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Company Using Fungi To Make Innovative Products

Companies worldwide are turning to fungi to solve problems and develop new products, from building insulation to luxury imitation leather. Ecovative uses mycelium (the underground part of fungi) to make everything from a bacon substitute to imitation leather, packaging material and more.

These aren't "someday" products. Ecovative is already converting over 10 million tons of wood chips annually into high-value mycelium. It has tested more than 800 strains and mutants of mycelium, evaluated more than 200 substrates (feed-

stocks), and developed 40 supplements to boost growth and health.

It's working with Canadian Whitecrest Mushrooms to cultivate its own mycelium and has production facilities in the Netherlands and Green Island, N.Y.

Company founder Eben Bayer is very open about his goal of replacing animal agriculture with mycelium. MyBacon is just the first of his planned food industry products. It's already available in more than 1,200 grocery stores and expects to more than triple that number by the end of the year.

Ecovative established a subsidiary, MyForest Foods, to market it. A second product, MyPulled Pork, has already been launched.

In the case of MyBacon, slabs of mycelium form as oyster mushroom spawn grow on a special blend of wood chips in indoor vertical farms. Forest-like conditions, including dew, mist and a gentle breeze, are used to encourage mycelium to develop from thread-like fibers into large sheets.

After 12 days, the long sheets of mycelium are cut into smaller rectangles. These are then sliced like bacon from pork belly. The slices take a quick soak in a brine bath of sugar, salt and natural flavors. The slices are coated with coconut oil before being packaged. Once in the kitchen, the slices are pan-fried until they're plank-like and ready to eat.

The Forager division aims to achieve the same success in the leather industry. One of its products is AirLoom Hides, high-performance botanical hides with naturally grown textures, customizable colors, finishes and thicknesses.

Forager is working with Ecco Leather, a tanning division of the Danish footwear company Ecco. The goal is to develop and commercialize its leather-like products for shoes, clothing and accessories.

Bayer recently described the leather-making process in an interview with Ag Funding News. Using a different species of fungi from MyBacon, the company grows the spawn into 50-ft. long sheets of mycelium. After some dewatering, the hide is shipped to tanneries.

"We have a similar tensile strength and similar look and feel to calf hides," he says.

Another Ecovative division, Mushroom Packaging, developed a custom-molded, cost-competitive packaging material. MycoComposite is thermally insulating and water-resistant, made solely from mycelium and hemp hurd. It's also home compostable within just 45 days.

The company holds over 40 patents worldwide for these and other products. Unlike almost all other companies that protect their intellectual property, Ecovative follows the Open Source Initiative. This includes providing unrestricted access to Ecovative's patents to various companies that collaborate on ideas and R&D efforts, encouraging open innovation.

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They Specialize in Cold-Pressed Nut Oils

Fresh Vintage Farms in California's Central Valley offers a variety of cold-pressed, locally grown almond and walnut oils for sale online and throughout the region.

"We started as a small family operation," says Bailey Kindle, farm representative. "We grew up around almonds and walnuts, but we wanted to create something beyond the bulk commodity side of agriculture—something personal, safe and sustainable that we could feel comfortable feeding our families. That's how the idea for our oils was born: to take something locally grown, press it ourselves, and share it with families in a way that highlights both quality and tradition."

All Fresh Vintage Farms nuts come straight from local farmers.

"We don't bring in crops from outside the region; we're committed to keeping everything local," Kindle says. "By working closely with neighboring farms, we're able to support our community, reduce waste, and make sure every nut is put to good use. Even nuts that don't make the cut for the

snack market are pressed into high-quality oil, giving them new life in the kitchen."

As Kindle explains, cold pressing is a mechanical process where oil is extracted without high heat or chemicals.

"This preserves more of the natural nutrients, like vitamin E and healthy fats, as well as the fresh, nutty flavor."

The farm presses in small batches without additives or fillers.

"We do the pressing ourselves; it happens right in our own facility. We like to say the oils go from tree to bottle with as little interference as possible."

This farm-to-bottle process cuts down on food waste while supporting local farmers. The finished oils are packaged in recyclable glass bottles with cork tops to keep purity and flavor intact.

All Fresh Vintage Farm oils are available online, and the farm has recently expanded its retail presence across California and Nevada. Their newest products include a refined almond oil for neutral cooking and a clean-label almond oil-based mayo for customers

who avoid traditional seed oils like canola and soybean.

While awareness of oil quality is increasing, Kindle states that one of the biggest challenges remains educating the customer base.

"Most people are familiar with olive oil, but not almond or walnut oil. We spend a lot of time showing customers how versatile these oils are—whether for cooking, baking, dipping or barbecuing."

Almond oil has a high smoke point and a mild, nutty flavor, making it excellent for cooking, roasting and sautéing. Walnut oil, on the other hand, has a medium smoke point and a bold, earthy taste that's perfect for dressings, baking and finishing dishes. Both oils are rich in vitamin E, omega-3s and antioxidants, making them healthier choices for anyone trying to avoid highly processed seed oils.

"Fresh Vintage Farms was built on the idea of gathering around the table with ingredients that are wholesome, safe and sustainable," Kindle says. "We hope other families continue to enjoy our products as much as we do,



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and we're proud to be part of a new wave of American farmers who are creating a farm-to-fork company. We're happy, proud and excited for all to come."

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Herb Hub Supports Local Growers

The Rural Action Herb Hub in southeast Ohio supports local growers and foragers in bringing their products to market. The non-profit organization (Vol. 48, No. 4) offers a shared, approved kitchen space and equipment for processing field and forest herbs, seeds and roots.

"Herb Hub has been in the works for a couple of years," says Sara Sevy Tremayne, Rural Action. "We're finally up and running. We want to be educational as well as providing service, having people come in and see and use equipment they could use on their own farms."

The Herb Hub offers a complete range of equipment for washing and drying products, including tanks, dehydrators, a freeze dryer and drying racks. Some equipment, like an elderberry destemmer, is available to borrow.

A main goal is to help the local economy. Herb Hub users have included a fresh basil grower who normally sells to area grocery stores.

"He had an extra 84 lbs. and saw an opportunity to dry them and sell them later," says Tremayne. "Another brought in cone flowers, and we shredded them to make a tincture. We have people bringing in shiitake mushrooms, lemon balm, mint and bee balm to dry. We've even had people make backpack meals with the dehydrator and freeze dryer."

Besides assisting people with their products, the Herb Hub offers workshops on processing and preserving.

"We had one on tincture making, another on handling practices, and an elderberry event. People brought in their elderberries to destem."

ASD and the AHHH have curated a network of bulk herb buyers across the country.

"They also put out a sheet of in-demand product, such as lemon balm," says Tremayne. "If we have lemon balm growers, we can help get them tied in."

AHHH and the Herb Hub also assist growers and foragers in supplying larger quantity buyers.

"A company may ask for 100 lbs. of a certain product," says Tremayne. "No one may have 100 lbs., but we may have 10 with 10 lbs. each. We can aggregate it so our growers connect with that company and get a better price."

In its start-up year, the Herb Hub's costs were covered by a grant, and growers have been able to use the facility and equipment free of charge. In the future, it may need to charge fees.

"We're still working out details on charging," says Tremayne. "We're leaning toward a monthly fee, such as \$50 for limited amounts and more for larger amounts of processing."

Rural Action's goals for the Herb Hub are to support existing agroforestry growers and foragers, as well as new ones.

"We hope having our infrastructure in place will encourage new growers. It can be scary to invest in growing or gathering herbs. When they're ready, we'll be here for them."

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