Transfarmation®

Faaborg Farm Pilot Project

GRANT REPORT

Reporting Period: June 2023–June 2024

Amount Granted: $15,000

Farm Location: Radcliffe, Iowa

Former Farm Type: Finishing pig farm

Farming Method Tested: Specialty-mushroom cultivation inside an existing building

Recommended for Other Farmers? Yes

Biggest Learning: This project indicates that farmers can swiftly complete the building stage of their projects with the requisite motivation and technical assistance. The Faaborgs' rapid progress from purchasing materials to growing mushrooms within the grant period provides a strong example of how quickly a pilot project can scale up to a full-fledged operation. By starting at a smaller scale, the Faaborgs were able to refine their growing methods in a low-risk environment, begin building their brand, and connect with potential customers. The Transfarmation Project® encourages this approach as a healthy and sustainable way to build a new farm business. However, starting a new farm business with a focus on value-added products (VAPs) can be challenging. Instead, expert consultants recommend prioritizing fresh mushroom production, as the market is larger, the path to income is faster, and lower production costs can lead to higher profit margins. Fresh mushroom production is also simpler from a distribution and logistics viewpoint, especially for farms handling mushroom inoculation in-house. Any unsold fresh mushrooms can be dehydrated and turned into VAPs later.



Conversion Plans: *Mushroom Operation Flow Chart* and *Critical Elements of a Mushroom Fruiting Room*

On June 9, 2023, Tanner Faaborg received a $15,000 Bo Halley research and innovation grant for the Faaborg Farm pilot project. Tanner's parents, Tammy and Rand Faaborg, began raising pigs as a side business after a family member gave them a few to care for. Over the years, the operation expanded, and the family eventually entered into a contract with an integrator. But it wasn't long before they began noticing serious issues with the industry. After a year of working with Transformation, the family made the bold decision to end their 30-year tenure as pig farmers and pursue a full farm conversion. Their pilot project enabled them to start mushroom farming at a small scale, with plans to eventually expand the operation into their former hog barns.





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Table 1. Stages of transition and time required

Reporting quarter	Month	Estimated timeline	Actual timeline
Q1	June 2023	Complete construction of grow operation and begin straw block production	Built mushroom grow space: 332.5 hours Started mushroom production: 249 hours
	July 2023		
	August 2023		
Q2	September 2023	Create VAPs	Continued mushroom production: 342 hours Began value-added production in November
	October 2023		
	November 2023		
Q3	December 2023	Secure sales contracts and ramp up to 100% capacity	Continued value-added production Started sales in the last month of the quarter Started marketing in the last two weeks of February
	January 2024		
	February 2024		
Q4	March 2024	Plan expansion into converted hog barn	Began online sales: 40 hours Produced in-house lion's mane blocks: 41 hours Cultivated lion's mane mushroom coffee: 70 hours
	April 2024		
	May 2024		



Preparing to hang the tent framework to house the mushroom grow tents



Mushroom grow tent setup



Production setup inside the tents

Timeline

Within the first quarter, the Faaborgs converted an existing building-workshop on their farm into a functional mushroom-growing space. By the end of the quarter, they had begun harvesting and powdering lion's mane mushrooms to create VAPs.

Table 2. Time spent building out a mushroom-growing space (in hours)

GENERAL SITE PREP				
Grow tent setup				93
Electrical work				52
Grow tent setup: Includes all environmental controls for temperature, humidity, air exchange, and light	**Research and ordering materials**	**Unpacking**	**Assembly**	**Totals**
Incubation tent	3	.5	4.5	8
Fruiting tent 1	7	.5	22	29.5
Fruiting tent 2	7	.5	22	29.5
Straw inoculation setup: Includes buildout of the stations for inoculating, shredding, soaking, draining, mixing, and packing mushrooms and racking straw bags	2	.5	48	50.5
Harvest station setup: Includes buildout of the harvest table, bins, scale, and CoolBot	2	1	67	70
			TOTAL BUILDOUT TIME	**332.5**





Tammy and Rand Faaborg



Tanner and Tyler

Table 3. Farmer reflections on the buildout stage

	Which tasks were more or less time-intensive or difficult than expected?	Farmer recommendations
General site prep	Cleaning the building to the required standards took longer than expected, as did the additional electrical work. We also decided to build a structure made of greenhouse plastic inside the building to house the tents and provide added protection and insulation.	Budget more time for site prep than you might expect to need; indoor mushroom cultivation requires an extremely clean and sanitary environment, which requires substantial time, resources, and infrastructure.
Inoculation and grow tent setup	The ductwork took longer than expected and posed a challenge in meeting environmental requirements while minimizing the risk of cross-contamination.	Create detailed plans and drawings before beginning your buildout. Even simple sketches can help prevent missteps and validate assumptions.
Straw inoculation setup	Setting up the racks took longer than anticipated.	Build your own drain table, if possible; it's relatively easy and can save both time and money.
Harvest station setup	Cooler installation took longer than expected.	



