

*Now is the winter of our discontent
Made glorious summer by this sun of York*
- "Richard III" by Bill Shakespeare

I've had my share of over-winter colony losses through the years. But as I've become more experienced and hopefully slightly wiser, I've adopted a simple approach that usually makes winter losses a non-issue for me. Your results may vary but the basic premise is completely sound. Losses may not always be zero but they can be much more under your control than you may think.

Focus on what's important

Many NC beekeepers waste emotional energy trying to address issues that aren't really problems for us. This is often due to anthropomorphism, the natural tendency to assume that what people need is what bees need too. This happens a lot with respect to winter management. Believing that low temperatures are bad and warm temperatures are good (right?), they'll follow the advice of books written by beekeepers in Michigan, Upstate New York and other inhospitable climates. They'll wrap their hives in tarpaper, construct elaborate windbreaks and even install fancy heaters. The result is the equivalent of poor Randy (Ralphie's little brother) from *A Christmas Story* (see the photo in upper right).

The truth is that in Piedmont NC, we don't have bee-killing temperatures (see chart at the top of the next page). Do the squirrels drop dead out of our trees on a cold January night? Of course not. Our bees don't either. European honey bees are more than equipped for the mild winters we experience here. In fact we can easily kill our bees with kindness by trapping moisture within the hive. Excess moisture can drench our bees, and that will kill them in cold weather. So we should be concerned with sufficient ventilation and ignore the temperature.

It is important to recognize that cold temperatures aren't, in themselves, bad for organisms that have evolved with them. For example, certain plums require a hard freeze to



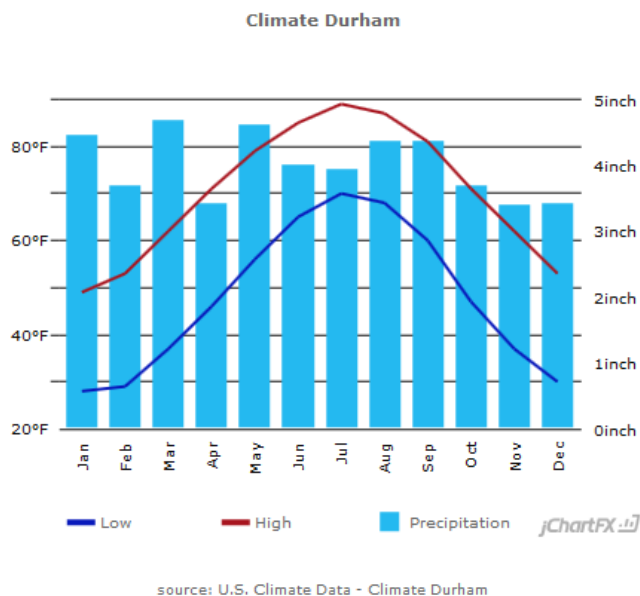
Ralphie's brother Randy (*A Christmas Story*), well dressed for Chicago but ridiculous and at risk of dangerous over-accumulation of moisture-laden heat in the North Carolina Piedmont.

produce fruit the next year. Cold bees form a tight cluster which enables them to survive quite well using few resources. Warm them up and all they'll do is wander around and eat their winter stores, making starvation more likely.

Not only do I not add insulation to my hives in winter, I don't close off my screened bottom boards either. Doing so isn't necessary and it would work against my goal of providing good ventilation to control moisture. Cold isn't the winter enemy here!

A Winter Survival Plan

My winter survival stool rests on three legs. I've learned the hard way that none of them can be neglected without creating a "winter of discontent."



Average high and low temperatures by month for Durham, NC.
Note that average daily highs are in the upper 40's in January.

Leg 1: Varroa treatment

Varroa-borne disease adds to the stress of winter. "Winter losses" are often death-by-varroa; the stress of winter was just the last straw that broke the proverbial camel's back.

To remove varroa as a factor for overwintering losses, we want the bees that live over winter to be fat, healthy and varroa-free. That means that the nurse bees which raise those bees must also be healthy. So we must use a reliable, effective treatment early enough for the colony to rear two cycles of bees before the queen shuts down egg-laying for the season.

Treatments such as ApiGuard require around four weeks for a full course. So for the timing to work out, we need to apply treatments starting around mid August to early September at the latest. Refer to last month's article, [How Might We Smite Mites](#), for a discussion of varroa assessment and treatment.

Leg 2: Feed!

We would all like for our bees to be self-sufficient, gathering more than enough

nectar in fall to carry the colony over until the next April. My bees do this many years. However in other years we have a dry September/October with little nectar.

Will Fall 2014 be slim or abundant? I have no idea. Should I wait until October to see whether the fall flow materializes? It is risky to play that game, because it takes time and effort for bees to cure nectar to make honey. First they must gather it. Then they dry it so that it won't ferment. They'll need something like 40 to 60 pounds (a 10-frame medium or deep, respectively) of honey to last from the first hard frost in October until the tulip poplars bloom in April. If the honey isn't well cured, it can ferment in the comb and be unhealthy. It takes lots of bees a lot of time to do all of this work.

Our bees will go into a cluster once the temperature drops below the 50s F. When in cluster, they won't take up syrup or cure syrup/nectar. In our area, the cluster will form and disassemble throughout the winter as the weather changes from day to day, but don't expect the bees to do much nectar curing as this is going on. So in order for them to have an adequate supply of properly cured syrup, we want them to have everything in place before the temperature settles into the "cold" range. This is also when the nectar-producing plants conk out. So we cannot wait until the natural honey flow stops before we begin supplemental feeding. We must make an early judgment as to whether the natural flow is likely to be sufficient and feed to make up the expected difference. And if conditions change (if the fall flow doesn't progress as expected) we must quickly adapt.

All this together means we must monitor honey stores often and feed when they are low. Lift hives from the back to assess how heavy they are. By November 1st, they should be very heavy (enough for you to say, "oomph!" when trying to lift). Don't put too much confidence in a natural flow that may or may not materialize – hope for the best but plan for the worst.

Leg 3: Cull lousy hives

This step is critical for eliminating winter losses. Experienced beekeepers refer to it as “taking winter losses in the fall.” This can be difficult for hobbyists with sentimental attachment to all of their hives. But a lousy hive that limps into winter will not miraculously recover as a result of the beekeeper’s wishful thinking. It will either be a lousy hive in spring or, more likely, will be a “winter loss.”

There is no reason to spend time, energy and money trying to drag a doomed colony through the winter. Its resources, including its bees, can be used to boost the resources of your good hives. In this way, they aren’t wasted.

Combine a weak hive with a strong one by placing the weak brood boxes over the strong ones, separated by a sheet of newspaper. Cut a few slits in the newspaper to encourage the process. Within a day or two, the two colonies will chew through the paper and

unite. The strong colony’s bees will eventually dispatch the weak queen, leaving their own strong queen.

Don’t bother uniting two weak colonies. The result would be a large weak colony. The reason the hive was weak (a tired old queen, varroa damage, etc.) would remain.

These steps require that a beekeeper manage bees rather than just “have” bees. Bad luck and “learning experiences” will still kill some hives but by planning ahead, smart beekeepers can go a long way toward taking control of their winter losses.

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A very strong, rapidly-growing colony that died in the last few weeks of winter. Every bee in this picture is dead, even the ones on the combs. Note the dead bees in cells with their rear ends sticking out, a classic sign of death by starvation. See [Beware the Ides of March \(Feb 2014\)](#) for more information about this common tragedy.