



# FUNGI PERFECTI<sup>LLC</sup>

*Makers of Host Defense Mushrooms<sup>®</sup>*



# 2019

## SUSTAINABILITY REPORT





## PLANNING FOR A BETTER FUTURE

Sustainability has been an intrinsic thread woven into the fabric of our company from the beginning. As we've grown over the past 40 years, how we define and implement sustainability has also evolved. While we've always considered our environmental footprint and worked to limit the negative impact of our business, we are increasingly focused on how we can move forward in a way that also creates a more positive impact for people and planet.

As our production and operations have *mushroomed*, so has our environmental footprint, and the need to formalize our commitment to sustainability. In 2018 we established a Sustainability Committee—an interdepartmental team of passionate individuals—to assess the environmental impact of our activities, identify the most impactful opportunities for improvement, and promote an ambitious, long-term sustainability strategy.



# FUNGI PERFECTI<sup>®</sup> LLC

*Makers of Host Defense<sup>®</sup> Mushrooms<sup>™</sup>*

From the beginning, Fungi Perfecti, LLC—makers of Host Defense<sup>®</sup> Mushrooms<sup>™</sup>—has long been a favorite among consumers of natural products. Always at the cutting edge of mycological research, we continuously strive to find new and effective ways to support human health with the highest quality mushroom supplements. A strong commitment to research and education is among the fundamental building blocks of the Host Defense<sup>®</sup> brand and is what continues to set us apart in the industry.

HOST DEFENSE<sup>®</sup>  
*Mushrooms<sup>™</sup>*

**#1** BEST-SELLING  
MUSHROOM  
BRAND IN THE U.S.<sup>†</sup>



<sup>†</sup> SPINSscan Natural / Natural Products Supermarkets >\$2MM / Total US Natural Channel / Mushrooms Ingredient Report / 52 Weeks Ending 6/14/20.



## OUR CARBON FOOTPRINT: ESTABLISHING A BASELINE

One of the most important goals of the Sustainability Committee is addressing our carbon footprint. The first step was conducting a thorough assessment of our emissions for 2018. This gave us a starting point—a baseline year—so that we can track future progress, quantify our accomplishments, and ensure we have set ambitious yet realistic goals. In order to better understand our climate impact, we “normalized” the emissions data by calculating kilograms CO<sub>2</sub>-e (carbon dioxide equivalent) released per kilogram of mycelium we grew. This is also known as emissions intensity.

Fungi Perfecti® is growing, so our total emissions for 2019 were greater than 2018. However, our production efficiency increased—so our emissions intensity was reduced by nearly 15%!

## OUR >10X CLIMATE COMMITMENT

One of the biggest steps we have taken is working to eliminate our carbon footprint. In 2019, by adopting numerous efficiency measures, we made significant progress toward carbon neutrality. Then, we took it a step further by sponsoring offset projects that actively reduce carbon emissions, establish carbon-sequestering forests, and help improve the lives of people living in poverty in the process (see page 4).

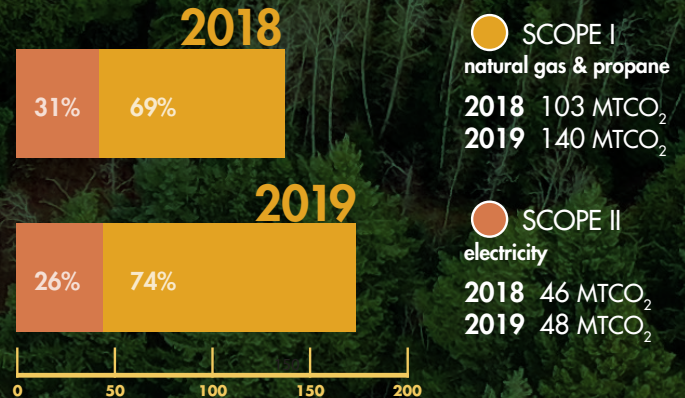
Between our internal emissions reductions and the carbon-offsetting projects we’ve sponsored, we have gone beyond achieving net zero carbon emissions to eliminate additional carbon dioxide from the atmosphere. Many companies offset an additional 10% beyond carbon neutral to be considered climate positive, but for us that was just not enough...



