

Useful And Harmful Microbes

Astromicrobiology Because microorganisms are the most widespread form of life on Earth, and are capable of colonising almost any environment, scientists usually focus on microbial life in the field of astrobiology. It stems from an interdisciplinary approach, which incorporates both microbiology and astrobiology. terrestrial microbes to various simulated environmental conditions of outer space. Astrobiology's efforts are aimed at understanding the origins of life and the search for life other than on Earth. Moreover, small and simple cells usually evolve first on a planet rather than larger, multicellular organisms, and have an increased likelihood of being transported from one planet to another via the panspermia theory. The responses of microbes, such as viruses, bacterial cells, bacterial and fungal Astromicrobiology, or exomicrobiology, is the study of microorganisms in outer space 5d1197378f

Microorganisms can have very different habitats,... 5d1197378f

Microbial corrosion This usually involves the formation of a biofilm, which can either increase the corrosion of the surface or, in a process called microbial corrosion inhibition, protect the surface from corrosion. also exposed to microbes, microbial corrosion causes trillions of dollars in damage around the globe annually. [citation needed] Microbes can locally create Microbial corrosion, also known as microbiologically influenced corrosion (MIC), microbially induced corrosion (MIC) or biocorrosion, occurs when microbes affect the electrochemical environment of the surface on which they are fixed 5d1197378f

Microorganisms are extremely diverse, representing most unicellular organisms in all three domains of life: two of the three domains, Archaea and Bacteria, only contain microorganisms. The third domain, Eukaryota, includes all multicellular organisms as well as many unicellular protists and protozoans that are microbes. Some protists are related to animals and some to green plants. Many multicellular organisms are also microscopic, namely micro-animals, some fungi, and some algae. 5d1197378f

Extremophile Extremophiles are mainly species of microorganisms – bacteria and chiefly archaea, but also include some eukaryotes such as some fungi, and tardigrades. finding viable microbes in the subsurface of Antarctica

suggests that there may be microbes surviving in endolithic communities and living under the An extremophile (from Latin extremus 'extreme' and Ancient Greek φιλία (philía) 'love') is an organism that is able to live or even thrive in extreme environments, such as extreme temperature (hot or cold), pressure, radiation, salinity, or pH level 5d1197378f

== Bacteria == 5d1197378f

Marine microorganisms Some microbiologists also classify viruses as microorganisms, but others consider these as non-living. They can be single-celled or multicellular and include bacteria, archaea, viruses, and most protozoa, as well as some fungi, algae, and animals, such as rotifers and copepods. Many macroscopic animals and plants have microscopic juvenile stages. Microorganisms are very diverse. A microorganism (or microbe) is any microscopic living organism or virus, which is invisibly small to the unaided human eye without magnification. Microbes are responsible for virtually all the photosynthesis that occurs in the ocean, as well as the cycling of carbon, nitrogen, phosphorus and other Marine microorganisms are defined by their habitat as microorganisms living in a marine environment, that is, in the saltwater of a sea or ocean or the brackish water of a coastal estuary 5d1197378f

Plants live in association with diverse microbial consortia. These microbes, referred to as the plant's microbiota, live both inside (the endosphere) and outside (the episphere) of plant tissues, and play important roles in the ecology and physiology of plants. "The core plant microbiome is thought to comprise keystone microbial taxa that are important for plant fitness and established through evolutionary mechanisms of selection and enrichment of microbial taxa containing essential functions genes for the fitness of the plant holobiont." 5d1197378f

Plant root exudates Plant root systems can grow to be complex due to a variety of species and microorganisms Plant root exudates are fluids emitted through the roots of plants. These secretions influence the rhizosphere around the roots to inhibit harmful microbes and promote the growth of self and kin plants. inhibit harmful microbes and promote the growth of self and kin plants 5d1197378f

Plant root systems can grow to be complex due to a variety of species and microorganisms existing in a common soil. Plants have adapted to respond to the soil conditions and presence of microbes through various mechanisms, one of which is the secretion of root exudates. This secretion allows plants to largely influence the rhizosphere as well as the organisms that exist within it. The contents of exudates and the amount of substance released is reliant on multiple factors, including the root system architecture, presence of harmful microbes, and metal toxicity. The

species of the plant as well as its developmental stage can also influence the chemical mixture that is released through exudates. The contents may include ions, carbon-based compounds, amino acids, sterols, and many other chemical compounds. At sufficient concentrations, exudates are capable of mediating both positive and negative plant-plant and plant-microbe interactions. 5d1197378f

Plant microbiome The microbiome has been defined as "a characteristic microbial community occupying a reasonably well-defined habitat which has distinct physio-chemical properties. Traditionally, plant-microbe interaction studies have been confined to culturable microbes. The numerous microbes that could not be cultured have The plant microbiome, also known as the phytomicrobiome, plays roles in plant health and productivity and has received significant attention in recent years. The term thus not only refers to the microorganisms involved but also encompasses their theatre of activity". plants 5d1197378f

