



Transfarmation®

Shipping It Out: Cultivating Mushrooms in a Retrofitted Shipping Container

GRANT REPORT

Reporting Period: March 2022–March 2023

Amount Granted: \$15,000

Farm Location: Lumberton, North Carolina

Former Farm Type: Broiler

Farming Method Tested: Specialty-mushroom cultivation inside a shipping container

Recommended for Other Farmers? Yes

Biggest Learning: Farmers can save money and time by purchasing insulated shipping containers.

Conversion Plan: [Shipping Container Mushroom Cultivation Guide](#)

A Bo Halley Research and Innovation Grant totaling \$15,000 was awarded to Craig Watts for his Shipping It Out project. Craig raised chickens for 23 years but started speaking out against the chicken industry in 2014 and exited his contract in 2016. Receipt of this grant enabled him to purchase a shipping container to grow mushrooms inside one of his idle chicken houses.





Important Disclaimer

This document ("Document") or any written material provided to you by Mercy For Animals, Inc., (including Transformation™) or any of its affiliates (together, "MFA"), including but not limited to information or written material prepared by third parties, should not be construed as advice or in any way an endorsement or a recommendation by MFA.

The Document should not form the primary basis for any decision that you make in relation to matters referenced herein and is not a substitute for performing any and all necessary due diligence, including consulting independent agricultural, legal, tax, finance, and other expert advisors.

Neither MFA nor any of its officers, directors, agents, or employees makes any warranty, expressed or implied, of any kind or accepts liability for any losses, damages, costs, or expenses of any kind or description relating to the adequacy, accuracy, or completeness of the information contained in the Document.

The Document is for your general information only, and MFA is not soliciting any action based on it. Any view or opinions expressed are valid only as of the date indicated. MFA does not accept any responsibility to update any views, opinions, or other information contained in the Document.

© 2024 by Mercy For Animals, Inc. All rights reserved.



Poultry house exterior



Poultry house interior before transition



Poultry house interior after repairs and preparation



Shipping container set up inside poultry house



Mushrooms growing inside shipping container

Project-Related Tasks

Craig's tasks in the first quarter consisted of project planning, learning about mushroom production, and cleaning the farm in preparation for delivery of his shipping container. In the second quarter, his daily, weekly, and monthly tasks focused on setting up the shipping container, repairing the plumbing in the chicken house, and consulting with others. He researched "pay-what-you-can" selling models and looked into school educational tours for fall 2023. Craig said he didn't have any day-to-day tasks during his third quarter because he had not begun mushroom production. He started researching methods to produce his own blocks for mushroom growing in the fourth quarter, noting that using pre-inoculated blocks is easier but decreases profit margins. Craig started researching insulation options for the shipping container after recognizing the need for better environmental control.

Unexpected Challenges

Craig stated that the estimated startup cost was eye-opening in the first quarter. He reported that an unexpected challenge was the increased costs of materials, fixtures, and the shipping container. Craig noted in his third quarter that he had run into plumbing and electrical issues, since the chicken house had been idle for about six years. His response was to replace the wiring and plumbing. He noted in his fourth quarter that his expenses were more than originally estimated because some of the infrastructure needed to be replaced.

Was the funding sufficient for the project?

The funding awarded for this project was initially \$10,000, but Craig had spent \$12,000 within the first six months. He was awarded an additional \$5,000 on September 9, 2022. Craig noted in his reports that exceeding the budget was due to increased material costs and the unexpected plumbing and electrical repairs.

Table 1. Stages of transition

Task	Time to complete
Securing shipping container	1 hour
Prepping chicken house floor: removing feeders, adding clay, pulling shipping container inside	40 hours
Painting and waterproofing the inside of shipping container	8 hours
Repairing poultry house plumbing	8 hours
Determining which circuits to use to connect the chicken-house controller to the shipping container's environmental controls	4 hours
Production and marketing conversations	8 hours
Securing almost all equipment needed to start production	3 hours
Equipping the shipping container with the necessary environmental controls and shelving to start mushroom production	24 hours
Ordering and picking up equipment and pre-inoculated blocks for shiitake mushrooms	16 hours



Table 2. Estimated and actual project costs

Estimated costs		Actual costs	
40' storage unit, insulated	\$4,000	Shipping container	\$4,200.00
Air-filtration system	\$750	Poultry house prep and maintenance	\$2,169.14
Beverage cooler	\$2,950	Remediation—clay soil, backhoe and skid steer rental	\$6,447.75
LED grow lights	\$108	Repairs, plumbing and electrical	\$1,199.88
Shelves	\$1,080	Grow room supplies	\$437.74
Box fan	\$100	HVAC	\$611.88
Humidifier	\$130		
Chlorinator	\$350	Out-of-pocket project-related expenses	
CO ₂ monitor	\$250	Fuel	\$783.23
AC units	\$1,650	Utilities	\$1,173.30
CoolBot	\$400		
Misc. plumbing	\$200		
Misc. electrical	\$1,000		
Total estimated cost	\$12,968	Total actual cost	\$17,022.92

What would the farmer have done differently?

When Craig started his project, he wished he had purchased the shipping container six months earlier because of the rise in cost. He stated in his third quarter that he wouldn't change anything; he limited his pilot project to mushrooms and would incorporate seasonal produce to supplement. After his fourth quarter, Craig wished he had secured more customer leads and tentative commitments before beginning mushroom production. He learned that establishing a customer base was his biggest obstacle and that he needed to define his market. He felt he had experimented enough with shiitake mushroom production that it was generally predictable.

Time Frame

Craig did not mention an expected versus actual time frame for his project or its stages. The only setback mentioned was having to redo the plumbing and electrical.

Farmer Achievements

Craig noticed an overwhelmingly supportive response from people when sharing his plans for the farm. In his third quarter, he was finally ready to start producing mushrooms. One year into his project, Craig felt he had achieved bringing an idea from a few years before to fruition. Craig's first yield of shiitake mushrooms was 100 pounds.

