

Case Study:

Marketing On-Farm Compost

The Northeast Recycling Council (NERC) is a non-profit organization that conducts research, hands-on projects, training, and outreach on issues associated with source reduction, recycling, composting, environmentally preferable purchasing, and decreasing the toxicity of the solid waste stream.

Integrating composting practices into farming operations and refining compost production and utilization methods can help farmers better manage farm organic waste, including manure and crop residues. The resulting compost can be applied for on-farm soil benefits and/or sold as a valued-added product. To expand and support farm-based compost markets in the Northeast, NERC was awarded a grant from the Northeast Sustainable Agriculture Research and Education (SARE) program. Resources developed by NERC for the project, as well as presentations from seven compost marketing workshops, are posted on NERC's website. NERC provided technical assistance to farm compost operations, including development of operation-specific marketing plans.

Fern Hill Compost **Red Creek, New York**

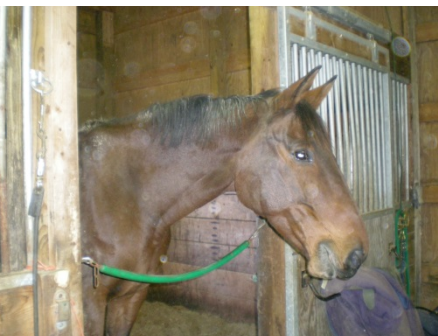
Overview

[Fern Hill Compost](#) started as the manure management system for Fern Hill Farm, an operation that breeds Thoroughbred horses for racing¹. The horse operation had generated a large accumulation of manure which, not being the primary focus of the farm, simply decomposed into the earth with little management. The farm proprietors, the Spaldings, however, became concerned with the environmental impact of uncontrolled manure decomposition on the ecosystem.

After consulting with the firm of [O2Compost](#), the Spaldings constructed a composting facility in the summer of 2009, adjacent to the farm's horse barn. The facility was designed with excess capacity in order to expand the farm operation by collecting manure and bedding from other small horse-keeping operations in the area. Fern Hill Compost was born and began a container service with a limited number of clients.

Through proper management of the organics composting process, Fern Hill Compost was able to maximize the benefits of using its farm generated manure and bedding to manufacture compost, while maintaining a very clean and healthy equine operation. The farm and other area horse operations that used Fern Hill's manure removal services realized the positive environmental benefits

¹ This case study reflects the first three years of the Fern Hill Compost operation. The operator started a full-time, off-farm job in 2012 and discontinued the collection and composting of off-farm manure and bedding.





for their horse-keeping operations—reduced smells, fly populations, leachate in waterways, and reduced parasites and pathogens in their operations.

Moreover, the Fern Hill Farm used the resulting compost as a soil amendment and realized the significance of creating a value-added product to increase farm revenues. The excess product was bagged and sold to garden centers and marketed through word-of-mouth.

Materials Composted

Horse manure and bedding comprises the feedstock used to make Fern Hill Compost. According to the Fern Hill Compost proprietor, “As compost feedstock goes, you can hardly find anything better than equine stall waste. The nutritional values of the resultant compost are higher than that made from most any other feedstock (typically twice the nitrogen of dairy manure), the carbon to nitrogen ratio is ideal, the porosity allows for effective aeration without additional bulking agents, and the moisture content is well within an easy range to compost.”

To ensure the high quality and purity of its compost, Fern Hill knows the quality of the diet fed to its own horses and has established a good relationship with horse owners provided collection services in order to know the diet of the animals and to ensure that contaminants, such as plastics, do not get tossed into the stall waste.

Compost Method and Equipment

Fern Hill Compost begins with the collection of horse stable waste, including urine, feces, and bedding (sawdust, wood shavings, and/or straw). Horse operations that sign onto the Fern Hill collection services receive one or more one-cubic yard polyethylene bins for cleaning out stall waste. Fern Hill provided weekly collection, including pressure washing and sanitizing the bins at the respective farms. Stall waste from the Fern Hill Farm horse operation is collected daily, using a pitch fork and wheelbarrow.

