

FACT SHEET

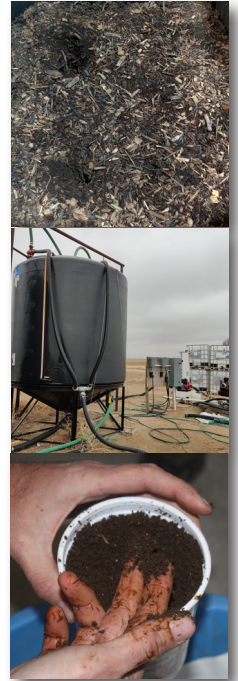
Comparing Compost Methods



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Compost Types & Quick Facts

	SPICE	Johnson-Su (static pile vermicompost)	Aerobic thermal (traditional)	Vermicompost
<i>What's special about the final product?</i>	<ul style="list-style-type: none"> · Less material lost through out-gassing · Higher humus level (except with extracts) 	<ul style="list-style-type: none"> · Fungal-dominant · N-use efficiency in the field can increase · UV degrades the solids (incorporate in furrow if applying solids) 	<ul style="list-style-type: none"> · Protozoa content · Overall organism diversity and food web representation 	<ul style="list-style-type: none"> · Quick vermicompost produces bacteria-dominated material · Slow vermicompost produces more fungi
<i>Time</i>	3+ months (quality increases over time)	1-2 years	50+ days (younger piles have more nematodes; older piles have more fungal spores)	2-18 months, depending on pile depth
<i>Labor</i>	LOW. Check temperature and water.	LOW. Water it.	HIGH. Turn daily, then weekly based on temperature and water.	MEDIUM. Continual feeding and water, but no turning.
<i>Special Equipment</i>	<ul style="list-style-type: none"> · Compost inoculant (DIY) · Thermometer 	<ul style="list-style-type: none"> · Red wiggler worms introduced after pile cools (1 month) 	<ul style="list-style-type: none"> · Compost turning equipment (i.e. front-end loader) · Thermometer 	<ul style="list-style-type: none"> · Red wiggler worms · Shallow, stackable trays
<i>Resources</i>	Gerry Gillespie	Dr. David Johnson Patrick O'Neill	Zach Wright Keith Berns	Jeremiah Picard Rodale Institute



General Guidelines

- How well you make compost can drastically affect the final product.
- Carbon-rich feedstock + time (12 months) = higher fungal content.
- Diverse feedstock leads to more diverse biology.

Application Methods & Rates

	Contains	Purpose	Notes
Extract, filter, and spray (pounds per acre)	Biostimulants (the chemicals and exudates from microbes in the compost).	Stimulate plants and biology already present in your soil, encouraging them to become more active.	Extract will also contain some living biology that may complement the biostimulants and be effective at lower rates.
Bulk spreading (tons per acre)	Humus, nutrients, organic matter, biology, and biostimulants	Bulk application of humus, nutrients, and biology.	Usually cost-prohibitive for large-scale operations.

These methods aren't one-size-fits-all. The best way to learn how your field will respond is by making a couple of them and setting up your own experiment!

Composting Progress in FARMS

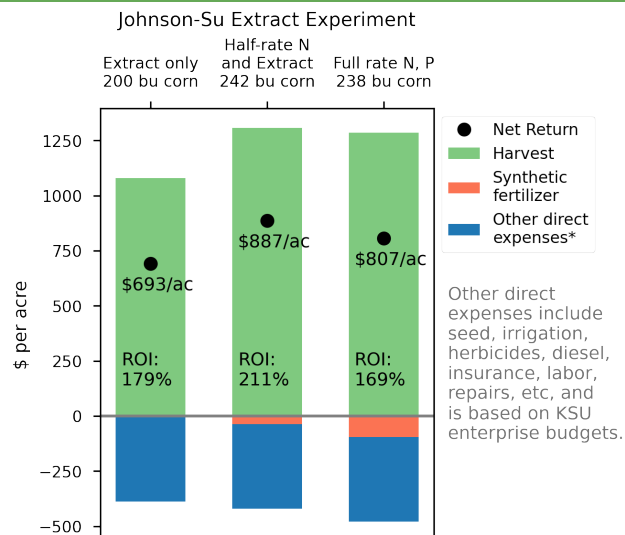
PRODUCER 1

Western KS - Johnson-Su

Seems like roots responded really well to soaking the seed in extract before planting – root development was excellent. Applying only extract with no N or P yielded 200 bu corn (see chart). Producer 1 observed that the extract seems to prime the system – his soils are depleted of fungus and biology.

Major successes: reducing N and P inputs

Making his own compost made it cost-effective to apply it across broad acres, which accelerated his soil health improvements.



PRODUCER 2

Western KS - Johnson-Su

Producer 2 applied extract on seed, in furrow, and over the top on dryland corn and milo. He saw a good response in the rhizosphere on the seed, good root development, clinging soil, and healthy-looking young plants, but that didn't translate to good yields this year. On both crops, there was very little synthetic N applied (20-25#) and only 3" of moisture since July. Next year he wants to try reducing (not eliminating) N – maybe we don't need a lot of N, but we need to apply it more often and in more diverse and plant-available forms? He wants to maximize residue and soil cover: if he can get a good thatch of residue, it will keep the soil more moist, which will foster biology and help grow a high-biomass crop next year. But getting that good thatch to begin with is a major challenge.



PRODUCER 3

Eastern CO - SPICE

Producer 3 used a hand sprayer to treat seed on the conveyor as it went into the seeder. He tried it on prozo, sunflowers, and corn, and got a good response - the crops did much better than he expected this year given the weather they got. He plans to invest in more equipment to treat seed more easily, and to apply it in furrow.

Extraction

Cycle water over a stainless steel screen filled with compost, until the compost breaks down and dissolves into the water, or fill a hessian bag full of compost and gently agitate it (like a tea bag) in a barrel of non-chlorinated water for 20 minutes. Filter it as it pumps onto the sprayer. Search "Young Red Angus apply compost extract" or "Johnson Su extractor" on YouTube for great how-to videos.

Application

Two producers say seed drench or soaking will give best results on the roots. Can also apply in furrow, or over the top. They make an extract with 5# compost per 100gal of water, and apply it at 20-25gal of extract per acre. This results in 1# compost per acre.

