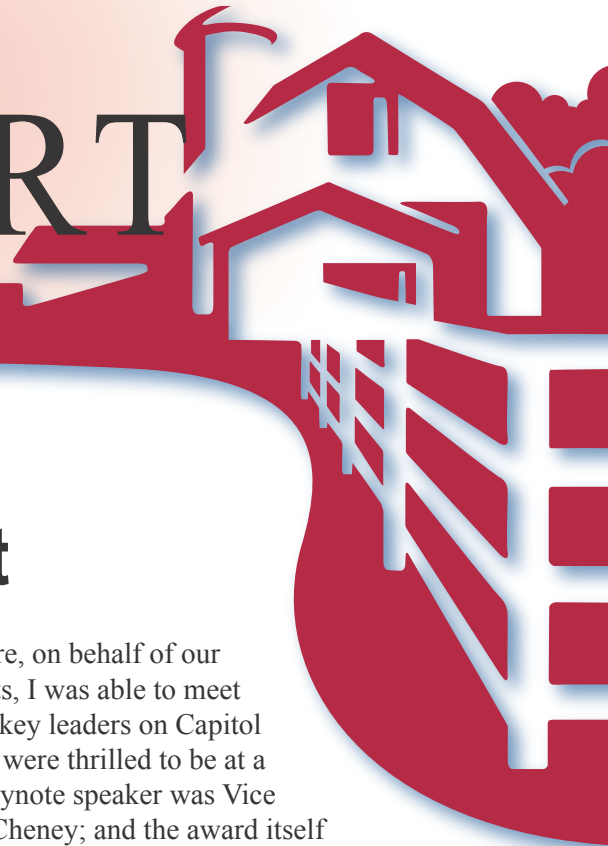


B & BTM WORM FARMS

REPORT



Bringing in 2003 -- Letter from the President

If 2002 is any indication of the coming year, you are in store for good news from B & B. We expect to experience continued growth and the development of interesting projects that use either B & B worm castings or the worms themselves for large composting projects.

In 2002 alone, B & B had increased its number of contracted growers from 1,178 in 36 states to more than

ington, D.C. Here, on behalf of our business interests, I was able to meet informally with key leaders on Capitol Hill. Lynn and I were thrilled to be at a dinner whose keynote speaker was Vice President Dick Cheney; and the award itself was presented at a luncheon by Newt Gingrich. In addition, there were entrepreneur's roundtable discussions on such topics as tax strategies, overseas expansion, and government regulations. All in all, the event (continued on page 11)



Speaker Newt Gingrich presents a Republican Gold Medal to B & B's president, Greg Bradley.

2,400 growers in 40 states. That's more than double in one year.

It was also a banner year for good news about B & B. Favorable news coverage had been generated in various states, both about our growers and B & B. In addition, I was honored in October with a Republican Gold Medal at the Republican Entrepreneur's Convention in Wash-

Grower's Convention Update

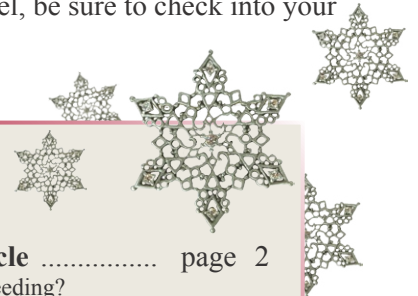
Every year, we try to outdo the arrangements we made at previous B & B Grower's Conventions. And this year is no exception. The 2003 convention will be held Feb. 14-16, in St. Louis, Missouri. As soon as you arrive at the Millennium Hotel, be sure to check into your (continued on page 11)

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The Life Cycle of Redworms

Just how old are redworms when they're ready to breed? How long does it take for the young to hatch? For worm growers in vermicul- ture, answers to these types of ques- tions can help them manage changes in feeding requirements, not to men- tion harvesting schedules. We'll begin at the level of the parent worm.

Although earthworms are hermaph- rodites, possessing both male and female reproductive organs, most species are like the redworm (*Eisenia fetida*). They still require two worms to exchange sperm in order to produce young.

From Cocoon to Hatchling

After the two worms exchange sperm, a process that may take hours, the worms move apart and eject their own ova into a pore on their skin surface near the sperm pore. The sperm and ova eventually come together when the worm sheds the mu- cous band that holds the ova. When the hardened mucous band closes, it forms a cocoon with sperm and ova inside where fertilization takes place.

Each worm will continue to produce cocoons until they have used all of the sperm received from their mate. As the young redworms in the cocoon develop, they are nour- ished by a protein rich al- bumin that sustains them through their gestation period of 30 to 75 days under ideal conditions.

The cocoon protects the developing young from environmental extremes that would kill adults. In addition, the babies within can pick up signals from outside the cocoon that indicate whether condi- tions are potentially hazardous. If conditions are not good, development is slowed. Under extremely harsh conditions the babies can go into full dorman- cy and remain in the cocoon for as long as two years.

