SCIENCE & TECHNOLOGY

Finnish Researchers Grow Coffee in a Lab

October 17, 2021

Finnish researchers say they have produced coffee in a laboratory that smells and tastes very similar to the real thing.

The team reports that lab-grown coffee could be important as climate change continues to threaten traditional coffee farming.

Scientists at Finland's VTT Technical Research Center created cell **cultures** from the leaves of coffee plants. The process involves floating the cell cultures in **bioreactors** filled with nutrients. The same method is used to make other kinds of animal- and plant-based products.

Heikki Aisala is a VTT researcher who oversaw the process. Aisala told Reuters news agency that cups of the cellular coffee probably would not pass taste tests comparing it to traditional coffee.

"Not like, of course, 100 percent. It tastes like a combination of different types of coffees," Aisala said. The researcher added that while the cellular coffee is not ready for the market just yet, "it certainly does **resemble** coffee at the moment."

Aisala added it is possible that the lab-grown version could one day develop into a multi-billion-dollar industry.

VTT Research team leader Heiko Rischer said cell cultures offer a more **sustainable** way to make coffee. This is because coffee is in high demand. This has led to countries opening up more land to grow coffee beans, which causes increased deforestation.

Rischer said the environmental benefits of lab-grown coffee include reduced use of **pesticides** and **fertilizer** and less need to ship coffee beans long distances to markets.

In Europe, lab-grown coffee would need to be approved before it could be marketed.

But an important question remains: Will coffee lovers actually drink the lab-grown creation? A Reuters reporter put that question to Satu, a server in a Helsinki coffee shop.

"I think someday we're going that way because of all the natural coffee sources **vanishing**," she said. "So, we have to move along...if it tastes good and the **aroma** is coffee based, so why not? I think it's possible."

I'm Bryan Lynn.

Reuters reported this story. Bryan Lynn adapted the report for VOA Learning English. Susan Shand was the editor.

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Words in This Story

culture – *n.* the process of growing things for scientific purposes

bioreactor – *n.* a device in which living organisms synthesize useful substances

resemble – *v.* to look like or be like someone or something

sustainable – *adj.* involving methods that do not completely use up or destroy natural resources

pesticide – *n.* a chemical used to kill insects

fertilizer – *n.* a natural of chemical substance that is put on land to help make plans grow well

vanish – *v.* to disappear

aroma – *n.* a nice smell that usually comes from food or drink

SCIENCE & TECHNOLOGY

Good Friends, Fresh Blood: The Social Life of a Vampire Bat

October 08, 2021

Most people would not think of friendship and cooperation when considering the animals called vampire bats.

But experts say maybe we should.

New research shows that vampire bats have deeper social relationships with one another than scientists had thought. The study shows that vampire bats form friendships and meet at feeding time to hunt together.

Researchers attached small devices to 50 vampire bats in Panama to follow their path as they feed at night. The bats drink blood from wounds they cause on cows in open fields. The study involved female bats, as researchers believe they have stronger social relationships than males.

Twenty-three bats born in the wild had been captured and studied for about two years for related research into bat social behavior. Social connections had already been observed among some of them. They live together in trees, clean each other and share meals.

The scientists used tiny sensor devices on the flying mammals to learn whether their hunting behavior was also social. The sensor data showed that the bats would often join a "friend" while searching for food.

Gerald Carter is a scientist with the Ohio State University and the Smithsonian Tropical Research Institute. He led the research published in the journal PLoS Biology.

"This study opens up an exciting new window into the social lives of these animals," he said. "Each bat maintains its own network of close cooperative social bonds."

The researchers suspect that the bats join their friends during the hunt to help each other. They think the bats might exchange information about **prey** position or **access** to an open wound for feeding.

Vampire bats live in the warmer areas of Central and South America. They have **wingspans** of about 18 centimeters and are the only warm-blooded animals with a blood-only diet. They live in groups called colonies that can number from the tens to thousands of individuals.

Simon Ripperger is a researcher at the Smithsonian Tropical Research Institute and a writer of the study. He said people's first reaction to vampire bats is usually fear.

He added, "But once you tell them about their complex social lives, they are quite surprised that we can find such behavior that is somewhat similar to what humans do - and which one would maybe expect in primates - in bats."

Ripperger noted that the bats are fast runners and have heat sensors in their noses to help them target a good place to bite prey.

The bats attack from the ground, using their sharp teeth to open a wound on an animal. Then, they use their tongues to get blood from the wound.

Gerald Carter said there is reason to fear vampire bats because they can spread the deadly disease rabies to both animals and people.

"But I do think they are beautiful and interesting animals in their own right," Carter added. "In this way they are a bit like grizzly bears, sharks, rats and **venomous** snakes: animals that might not help people in any way and might even endanger them, but should still be **appreciated** for their own sake."

I'm Jonathan Evans.

Will Dunham reported on this story for the Reuters news service. Jonathan Evans adapted this story for Learning English. Caty Weaver was the editor.

Words in This Story

prey – *n.* an animal that is hunted or killed by another animal for food

access – *n.* a way by which a thing or place may be approached or reached

wingspan – *n.* the distance from the tip of one wing of a bird or airplane to the tip of the other wing

venomous – *adj.* capable of putting poison or venom into another animal's body usually by biting or stinging it

appreciated – *v.* admired greatly

SCIENCE & TECHNOLOGY

Japanese Scientists Create Lab-grown Wagyu Beef

October 12, 2021

Japan's famous Wagyu beef can cost more than $400 for a kilogram. Now, however, it may become less costly as scientists plan to introduce a lab-grown copy.

Japanese scientists say they have recreated Wagyu in a lab that may taste and look exactly like real meat. Wagyu is famous for its fat content, which spreads throughout the meat. And the fat gives the meat a special taste.

Wagyu beef comes from a kind of black cow raised mostly in the Kobe area of western Japan. Osaka University researchers used 3-D **bioprinters** and stem cells from cows to recreate Wagyu's fat content in a single piece. Earlier attempts tried to recreate the meat by joining many pieces.

The research was led by Michiya Matsusaki.

You will not, however, be eating it anytime soon. Right now, it takes nearly four weeks to create a cubic centimeter of the meat. Matsusaki explained that as techniques and **efficiency** improve, the researchers may be close to making it a real food possibility.

"If we are able to quickly produce a lot of meat from a few cells, there's a chance we can better **respond** to food and protein shortage issues in the future," he told Reuters.

Both environmental concerns and other issues in the meat industry have pushed interest in lab-grown meats. There is also a strong interest in plant-based meat, such as those made by Impossible Foods Inc.

Matsusaki said that bioprinting and lab-growing techniques may have their uses in other areas, such as growing replacements for damaged human **muscles.**

It now costs about $90 to create a small piece of Wagyu. Matsusaki said that price will come down, and the meat may be on dinner tables within five years.

I'm Susan Shand

The Reuters News Agency reported this story. Susan Shand adapted it for Learning English. Hai Do was the editor.

Words in This Story

bioprinter – *n.* the utilization of 3D printing–like techniques to combine cells, growth factors, and/or biomaterials to fabricate biomedical parts

efficiency – *n.* the ability to do something or produce something without wasting materials, time, or energy

respond – *v.* to do something as a reaction to something that has happened or been done

muscle – *n.* a body tissue that can contract and produce movement

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