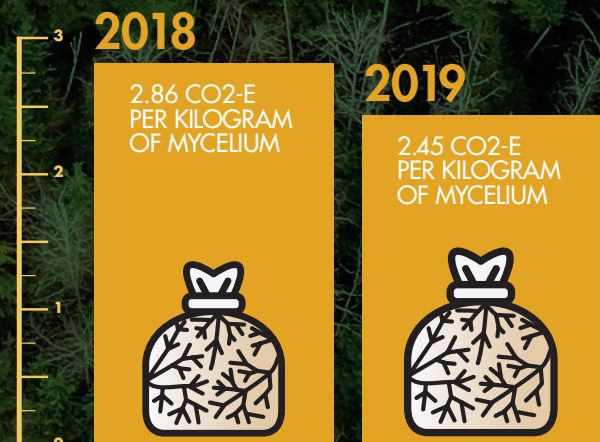
**WE'RE PROUD TO SAY THAT  
AS OF 2020, FUNGI PERFECTI®  
IS NOW CLIMATE POSITIVE,  
OFFSETTING OUR BASELINE  
CARBON EMISSIONS BY  
MORE THAN TEN TIMES!**

## SCOPE 1 & 2 EMISSIONS

METRIC TONS CO<sub>2</sub>-E (MTCO<sub>2</sub>)



## CO<sub>2</sub>-E PER KILOGRAM OF MYCELIUM



We grew more mycelium per kg of CO<sub>2</sub>-e in 2019, resulting in lower normalized emissions.

## OUR CARBON FOOTPRINT



**2018** 148 METRIC TONS  
**2019** 188 METRIC TONS



# OUR CLIMATE COLLABORATIVE COMMITMENTS

The Climate Collaborative is a group of concerned businesses from the natural products industry working collaboratively to reverse climate change. In joining this group, we set goals to address climate change in the following areas:

- **RENEWABLE ENERGY**

Shift away from fossil fuels at the earliest possible date.

Adopt alternative energy sources, such as:  
solar, wind, hydro, and purchasing green power.

- **ENERGY EFFICIENCY**

Improve efficiency of buildings, lighting, and HVAC equipment.

- **FORESTS**

Work toward 100% deforestation-free commodities.

- **PACKAGING**

Reduce materials, or 'source reduction'.

Replace virgin materials with post-consumer recycled content.

Replace traditional plastics with biopolymers.

Redesign packaging to use materials more efficiently.

- **TRANSPORTATION**

Develop a green transportation action plan and improve transportation efficiency.

Develop performance metrics to track transportation efficiencies.

Establish a method for tracking reduction of black carbon and other short-lived pollutants.



## OTHER GOALS

In addition to the goals we set with The Climate Collaborative, we have made additional efforts to help people and planet:

- **E-WASTE**

Collect and recycle all of our e-waste.

- **OUTREACH / BEEFRIENDLY™**

Expand our education, outreach, and BeeFriendly™ initiatives.



# PROGRESS

## RENEWABLE ENERGY

We have been working to shift away from fossil fuels, and transition to 100% renewable electricity by the earliest possible date.

We installed a 12 KW grid-tied photovoltaic system on the roof of our main lab. These solar panels will produce an average of 12,000 KW per year, which is roughly 3% of our total electric consumption at that facility. We have the potential to expand this system to 100 KW—which would produce up to 100,000 KW per year—allowing us to generate nearly 30% of the electricity needed to run the facility on-site.

Currently, 98% of the power that we purchase through Mason County PUD comes from renewable sources, including wind and hydroelectric.

## ENERGY EFFICIENCY

We have been working closely with our energy supplier to increase energy efficiency, including upgrading inefficient lighting with Fluorescent and LED bulbs which produce the same amount of light using far less energy, and installing more efficient HVAC (heating, ventilation, and air conditioning) equipment in our production labs. We have significantly improved the energy efficiency of our information technology (IT) systems, reducing the average energy consumption for our computer workstations and servers by roughly 70%.

We also consolidated multiple office locations under one roof in 2019, which reduces energy use and greatly increases operational efficiency.

## FORESTS

A majority of the paper and cardboard we use for our printed materials and packaging contain recycled fiber or are made from 100% recycled materials. We are also assessing our supply chain to make sure we are using the most environmentally friendly options available.

In addition, we are sponsoring offset projects that establish carbon-sequestering forests.



**98%**

**RENEWABLE ELECTRICITY**  
(purchased through Mason County PUD)



**70%↑**

**INCREASE IN  
LIGHTING EFFICIENCY**  
(HID to LED conversion)



**70%↑**

**INCREASE IN  
WORKSTATION EFFICIENCY**



**7500kwh**  
**GENERATED BY SOLAR**

**EQUIVALENT TO:**



**1,376,100**  
cell phone charges



**3500**  
kg coal burned



**111,900**  
hours watching TV



# OFFSET PROJECTS

In addition to decreasing our negative impact, we're actively increasing the positive impact we have on both the environment and in our local and global communities.

