

healthy brood production. Samples of 30 workers were collected from each colony ten times during the experiment to quantify the levels of tracheal mite infection. They found that none of the colonies had a significant mite infestation at the beginning of the experiment. However, tracheal mite levels rose dramatically in the second year for the domestic bees, whereas the Russian bees remained at or near zero mite levels. The last sampling period showed that an average of $13.3 \pm 20.7\%$ of the domestic workers were infected, compared to an average of 0% of the Russian workers. Clearly, workers of the Russian strain have a natural tolerance to tracheal mites.

A shortcoming of this study, one that the authors point out, is that the colonies were not “inoculated” with a controlled number of tracheal mites. The only way to infect colonies with *A. woodi* is to introduce parasitized adult workers, and there is no sure way of distinguishing infected workers from healthy workers without killing them. Thus it is possible that the reason the domestic colonies were more heavily parasitized at the end of the experiment is because they had more mites at the beginning. However, all colonies were kept in the same apiary, and cross contamination through drifting foragers undoubtedly occurred, so mites would still be expected to become established in the Russian colonies if they were susceptible.

I think that we're all pretty excited about the recent work coming out of the USDA labs. The “quarantine” phase of the project has been over for some time, and queens from the Russian strains are now available commercially from any number of bee breeders. I have only recently begun to use these bees, and the prospect of not having to treat for *Varroa*, as well as not having to worry about tracheal mites, is very intriguing. One word of caution, however. I would hesitate anyone to limit themselves to only Russian bees (or any other single strain, for that matter). Variation among our colonies enables us to address all of our problems, not just parasitic mites. But if you wish to reduce mite levels, by all means, go Ruski.

References: de Guzman, L. I., T. E. Rinderer, G. T. Delatte, J. A. Stelzer, L. Beaman, and V. Kuznetsov. (2002). Resistance to *Acarapis woodi* by honey bees from far-eastern Russia. *Apidologie*, 33: 411-416.

Buckwheat for Honey Production Source: Magness et al. 1971

Buckwheat is believed to have originated in Central and Western China. It is now a relatively minor crop in the United States. Average acreage grown, 1960-64 inclusive, was about 57,000. This contrasts with near one million acres 50 years earlier. Present production is probably under one million bushels, though exact data are lacking.

The buckwheat plant is entirely different from other grains and is not a grass. It is a summer annual with rather coarse, branched stems and large, broadly arrow-shaped

leaves. Flower panicles and leaves rise from the nodes, both on the main stem and branches. Growth habit is indeterminate with flowers opening throughout a long season, so the seed crop does not mature at one time. The seed is partially but not entirely enclosed by adhering flower parts during development.

Buckwheat is usually seeded only after the ground is thoroughly warm in early summer. Plants will begin blooming in about 40 days from seeding and first seeds mature about 35 days later. Harvesting is done when a substantial part of the seed is ripe. Fields are then mowed and plants are stacked to dry before they can be threshed.

Seeds are pointed, broad at the base, and triangular to nearly round in cross section. They vary in size in different kinds from about 4 mm at maximum width and 6 mm. long to 2 mm. wide and 4 mm. long. The seed consists of an outer layer or hull, an inner layer, the seed coat proper, and within this a starchy endosperm and the germ. In milling the hull, which comprises 18 to 20 percent of the whole grain weight, is first removed. A second milling removes most of the seed coat or “middlings” which comprise 4 to 18 percent of the whole grain weight - depending on how completely the seed coat tissues are removed. In most buckwheat flour some of the seed coat particles remain, resulting in a light brown color. More complete milling results in a white flour.

Uses of Buckwheat

Most of the buckwheat grown in the United States is milled into flour which is used largely in pancakes. For pancakes the flour is usually blended with that from other grains. Whole buckwheat grain may be used in poultry scratch feed mixtures. The middlings from milling make good livestock feed as they are high in protein. The straw is higher in protein but lower in digestible carbohydrates than grass grain straw.

The buckwheat plant is an excellent honey source as the blossoms are rich in nectar, and blooming continues into the fall months. Some beekeepers plant buckwheat primarily for such use.

Last update February 18, 1999 by ch

NEEDS YOUR ATTENTION:

- Time for **DUES**. The membership approved raising dues to \$10 per year. A few of our former members have not been in attendance so far this year.

- Any REMAINING PAYMENTS on the package bees or queens need to be cleared ASAP.

- **OLD QUEENS WANTED:** (not what you may think) Our member, Dr. Olav Rueppell needs old queens for his research at UNCG. If you re-queen this season, it would be great if you would place the old queen in the deep-freezer