

Brazil Opens Microbe Bank to the World

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Hundreds of bacteria, fungi and yeast species, mostly collected from the wilds of Brazil, have been made available to researchers looking for new chemicals with scientific or industrial applications.

The microbe bank - dubbed the Brazilian Collection of Environmental and Industrial Microorganisms - is housed at the State University of Campinas (Unicamp) and was inaugurated on 24 February.

"We intend to put this collection at the service of the scientific and industrial community, by preserving, identifying, maintaining and distributing these microorganisms," says biologist Lara Sette, the collection's curator.

Among the potentially valuable chemicals microorganisms produced are antibiotics, anti-cancer compounds and enzymes with industrial applications, such as those capable of cleaning up pollutants.

Researchers began collecting specimens two years ago, and have amassed 700 types of microorganisms to date, but have facilities for maintaining 12,000.

The collection includes microorganisms originating in soil, water and plants in different Brazilian ecosystems, such as the Atlantic rainforest and the cerrado, a kind of savanna. Other specimens were isolated from petroleum reserves and oil fields.

The Unicamp team also developed software for managing information about the microorganisms, such as their identity, place of origin, conditions needed to grow them in laboratory conditions, photographs and information on their genetic material.

Sette says it is important to preserve the microorganisms under controlled laboratory conditions because otherwise their genetic material could become unstable and they could stop producing their potentially valuable chemicals after four or five years.

Among the techniques the Unicamp team will use to preserve their specimens are freeze-drying and freezing in liquid nitrogen at -180 degrees Celsius.

In the coming year, the team plans to double the number of microorganisms in the collection. To do this, they intend to collaborate with similar collections overseas, such as the Belgian Co-ordinated Collections of Micro-organisms and the German Collection of Microorganisms and Cell Cultures.

The Brazilian collection will keep its specimens in three separate depositories.

Specimens in the 'public access deposit' will be available to public and private institutions to use for research or teaching. The 'safety deposit' will house specimens whose identity and related information are kept confidential and to which access will be restricted.

The third section will include specimens deposited to satisfy Brazilian legal requirements, which state that a sample of any biological material moved between public or private institutions, nationally or internationally, must be deposited in an institution accredited by the Ministry of Environment.

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