This material generally has the correct carbon to nitrogen ratio for composting. The material is mixed and fluffed to improve porosity, and water added as needed to adjust the moisture content of the material to 60%. The material is then composted in three, 10 cubic yard bunkers for aerated static pile (“forced air”) composting. The system contains PVC piping, laid into flooring of the bunkers, which is connected to an electric blower system designed to effectively aerate the composting organics. The blower cycles on and off 24 hours a day with the objective of maintaining the materials at temperature of 131°F, or higher, for a minimum of three days to sufficiently destroy any pathogens and weed seeds and promote rapid decomposition.

Controlled by pile temperature, timers, and delivery valves, the proper oxygen level is maintained throughout a 30-day active composting process. The bunkers have concrete retainer and divider walls. A roof covers all bays to keep rain and





snow off the pile and to provide shade during the summer months. The material in each bin is also protected with a special compost fabric cover which aids in moisture, temperature, and odor control.

Feedstock and temperatures are closely monitored. Temperatures are recorded from multiple sample points within the piles to assure uniformity and that pasteurizing conditions are attained. Typical temperatures will run as high as 160°F, remain above 131°F for a minimum of three days, and then drop into the 100°F – 110°F range. These temperatures are sufficient to kill pathogens and weed seeds, but not the beneficial microbes needed to decompose the organic material.

Each composting cell has a water addition system to adjust the moisture level in the feedstock, as well as a leachate collection system in the floor to allow any liquid that drains out of the pile to be returned to the cell, rather than leaching to the environment. Every 7 - 10 days during the active stage of composting, the material is removed, remixed, and placed in another cell, where thermophilic temperatures for active composting are once again maintained.



After the active composting stage, the material is removed, and processed through a hammermill in order to grind the cellulosic and lignin components and moved to a curing pad under a breathable yet water-shedding fabric cover. The material is stored for a minimum of two months in order to properly cure. In-house testing is done to assure a stable and mature product prior to packaging.

Marketing

Fern Hill Compost effectively promotes the value of compost as a soil amendment through its website marketing and customer education. Its marketing not only promotes the benefits of compost, but successfully focusses on Fern Hill Compost products and what sets Fern Hill Compost and its quality feedstocks apart from other composts.

Additional market capacity building and strategies includes:

- Designing an appropriate compost operation with a compost consultant to meet on-farm manure management needs, compost sales goals, and to allow for extra feedstock capacity to provide services for other equine operations and generate revenues through collection of off-site feedstock
- Conducting an extensive literature review and research on compost businesses, techniques, operations, and sales strategies
- Researching compost marketing techniques
 - Attended a Northeast Recycling Council compost marketing workshop, 2010
 - Development of a compost marketing plan
 - Consulting with compost experts, on pricing, packaging labels, etc.
- Researching and testing appropriate packaging to meet the needs of customers





- Researching area compost products, how sold, pricing, etc.
 - Good use of labeling and simple packaging to hold down costs, be attractive, and meet the needs of customers
 - Excellent information on label – benefits, material analysis, use, etc.
- Effective use of word-of-mouth to promote the product and establishing a presence at garden shows, farmers markets, festivals, and other events to achieve greater visibility
- Heavy use of low cost, social media to promote product and with establishment of a Facebook page in February 2011, regular postings and use of Twitter
- Effective use of the Fern Hill Compost website, established in March 2011, as an educational tool for selling compost and to meet targeted customer needs; specific information on Fern Hill Compost and its specific benefits, and uses of compost
 - Good use of customer testimonials
 - Pictures of plants grown with compost
 - Compost analysis is on website
 - Successful use of e-commerce for product sales
 - Posting of farmers markets and retail outlets for product availability
- Developed list of local garden centers and began paying sales calls to market material and inquire about getting product into the retail settings. Handed out compost samples, ballpoint pens (with company information on it), business card, and ordering information. Starting out small and local to ensure product delivery and test sales

