

# Vermicompost better than fertilizer

## Key Points

- Fraser achieved 25% higher garlic yields with vermicompost.
- Derived from dairy manure, this biofertilizer has organic potential.
- Enhanced resistance to disease is a substantiated benefit of compost.

By KARA LYNN DUNN

**A** 25% gain in garlic weight-gain was nothing Ed Fraser could turn up his nose at. In fact, the Churchville, N.Y., certified organic producer is intent on sniffing out more benefits of using “made in New York” vermicomposted dairy manure to amend his soil and suppress disease.

High tunnels, quick hoops, storage and mail order allow Fraser to have almost year-round sales of table and seed stock garlic and other vegetables. Just 20 miles southwest of Rochester, he’s one of eight growers supplying the 400-plus-member Good Food Collective CSA, or Community Supported Agriculture. And, he sells at the new Highland Park Winter Farmers Market.

In 2008, Fraser began applying Worm Power, a vermicompost made by 20 million red earthworms working across the road from Coyne Dairy in Avon, N.Y. There, worms convert 10 million pounds of manure into 2.5 million pounds of nutrient-rich compost over 75 days at North America’s largest vermicomposting facility.



**WORM POWER:** Compost from dairy manure is further processed by worms to make a better-than-fertilizer soil amendment.

New York Farm Viability Institute, or NYFVI, funding supported greenhouse and field evaluation of the vermicompost as a replacement for synthetic soil amendments. It also funded lab experiments aimed at better understanding how vermicompost suppresses *Pythium*.

“Our interest is in the potential for vermicomposting to reduce the dairy waste stream, convert cow manure into a product valuable for growers and gardeners, and reduce growers’ use of crop pesticides,”

says David Grusenmeyer, NYFVI managing director.

Fraser field-applied the vermicompost at fresh-weight rates of 2, 4 and 8 tons per acre to the planter furrows. Then he hilled each row, covering the vermicompost and garlic sets with soil.

He was more than pleased. Garlic treated with vermicompost was 25% heavier than the untreated garlic at harvest.

### Disease resistance is a plus

Cornell University lab trials have shown promise for applying the solid vermicompost and its non-aerated extract as a control for *Pythium aphanidermatum*, a disease common to many vegetable crops.

“Garlic doesn’t tend to have *Pythium* problems,” points out Fraser. “So I was looking for how well the compost would support plant growth. We saw a definite impact on leaf growth and weight gain.”

“The healthier and more vigorous the plants are with the microbiology in their root zone, the more the plants are able to thwart attacks from destructive crop pathogens and insect pests,” he elaborates.

Recent Ohio State University studies also concluded that crops fed with vermicompost are also more resistant to blight, bacterial wilt, parasitic nematode attacks and powdery mildew than those on synthetic fertilizers.

### Still more organic potential?

In 2011, Fraser expects to test a vermicompost extract. Worm Power has submitted its extract to the Organic Materials Review Institute, or OMRI, for listing as an approved organic input.

“If OMRI lists the extract by spring, then I’m interested in applying it as a drench to some of my garlic to evaluate its potential to increase bulb size and control *Fusarium*, a common disease in garlic,” says Fraser.

“If it works, vermicompost extract is an attractive product,” he adds. “It’s less bulky, would store easier and go farther on the fields than the solid compost, and be an input with hopefully at least the same results.”

Vermicomposting project manager Allison Jack in Cornell’s Department of Plant Pathology and Plant-Microbe Biology, says, “Vermicompost [is] an effective addition to

transplant media for greenhouse production in trials with tomatoes, cabbage and cauliflower. We need more research, however, into its potential for field application.”

Cornell is also testing vermicompost’s impact on other pathogens affecting garlic, strawberries, grapes, cabbage, cauliflower and tomatoes. An educational video and project reports are online at [www.css.cornell.edu/cumi/vermicompost.htm](http://www.css.cornell.edu/cumi/vermicompost.htm). For more details, contact Allison Jack at 607-255-7842 or [alh54@cornell.edu](mailto:alh54@cornell.edu).

Dunn writes from her farm in Mannsville, N.Y.

*Editor’s note: Funding for all NYFVI projects is at risk of cancellation due to Gov. Andrew Cuomo’s proposed 2012 budget.*



**BOUNTIFUL BULBS:** Ed Fraser found that vermicompost boosted garlic yields and improved plant health.

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