

# Seeding Worms Boosts Soil Tilth— Naturally

Bob Van Hovel, Crescent City, Illinois

## Night Crawlers as Natural Soil Conditioners

Coordinator: Robert Van Hovel

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To improve his soil, Bob Van Hovel seeded thousands of night crawlers into part of an 80-acre field as well as in a 23-acre field. The night crawler "castings" boosted organic matter in the soil and reduced fertilizer needs.

It's been more than 10 years since Bob Van Hovel added thousands of worms to his soil to enrich the land. But he can still see the evidence of their presence in his fields.

"Even to this day, I can go out there and see 'midins,'" Van Hovel says. Midins are the husks and other plant material that the worms pull down into the soil. If he pulls up this plant material, he'll find burrows below where the nightcrawlers can be found.

Van Hovel, with the help of a SARE grant, "seeded" thousands of nightcrawlers in his soil to improve the soil quality in the mid-1990s. He planted worms in part of an 80-acre field as well as a 23-acre field on a farm that totaled roughly 1,000 acres at the time. The other part of the 80-acre field was used as a control plot.

"I had very few earthworms in these particular fields—zero to none," says Van Hovel, a farmer near Crescent City, Illinois, about 60 miles north of Champaign. "Even though I had no-tilled for years, I just wasn't seeing the populations that I thought I should see. So my project was to



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get a hold of the nightcrawlers and actually seed them over a couple of my fields to see if they would make a difference."

According to Van Hovel, nightcrawlers pull the residue, such as leaves from beans or corn, down into the soil profile. Then they chew the residue and expel "castings," which boost organic matter in the soil and reduce the need for fertilizer.

Van Hovel chose nightcrawlers because they burrow deep into the soil and create extensive channels, which allows natural drainage.

During the spring and fall, Van Hovel planted the worms every 10 feet, drilling 6-inch holes and burying the nightcrawlers. He eventually switched to simply placing the worms underneath the crop residue, which was much faster. After the first year, he planted rye grass to provide the worms with a food source that would also protect them over the winter.

For a three-year period, Van Hovel checked portions of the fields daily to see if the worms had increased in population. The only time of year that he did not check was in the dead of winter when there was

too much snow cover. He found that the populations did go up and continue to remain high today.

Van Hovel no-tills his fields and hasn't plowed for close to 25 years, creating a better environment for the worms. Nightcrawlers are very picky about their environment, he says, for they do not like low, wet spots or high spots. They dislike high clay content but also cannot tolerate soil that is too sandy.

Van Hovel would like to apply manure to his land because the nightcrawlers are attracted to it "and populations would explode." He currently does not have access to manure, since he does not own any animals, but he says it is something he would like to do down the road.

Since seeding the worms, Van Hovel has noticed a clear change in the soil and has been able to cut back on fertilizer.

"I only use a starter fertilizer now," he says. "But I used to broadcast N, P, and K (nitrogen, phosphorus, and potassium). It's amazing what these creatures can do for you. It's all about economics and efficiency in farming, so if I can have worms do what fertilizer does at \$50 an acre, there is no reason not to. That's it in a nutshell why I did this."

*By Jason Peterson*