When first dropped from the body of the parent, the seedlike cocoon is a creamy, pearles- cent yellow. It darkens to cola brown as the young worms within mature and prepare to emerge. Again, the number of young in each cocoon depends on environmental conditions. *Eisenia fetida* typically produces three young per cocoon under ideal condi- tions.

Baby worms emerge from their co- coons fully formed except for repro- ductive organs, and they do not yet



The redworm (*Eisenia fetida*).

have the deep red pigment of their par- ents. They are translucent with a faint pink tint to their skin, and a long red vein that runs the length of their body. This vein and the pink tint distinguish the baby worms from milky white pot worms.

Juvenile to Adult

Juvenile worms also have the ability to slow their rate of develop- ment based on environ- mental conditions and the availability of food. Because juveniles need a significant amount of energy for growth, they tend to concentrate in the warmer areas of the worm bed near fresh sources of food, typically near the surface.

Under ideal conditions redworms will reach sexual maturity in about 53 to 76 days after

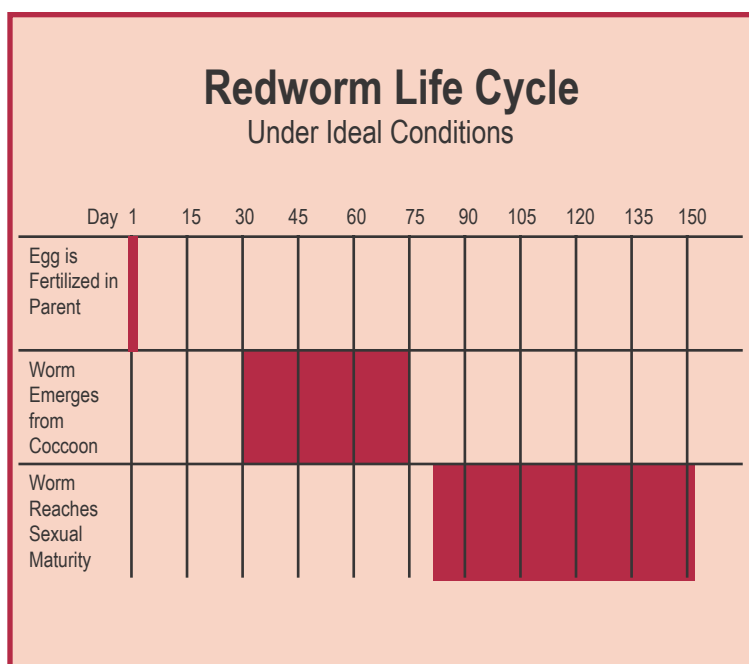


Chart showing the life cycle of redworms, under ideal conditions.

(continued on page 3)

Worms Eat Waste from School Lunches

When Mennonite second graders became interested in earthworms, they didn't bank on the generosity of its community members and B & B Worm Farms. Phyllis Horsensinger, teacher at Hinkletown Mennonite School in Ephrata, Pennsylvania, inquired how her class might be able to purchase some earthworms to help digest leftover lunches. Word got to one of the children's parents, Cliff Martin, who happened to be renting one of his barns to B & B's Pennsylvania distributor, Early Bird Farms. Cliff talked to Ben Schminke of Early Bird Farms about a possible purchase, and then Ben contacted Lynn Bradley at the B & B corporate office. It turned out B & B would be happy to donate the worms -- about 25,000 of them.

Ben then set about designing a special bin for the class, and Cliff volunteered to construct it. The plywood bin is 2 feet wide by 4 feet long, and 16 inches deep. A section of



Entryway to Hinkletown Mennonite School.

one side is made of Plexiglas so that the children can see the worms at work in the soil. But because redworms aren't keen on being exposed to light, the bin has a movable flap over the Plexiglas so that light would expose the worms only when the children wanted to observe them.

Of course, the bin is not designed to encourage worm growth, but to sustain the current worm population to take care of the children's food scraps.

Ben says that delivering the worms last October was a fun experience. "The kids were incredibly excited," he says. "I couldn't have asked for a better audience." He gave a brief orientation on the worms, at which the children



The second grade class at Hinkletown Mennonite School in Pennsylvania check out their new cache of redworms.

presented about 20 questions concerning what the worms ate, what they weighed, and if they were boy or girl worms.

Ben received only one call so far about worm care. Apparently, at one point, water began to leak from the bin. But he knew the solution to that one. "Don't water them so much," he advised.

Thanks to all mentioned for introducing the kids to vermicomposting!

Redworm Life Cycle (continued from page 2)

emerging from the cocoon. But their development can be delayed for several months when stressed.

As adults, redworms spend a significant amount of time seeking mates and breeding, and thus, are believed to consume less than juveniles. They tend to prefer temperatures closer to 70°F, and as a result, are more often found in

the cooler areas of the worm bed. Redworms do not have a breeding season, per se, but reproduce in response to environmental conditions, such as barometric pressure patterns, temperature, and sunlight. In nature, adult worms will often go through a heavy breeding period just before times of climatic extreme. Few will survive these extremes, but the hardy cocoons will weather the harsh conditions.