Blue oyster mushrooms growing from in-house inoculated bags



Oyster mushrooms

In the second quarter, the Faaborgs identified lion's mane and reishi mushrooms as their primary production focus and began preparing 10 lb. straw bags for in-house inoculation of blue oyster mushrooms.

In the third quarter, Tanner reported challenges with ice forming on the straw as part of the drying process for in-house inoculation. Without HVAC in the building, water froze as the straw dried. The Faaborgs remedied this by using a jet heater to dry the straw while it was on the drain table after pasteurizing. They also purchased a bottling machine to produce tinctures from their dried mushrooms. Marketing efforts began with the launch of their website and social media. Tanner's brother, Tyler, added that they had created labels for the tinctures and were preparing the products for sale.

By the final quarter, the Faaborgs had added mushroom coffee to their product lineup. They had also started making their own 5 lb. lion's mane blocks and experimenting with different substrates for oyster cultivation.

Project-Related Tasks

In the first quarter after the initial buildout, daily tasks included checking environmental controls, monitoring for contamination, and collecting data. Weekly tasks involved cleaning, harvesting, producing straw blocks, dehydrating mushrooms, and removing spent blocks.

In the second quarter, daily tasks involved checking and treating mushroom blocks for contamination, maintaining equipment, and logging data. Weekly tasks included tent cleaning, harvesting and dehydrating mushrooms, branding, and marketing. Adding blocks to grow tents became a monthly task during this quarter.

During the third quarter, daily tasks continued to include checking environmental controls, monitoring mushrooms for contamination, and collecting data. Weekly tasks included cleaning; producing straw blocks; and marketing, branding, and producing value-added goods. While no monthly tasks were specifically noted for this quarter, other recurring tasks included harvesting, dehydrating mushrooms for VAPs, and removing spent blocks. These tasks were performed either daily or weekly, depending on the species of mushroom.

In the final quarter, daily tasks included monitoring mushroom development and checking climate controls inside the grow tents. Weekly tasks included harvesting, processing, and cleaning mushrooms; producing VAPs; sales; and composting. Notably, the Faaborgs expanded their growing capacity by installing additional grow tents.

Table 4. Labor hours required

Project quarter	Labor per week (in hours)
Q1	41.3
Q2	41
Q3	27
Q4	26



Lion's mane



Reishi

Fresh Mushroom Production

The Faaborgs experimented with a handful of mushroom species and strains to determine which would work best given their environment, setup, and the ready-to-fruit blocks they received. Based on the mushroom species that performed well—and their intention to create VAPs, such as tinctures and mushroom coffee—they ultimately decided to focus on reishi, blue oyster, and lion's mane.

Crop	Red reishi	Blue oyster	Lion's mane
Q2 days to harvest	68*	30	13
Q2 yield	12.5 lb.	9.8 lb.	245.9 lb.
Q3 days to harvest	70*	n/a	11–12
Q3 yield	11 lb.	n/a**	225 lb.
Sales	Did not attempt to sell fresh products. Mushrooms were dehydrated and stored for use in VAPs, such as lion's mane or reishi tinctures and lion's mane coffee.		

*Red reishi normally takes about 42 days/6 weeks to harvest, but the Faaborgs reported a significant delay in growth due to an extreme cold snap and power outage.

**In May, the Faaborgs discovered that they were using too much magnesium in their oyster straw bags, preventing mushrooms from growing properly.



Mushroom infusion for tinctures

Value-Added Production

In the third and fourth quarters, the Faaborgs' VAPs included two types of tinctures, reishi and lion's mane, as well as lion's mane coffee. Tincture production—including harvesting, dehydrating, and bottling—took approximately two months for both varieties. The lion's mane coffee production involved two steps: dehydrating and processing the mushrooms, which took the Faaborgs about one week, and handing them off to the coffee supplier, who took an additional five days to package the final product.



Lion's mane mushroom coffee

Sales

Once the Faaborgs completed production of their VAPs, they started selling to friends and making in-person sales. In the final quarter, they began making sales online through their website, 1100 Farm. Tinctures were priced at $17 per 1 oz. bottle and the lion's mane coffee blend at $20 per 8 oz. bag.*

The Faaborgs noted that selling to friends and family took the least effort, as they were eager to see the business succeed. While online sales initially took more effort, time, money, and other resources, they required less ongoing work by the fourth quarter, aside from social media marketing and website maintenance. In-person sales proved to be the most labor-intensive, involving direct conversations with customers and personal delivery of products.

*Mercy For Animals does not endorse any products.

