

From rain clouds to 'hair ice': how microscopic organisms engineer Earth's climate

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(NaturalNews) Many people in our society still erroneously view bacteria as "bad," embracing the long-debunked theory that sterilizing everything is the only way to live a healthy, germ-free life. But bacteria are actually essential for the sustenance of all life. Everything from the foods we eat to our immune systems to the earth's climate is dependent upon bacteria to function as they should for our benefit.

If you're a seasoned *Natural News* reader, you probably already know about the importance of probiotic bacteria in the human gut. These microscopic critters, which number in the trillions, regulate the digestion of food and serve as a foundational component of our immune systems. Without beneficial bacteria, in other words, our bodies would quickly succumb to disease and ultimately death.

As it turns out, the earth's climate is also dependent upon bacteria to produce precipitation in the form of rain and snow. A recent study published in the peer-reviewed journal *Science* reveals that, without bacteria, water vapor in the earth's atmosphere would be unable to bind and form either rain droplets or ice crystals, depriving the earth's surface of necessary fresh water for the survival of plants, animals and humans.

Brent Christner from Louisiana State University (LSU) and his colleagues, after analyzing snow samples gathered from across the globe, found that tiny microorganisms, known categorically as "biological ice nucleators," act as a catalyst for water vapor to develop into both rain and snow. These invisible [bacteria](#) literally govern the precipitation patterns that form all around the world on a regular basis.

One species of bacteria, *Pseudomonas syringae*, has been shown to help water vapor freeze at a higher temperature than the -35 degrees Fahrenheit naturally required at such high altitudes. Both rain and snow usually start out as [ice](#), after all, so without this necessary bacterium and others like it, the earth would very likely almost never see a single drop of rain.

Mankind's obsession with trying to destroy microbes is damaging the climate

Similarly, fungi present on the earth's surface are responsible for a phenomenon known as "hair ice," which allows water to freeze into unique silky strands on tree branches at certain latitudes. Publishing their findings in the European journal *Biogeosciences*, researchers from both Switzerland and Germany explain how, without certain fungi, such as *Exidiopsis effusa*, [hair ice](#) simply wouldn't occur in nature.

Hair ice isn't necessarily an essential function of nature – while riveting to view, scientists aren't sure, as of yet, what function, if any, it might serve. But its presence and the mechanism behind its formation is fascinating, and further points to the importance of microbial life in governing weather patterns and [climate](#) conditions.

"The same amount of ice is produced on wood with or without fungal activity, but without this activity the ice forms a crust-like structure," said Christian Matzler, one of the study's primary authors, from the Institute of Applied Physics at the University of Bern in Switzerland.

"The action of the fungus is to enable the ice to form thin hairs – with a diameter of about 0.01 mm – and to keep this shape over many hours at temperatures close to 0°C. Our hypothesis includes that the

hairs are stabilised by a recrystallisation inhibitor that is provided by the fungus."

This is highly relevant in light of all the current debate over climate change. As governments attempt to control weather patterns through geoengineering and other unnatural interventions, nature is quietly performing its necessary duties in the background, mostly unseen. So it would only make sense to try to work in harmony with this natural process rather than against it like so many governmental bodies have chosen to do.

Sources for this article include:

EGU.eu

Biogeosciences.net

Archive.WIRED.com

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