

## Screened Bottom Boards or Solid Bottom Boards

By Kip Glass

Ever since screened bottom boards have made it into the beekeeping scene, I have noticed, in my opinion, a lot of misuse. As in all of beekeeping, different equipment choices have advantages and disadvantages to each.

Screened bottom boards started back when the Varroa mite was making an impact in the lives of beekeepers. The thought was it was a way to monitor your mite levels to see if you needed to treat or even if you had mites. Now with lots of years under our belt with this pest, we have found this is a poor way of monitoring or way of eliminating this pest.

The thinking was, mites would drop off the bees naturally or get groomed off of the bees after a sugar shake and fall to their death on an oiled or bare, slide in plasticore™ board. Well that way of management has proven it doesn't keep up with the natural growth rate of the varroa mite. You would have to do a sugar shake weekly and even then you might be lucky to keep varroa under control. Realistically a beekeeper will not do this every week.

So the other ideas of screened bottom boards.

It is a great way of adding ventilation to the colony. Here is where I usually see a major misuse of screened bottom boards. Let us look at this under the scrutiny of common sense. (A good way to view life, in my book). A bee colony when raising brood, needs to keep that brood nest at somewhere between 92 to 94 degrees Fahrenheit. If the temperature of that area where eggs, larvae, capped off, pupating bees is below that target temperature, the bees do one or all of the following. They eat more food to create heat energy, they constrict the area that the cluster can safely and efficiently cover to maintain that temperature.

So think about how warm 92 to 94 degrees is. It is hot to us, but to the bees, just right.

I hear of some beekeepers telling others to open the slide completely or totally remove it in the summer time. And they might even add that the individual should put on a screened inner cover to increase the ventilation up through the hive. If you are in Arizona or some other area that it reaches 110 degrees on a regular basis, yes maybe.

Now the common sense; in your area even during the hot summer time, how many hours of the day is the temperature above 92 degrees? Usually in Missouri not very often of the 24 hour period of one day. If the temp goes down to a very warm summer time evening temp of 78 degrees, the bees will have to constrict around the brood to keep it at the optimal temperature. Also, the bees have to keep the brood area around 65% humidity. Opening the slide just destroys the perfect system that bees have to maintain that humidity. They struggle and you now don't have an optimal brood rearing environment.

It lets in light to the lower brood box. Queens do not like light and move away. You have now just lessened the amount of brood your colony can raise in your brood boxes and are forcing your queen upward.

Where I like the screened bottom boards; I can open up the bottom slide where it is open only 2 to 4 inches across the width of the hive and I can still leave a partially restricted entrance; say after the honey flow and robbing might be an issue. Usually that is in July and August around here and it is usually the hottest time of year too. There are many ways to increase ventilation in the hive other than screened bottom boards.

Another advantage is, it is easier to clean out debris just by sliding out the tray and giving it a good scrape with your hive tool. But in most of my mentoring, I see most people don't do that on a regular basis.

Solid bottom boards are usually cheaper in cost. They can harbor more moisture if you don't put a slight tilt to the front on the hive to let water drain away. You have to totally remove the bottom board to clean it, usually you only have to do that in spring before the bees start their normal buildup. Solid bottom boards also can be a little better for bees in colder climates to help eliminate drafts.

Because of the mismanagement of screened bottom boards, I would rather see beginners used solid bottom boards. As experience is gained, experiment for yourself with both, and see what works best for you.