FARMER RESEARCH FACTSHEET · SOUTHERN SARE FS24-366

What you feed your compost tea matters

We used DNA sequencing to see which bacteria grow when vermicompost tea is fed different microbial foods, then tested a compost tea on tomatoes against water and fertilizer.

The study. One batch of vermicompost was brewed in well water with 5 single foods, 10 two-food blends, or no food, and sampled at 12 and 24 hours (longer brews were not tested). 16S DNA sequencing measured what share of the bacterial DNA reads came from each group.

HOW WE RATED EACH TEA (NO PLATE COUNTS WERE RUN)

LOW PATHOGEN

Enterobacteriaceae (the family with *E. coli* and *Salmonella*) at or below 0.1% of reads.

LOW PATHOGEN + EFFECTIVE

Low pathogen, and plant growth promoting bacteria (PGPB) make up 30% or more of reads.

PATHOGEN-PROMOTING

Enterobacteriaceae above 0.1% of reads.

Feed scorecard

Single feeds and two notable blends. All 15 feeds are in the final report.

FEED	12 HOURS	24 HOURS	PGPB %	ENTERO.
Unbrewed vermicompost	Starting compost, before brewing		1.7	0.00
No feed (control)	LOW PATHOGEN	LOW PATHOGEN	3.9 / 4.5	0.06 / 0.08
Humic acid	LOW PATHOGEN	LOW PATHOGEN	5.8 / 5.8	0.03 / 0.03
Molasses	LOW PATHOGEN + EFFECTIVE	LOW PATHOGEN + EFFECTIVE	**61** / **57**	0.04 / 0.00
Molasses + humic acid	LOW PATHOGEN + EFFECTIVE	LOW PATHOGEN + EFFECTIVE	**57** / **59**	0.04 / 0.02
Alfalfa meal	LOW PATHOGEN	LOW PATHOGEN	29 / 26	0.02 / 0.04
Fish hydrolysate	LOW PATHOGEN	LOW PATHOGEN + EFFECTIVE	16 / **51**	0.02 / 0.04
Kelp meal	PATHOGEN-PROMOTING	PATHOGEN-PROMOTING	16 / **47**	**0.12** / **0.44**
Molasses + fish hydrolysate	PATHOGEN-PROMOTING	PATHOGEN-PROMOTING	**36** / **50**	**1.37** / **2.01**

Percentages are share of bacterial DNA reads, shown as 12 hr / 24 hr. Bold green = PGPB 30% or more. Bold rust = *Enterobacteriaceae* above 0.1%.

Molasses led

Alone or with humic acid, it was the only feed rated low pathogen and effective at both times, driven

Humic acid stayed closest

It kept the tea most like the starting compost and low in *Enterobacteriaceae,* but added few

Kelp and fish blends lagged

Every kelp tea crossed the limit by 24 hours. Molasses plus fish hydrolysate was the least safe tea