Carbon offsetting is an oft-debated topic, and not all offsetting projects are created equal. Choosing a fully transparent carbon offsetting partner was very important to us, and we did significant research to ensure that our efforts were going to a good cause. We support only Gold Standard carbon offset projects. The Gold Standard ensures that not only do these projects eliminate carbon emissions, but they promote sustainable development worldwide.

Some of the projects we support include:

## **HONDURAS COFFEE GROWERS CLEAN WATER PROJECT**

Promotes sustainable development and improves the health and well-being of communities involved in the coffee production process. This project provides families with water filters, which allow them to avoid burning wood for boiling water. This improves air quality and reduces deforestation. Improving access to clean drinking water not only helps the people, it makes the coffee supply chain more resilient by allowing producers to save on fuel, medicine, and clean water costs and invest those savings in their farm, their children's education, and their overall livelihood.

## **WITHONESEED TIMOR-LESTE COMMUNITY FORESTRY PROGRAMME**

Small-holder subsistence farmers receive an annual incentive payment for planting, managing, and maintaining trees on their land. The program has embraced the UN's Sustainable Development Goals to end poverty, protect the planet, and ensure prosperity for all.

## **BIOGAS DIGESTERS FOR FARMERS IN VIETNAM**

Rural family farms are installing biogas digesters to manage waste and gain access to clean energy. One biogas digester produces enough methane to provide energy for cooking or other needs in several homes, saving families money. By channeling and reusing methane (25 times more harmful to the environment than carbon dioxide), they reduce emissions from this greenhouse gas. Also, families do not have to use firewood, helping to protect local forests.





# PROGRESS

## PACKAGING

We have always been aware of the environmental impact of our packaging. Since the launch of our product line, we have only used 100% post-consumer recycled plastic bottles, so no virgin plastic is required to produce our capsule containers. We use 85% to 100% recycled fiber for cardboard cartons.

## TRANSPORTATION

We are currently developing a green transportation action plan to improve the efficiency of our supply chain, and establish a method for tracking reduction of black carbon and other short-lived pollutants.

## E-WASTE

Computers, monitors, batteries, and other electronic equipment contain toxic materials that can contaminate the environment if they are not disposed of properly. We collect and recycle all of our e-waste, and have responsibly recycled over 3 tons in the last 5 years!

## OUTREACH / BEEFRIENDLY™

In 2019, our efforts took us all over the country, to hundreds of events, to share our knowledge of mycology, mycoremediation, and how mushrooms and mushroom mycelium can support the health of people and bees.

We've expanded employee education to include climate change and the importance of sustainability—to support a healthy, sustainable company culture.

Our BeeFriendly™ initiative continues, and we contributed an additional \$50,000 to fund bee research at Washington State University (>\$200k contributed to date). Ground-breaking peer-reviewed research was published in 2018 examining how mushroom mycelium extracts support health in honey bee populations. Fungi Perfecti's BeeMushroomed™ Feeder and Extract are currently in development, and we hope they will create powerful points of health and nutrition for bees all across our shared landscapes.



**100%** post-consumer plastic bottles

**100%** recycled fiber paper tea boxes

**85%** post-consumer paper cartons



**3 Tons**  
E-WASTE RECYCLED  
(since 2014)



**\$50,000**  
Contributed to fund  
bee research  
Bringing our total contributions  
to more than \$200,000

**\$5 million**  
raised for WSU's Honey  
Bee & Pollinator Division  
Results of direct contributions and  
awareness efforts by Paul Stamets, Fungi  
Perfecti®, and Host Defense®.



# AS YOU CAN SEE WE'VE BEEN HARD AT WORK ADDRESSING SUSTAINABILITY IN MANY AREAS.

By tracking metrics throughout our operations and supply chain,  
we have been able to identify the most impactful areas  
and take meaningful steps to help reverse climate change.

**By choosing to offset our remaining emissions by >10X,**  
we are working to ensure that our business  
has a positive impact on the environment.

Looking beyond the bottom line, we are ensuring  
that our actions have positive environmental, social,  
and economic impact. This is the measure of true  
profitability, and the definition of sustainability.

## TO THE EARTH!

Fungi Perfecti, LLC—makers of  
Host Defense® Mushrooms™—is  
well-known for ground-breaking  
research in the field of applied  
mycology to help bees, trees,  
people, and planet.



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