Derived from Horse Manure Not Processed above 131°F
Wood Seed Free Nutrient Rich

FERN HILL COMPOST

USES

- House Plants
- Vegetable Gardens
- Flower Gardens
- Lawns
- Trees and Shrubs

BENEFITS

- Improves soil structure and porosity, and encourages vigorous root growth
- Contains humus, and is a key source of weed-free organic matter – buffers soil pH
- Micro and macro nutrient rich – Makes nutrients more available for plant uptake
- Reduces chemical fertilizer requirements by allowing plants to more effectively utilize nutrients
- Reduces watering requirements by improving moisture holding capacity
- Adds proliferation of soil microbes and supplies beneficial microorganisms

HOW MUCH DO I NEED?

- Rototill 2-3" in gardens (Use 3 bags per 25 sq. ft.)
- Top-dress 1" in established gardens (Use 2 bags per 25 sq.ft.)
- Mix 25% in backfill for new plantings of trees and shrubs

MATERIAL ANALYSIS (typ)

pH	6.96
Conductivity	6.9
Total Nitrogen	1.83%
Phosphorous	0.22%
Potassium	1.89%
Organic Matter	42.85%

Produced by Fern Hill Compost
8661 Oak, NY 12143
315-427-2851
www.fernhillcompost.com

WT 35# Volume 1 Cu. Ft.

Containing 100% Organic Compost

Compost Utilization, Customer Base, and Sales

One cubic yard dumpsters for collection of manure and weekly pickup service are provided to horse operation customers. A collection fee of \$48 a month for one bin and \$28 per month for second bin is charged.

Fern Hill Compost products include:

- Bulk compost
- Bagged compost in 1 cubic feet, 35 pound bags
- Premium select compost, 7 liter bag
- Value pack: Two, 7 liter bags

Packaged product, in two different sizes is sold through the Fern Hill website and through retail outlets and a regional farmers market. Bulk purchase is offered, along with delivery at \$1 per mile; a 3-cubic yard minimum order is required for delivery.

The Fern Hill proprietor sells packaged and bulk product at the Central New York Regional Market in Syracuse. Fern Hill compost is also marketed through other local farmers markets, garden centers, hardware stores, and retail outlets.



Challenges and Solutions

Challenge: Developing a business model for composting on-farm manure in a cost-effective and environmentally-sound manner.

Solution: Developing a sound foundation in the composting business through research and consultation with experts; attending compost marketing workshop and researching effective marketing techniques; and, application of gained knowledge in design, construction, and operation of compost system.

Challenge: Stall cleaning for the farms being serviced would freeze in the poly-containers, making emptying them into the collection vehicle difficult.

Solution: Applying a release agent to the inside of the containers after emptying and cleaning them. The release agent formula was developed by the proprietor from a beet juice and vegetable oil base for ice melting and non-sticking qualities respectively.

Challenge: Building a successful compost operation that will supply sufficient revenues for a sustaining family income.

Solution: A temporary solution was to undertake a full-time off-farm employment position while continuing to manufacture compost using on-farm feedstocks.

Future Plans

Due to the economics of trying to operate a compost business and make a livable wage, founder and owner of Fern Hill Compost, Peter Spalding, took on a full-time off-farm job in 2012. As a result, the off-farm manure collection service was halted at the end of April 2012; on-farm manure and bedding is still being composted. The compost operation is managed on the weekends selling bagged product wholesale to preferred accounts and bulk product retail. The result for the spring 2013 sales season was a sellout of all inventory.

Mr. Spalding worked with the Wayne County Soil and Water Conservation District to submit a proposal for grant funding from the New York State Environmental Protection Fund, Agricultural Non-Point Source Abatement and Control Program. The scope of the project includes "heavy use area protection" and an access road. The project includes constructing an extension to the concrete apron on the lower side of the composter, a retaining wall, a concrete pad for product curing /storage, grading, and roadway improvements. The funding was received and construction began in November 2013. Ultimately a building will be constructed over the pad to house the bagging equipment and finished goods storage.

Mr. Spalding hopes to once again operate Fern Hill Compost on a full-time basis in the near future.



For More Information

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