Sufficiency of Project Funding

The Faaborgs submitted an original budget exceeding the grant funds awarded to them. They covered additional project expenses out of pocket and tracked them separately for comparison.

Table 5. Proposed and actual budgets

Proposed budget		Actual budget	
Ready-to-fruit mushroom blocks	$8,896.00	Site prep	$3,430.40
Inoculation supplies: shred, soak, drain, inoculate, incubate	$6,688.82	Mushroom fruiting space supplies: Greenhouse and grow tents	$8,765.01
Mushroom fruiting space supplies	$5,101.88	Production: Ready-to-fruit mushroom blocks and inoculation supplies	$14,845.47
Harvest and storage	$3,571.45	Harvest setup	$507.16
Value-added production	$800.00	Sales: Branding and web design	$7,200.00
Miscellaneous: Cleaning and handling supplies	$800.00	Cleaning and maintenance	$171.02
Total project cost	**$25,858.15**	**Total project cost**	**$34,919.04**



Lion's mane coffee VAP

Unexpected Challenges and Lessons Learned

In the first quarter, the Faaborgs reported that the project had gone over budget due to unforeseen expenses. Cleaning the production area before the buildout took longer than expected. Once mushroom cultivation began, they encountered unexpected contamination issues. Without a high-quality dehydrator, the drying process proved to be time-consuming. The Faaborgs recommend using a food processor to prepare mushrooms for dehydration, as breaking them by hand was onerous.

In the second quarter, the Faaborgs continued facing contamination challenges and developed a new protocol for maintaining a cleaner environment. They observed yellow discoloration in their lion's mane mushrooms but had difficulty pinpointing the cause. They also encountered issues with their blue oysters and considered adjusting the environmental conditions to troubleshoot, knowing it would take time to find the right balance. Maintaining adequate warmth in the tents during winter was also a challenge. The oyster mushroom blocks they had inoculated in-house delivered poor yields, which they attributed to several factors: incomplete drying of straw, inadequate cleanliness during inoculation, use of soy hulls in pellet form, and recurring contamination. In response, they planned to move away from using soy-hull pellets in their substrate.

In the third quarter, the family emphasized the importance of internal communication, noting that they sometimes forgot to communicate workflows. Packaging, design, and labeling took longer than expected. During the cold weather, they struggled with straw block production and mold contamination, which ultimately led them to halt block production. They

experimented with different substrate recipes—transitioning from soy-hull pellets to crumbles to soy husks—but struggled to source materials. Yields remained below expectations, but the family continued to innovate, including adding a space heater in each grow tent to combat the outdoor temperatures that dipped to 20°–30°. The Faaborgs also incorporated value-added production into their workflow and reported gradually finding more efficient methods.

In the fourth quarter, the Faaborgs focused on managing CO_2 levels in the tents and felt they better understood the environmental conditions necessary to produce better yields. They moved from ready-to-fruit blocks to producing their blocks in-house, which proved easier and more cost-effective than expected and resulted in equal or better harvests.

What would the farmer have done differently?

The Faaborgs reported learning valuable lessons about biosecurity during the inoculation process and developed better protocols for cleaning and sanitation. While they acknowledged ongoing challenges, they expressed satisfaction with the progress they'd made. In hindsight, they wished they had known which soy hulls to buy for straw block production and had added a disinfection space before inoculation. By the final quarter, they also wished they had started making their own lion's mane blocks earlier, given the improved margins.

Hiring an external firm for online marketing was one of Tanner's main regrets. While the Faaborgs understood the importance of online marketing for generating sales, they felt overwhelmed managing it in-house. Due to budget limitations, they chose to partner with a promising startup that seemed genuinely passionate about the Faaborg project and had a sizable following on TikTok. However, the firm didn't market the Faaborgs' products on TikTok, and the family saw little measurable return on investment. In the end, they found that more than 90% of their engagement and following came from their own online presence and speaking engagements. Looking back, Tanner noted the value of keeping things simple and focusing on authentic content.

Farmer Achievements

A quarter into the project, Tanner reported being happy with yields and stated that the facility they had designed and built was very effective for the investments made. In the second quarter, the Faaborgs expressed satisfaction with their lion's mane yields and were encouraged by the growing inventory of dehydrated mushrooms for later use in value-added production. Tammy and Tanner's brother, Tyler, joined Tanner as part of the third quarter reporting. Tyler reflected on how much the family had learned about the mushroom-growing industry and all that they had accomplished through tincture production.

Tammy Faaborg noted the positive feedback they had received from tincture users, including stories from customers who had seen results. She felt that the family was not just selling a product but fulfilling a larger mission to increase customer health and wellness.

At the one-year mark, the Faaborgs reported producing and harvesting their own lion's mane blocks. They continued to see steady sales and received positive testimonials from customers who had experienced health improvements after using their tinctures.



Reishi tinctures