In the worm bed, however, the ebb and flow of breeding behavior is not so pronounced. Still, growers will see differences. Repopulating a harvested

worm bed at one time of year, for example, may take longer than it did at another time of year. This difference in repopulation times can usually be correlated to weather patterns.

How can you tell if an earthworm has reached adulthood? It forms a glandular structure called a clitellum. The raised, thickened band at segments 24 through 36 is sometimes a shade different from the rest of the body. Its purpose is to secrete the specialized mucous that forms cocoons -- which brings us back full circle to the beginning of the redworm life cycle. 🐛

An Introduction to B & B in Central America

Did you know that B & B Worm Farms is active in Central America? La Lombriz Bueno, which translates to “The Good Worm,” is in partnership with B & B to oversee vermiculture and castings operations in Central America and South America. The company is based in Costa Rica, and has been in operation since last September. According to Trenton Stillwell, president of La Lombriz Bueno (LLB), about 10 growers are expected by the beginning of 2003, with expansion into Belize also in the works.

Trenton says that vermiculture is a natural fit for Central America because that region’s resources for waste management are very limited, including space for landfills. LLB has been inun-

In Belize

Trenton says the first grower contract in Belize was completed in December 2002, and he expects a distribution center to be up and running there in the first part of 2003. Belize, like most other countries of the region, is comprised of many rural communities with few advertising channels. Trenton says that the distribution

center there will be heavily relied upon to market the services of the worms and communicate with any potential growers.

In Costa Rica

LLB is firmly up and running in Costa Rica with a handful of growers and one distribution center. Trenton says that the first grower in Costa Rica, Richard Ulrich, had signed on in June, and now runs

the bagging facility that began operation in October. The castings bagged here are currently destined to the U.S. under the B & B label. Eventually, castings will be contracted to Central American operations such as pineapple plantations and organic crop farms.

Goals for 2003

According to Trenton, the focus for

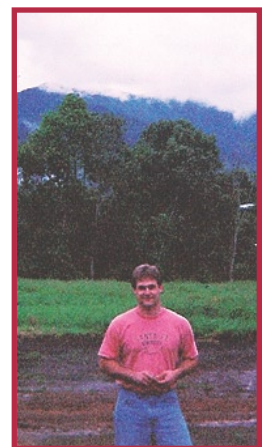


The bagging operation in Costa Rica when it was under construction. Here castings are bagged, loaded, and shipped.

this year will be primarily Costa Rica, which is targeted to host at least 500 new growers and perhaps a second distribution center. “These targets will provide us a good grower base from which to launch our waste management projects,” he says. He has three waste management contracts in negotiation, which, when signed, will represent a need for hundreds of thousands of pounds of worms in Costa Rica alone. Since his growers won’t be able to supply such quantities for some time, he will be counting on worms from the U.S. at least through 2003.

Trenton says that LLB is committed to the local environmental and economic improvements that follow the introduction of vermiculture.

“I am particularly pleased to be able to offer this to the smaller operations,” he says. “Nowhere else have I seen small enterprises accomplish so much.”



Trenton Stillwell.



Map of Central America.

dated with inquiries from Belize, Brazil, Mexico, and Costa Rica, both from prospective growers and waste-stream producers. He says that the popularity is due, in part, to the people being already familiar with worm growing as part of their farming culture. However, this would be the first time they would participate in large-scale growing for waste management projects, making worms a true livestock.

B & B Worm Farms in the News

“It’s a shady business with some very slimy workers ... thousands of them.” Thus began the news report recently aired by KTAL-TV, Shreveport, LA.

The program featured the B & B vermicomposting project at LAAP (Louisiana Army Ammunitions Plant). The facility now diverts about 50 tons of organic waste from the local landfill each day, a majority of which is from the nearby Louisiana Downs Race Track.



KTAL-TV reporter interviews Greg and Robert at the LAAP.

Interviewed in the news segment were B & B President Greg Bradley and facility General Manager Robert McDaniel. They told how 150,000 pounds of worms were eating their weight in waste each day, with half of that waste coming back out as “black gold,” or castings, which replenish the soil and garden. “We do alternative waste management,” said Greg. “We clean up the environment and put people to work,” -- a process, he said, that has been going on for years on a smaller scale, but which B & B has perfected for large-scale operations.

At the end of the news segment, reporter Rich DeMuro asked Greg what the worms get for all their work. Greg answered, “The worms are fed all the manure they could ask for.” 🐛

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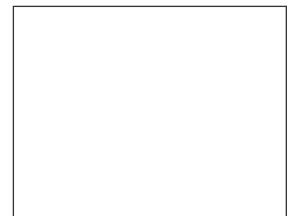
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