ohiostatebeekeepers.org/resources/queen-rearing/>).

We made some modifications and you can get your own copy at
<http://www.siouxlandbeekeepers.org/links>

And at <http://www.loneoakhoney.com/info-and-faq/>



| Queen Rearing Calendar Generator | | | | |
|---|----------|------|--|-------|
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- Two members of our club, John and Vivian, were first year beekeepers in 2018. They started with two NUCs on **July 2nd**. They did not get bees early in the spring when everyone else did. Early in the year when all the other new beekeepers were trying to figure out what they should be doing with their new bees and calling their mentors, John and Vivian were out in their mentor's bee yard helping clean out dead-outs and judging the strength of the hives that made it through winter. Later they helped raise queens and make splits. When they got their bees they already had a lot of experience and they did not need to waste any time wondering about how they were going to deal with a honey crop because the main flow was already over. All they needed to focus on was feeding their bees when there was no nectar coming in and building their bees up to make it through their first winter as beekeepers. Maybe that shows us another shift in thinking we should consider.

THANK YOU.

John Anderson

Lone Oak Honey Company

LoneOakHoney.Com

Siouxland Beekeepers

SiouxlandBeekeepers.org