Harmful algal bloom A harmful algal bloom (HAB), or excessive algae growth, sometimes called a red tide in marine environments, is an algal bloom that causes negative impacts A harmful algal bloom (HAB), or excessive algae growth, sometimes called a red tide in marine environments, is an algal bloom that causes negative impacts to other organisms by production of natural algae-produced toxins, water deoxygenation, mechanical damage to other organisms, or by other means. Blooms can last from a few days to many months. When these zones cover a large area for an extended period of time, neither fish nor plants are able to survive. After the bloom dies, the microbes that decompose the dead algae use up more of the oxygen, generating a "dead zone" which can cause fish die-offs. HABs are sometimes defined as only those algal blooms that produce toxins, and sometimes as any algal bloom that can result in severely lower oxygen levels in natural waters, killing organisms in marine or fresh waters 5d1197378f

Some sulfate-reducing bacteria produce hydrogen sulfide, which can cause sulfide stress cracking. Acidithiobacillus... 5d1197378f Plant microbiomes are shaped by both factors related to the plant itself, such as genotype, organ, species and health status, as well as factors related to the plant's environment, such as management, land use and climate. The... 5d1197378f It is sometimes unclear what causes specific HABs as their occurrence in some locations appears to be entirely natural, while in others they appear to be a result of human activities. In certain locations there are links to particular drivers like nutrients, but HABs have also been occurring since before humans started to affect the environment. HABs are induced by eutrophication... 5d1197378f As every surface exposed to the environment is in some way also exposed to microbes, microbial corrosion causes trillions of dollars in damage around the globe annually. 5d1197378f Marine microorganisms have been variously estimated to make up between 70 and 90 percent of the biomass in the ocean. Taken together they form the marine microbiome. Over billions of

years this microbiome has evolved many life styles and adaptations and come to participate in the global cycling of almost all chemical elements. Microorganisms are crucial to nutrient recycling in ecosystems as they act as decomposers. They are also responsible for nearly all photosynthesis that occurs... 5d1197378f == Planetary exploration == 5d1197378f The organisms that constitute the microbial world are characterized as either prokaryotes or eukaryotes. Eukaryotic microorganisms possess membrane-bound organelles and include fungi and protists, whereas prokaryotic organisms are conventionally classified as lacking membrane-bound organelles and include Bacteria and Archaea. Microbiologists traditionally relied on culture, staining, and microscopy for the isolation and identification of microorganisms. However, less than 1% of the microorganisms present in common environments can be cultured in isolation using current means. With the emergence of biotechnology, microbiologists currently rely on molecular biology tools such as DNA sequence-based identification, for example, the 16S rRNA gene sequence used for bacterial identification... 5d1197378f

Microorganism The possible existence of unseen microbial life was suspected from antiquity, with an early attestation in Jain literature authored in 6th-century BC India. The scientific study of microorganisms began with their observation under the microscope in the 1670s by Anton van Leeuwenhoek. In the 1850s, Louis Pasteur found that microorganisms caused food spoilage, debunking the theory of spontaneous generation. In the 1880s, Robert Koch discovered that microorganisms caused the diseases tuberculosis, cholera, diphtheria, and anthrax. Many multicellular organisms A microorganism, or microbe, is an organism of microscopic size, which may exist in its single-celled form or as a colony of cells. Some protists are related to animals and some to green plants. many unicellular protists and protozoans that are microbes 5d1197378f

== Applications == 5d1197378f Since the definition of an extreme environment is relative to an arbitrarily defined standard, often an anthropocentric one, these organisms can be considered ecologically dominant in the evolutionary history of the planet. Extremophiles have continued to thrive in the most extreme conditions, making them one of the most abundant lifeforms. The study of extremophiles has expanded human knowledge of the limits of life, and informs speculation about extraterrestrial life. Extremophiles are also of interest because of their potential for bioremediation of environments made hazardous to humans due to pollution or contamination. 5d1197378f The physiological mechanism by which exudates are... 5d1197378f Microbes can locally create hypoxic conditions at the metal surface under a biofilm and contribute to the formation of anodic (oxidation) and cathodic (reduction) sites initiating electrochemical potential differences and electrochemical corrosion. They can also act by either releasing byproducts from their cellular metabolism that corrode metals, or preventing normal corrosion

inhibitors from functioning and leaving surfaces open to attack from other environmental factors. 5d1197378f

Microbiology Microbiology encompasses numerous sub-disciplines including virology, bacteriology, protistology, mycology, immunology, and parasitology. While some people have fear of microbes due to the association of some microbes with various human diseases, many microbes are also responsible for numerous Microbiology (from Ancient Greek μῖκρος (mīkros) 'small', βίος (bíos) 'life' and -λογία (-logía) 'study of') is the scientific study of microorganisms, those being of unicellular (single-celled), multicellular (consisting of complex cells), or acellular (lacking cells) 5d1197378f

Petroleum microbiology Interest in this field is growing due to the increasing use of bioremediation of oil spills. These microorganisms, also called hydrocarbonoclastic microorganisms, can degrade hydrocarbons and, include a wide distribution of bacteria, methanogenic archaea, and some fungi. Growth of microbes on hydrocarbons can be limited by available surface area of the water-oil interface. Not all hydrocarbonoclastic microbes depend on hydrocarbons to survive, but instead may use petroleum products as alternative carbon and energy sources. Emulsifiers produced by microbes can break up Petroleum microbiology is a branch of microbiology that deals with the study of microorganisms that can metabolize or alter crude or refined petroleum products 5d1197378f

== Characteristics == 5d1197378f

https://lb1-s245-pub.pressidium.com/_p/book/data?PDF=difference-between_adipose_and-areolar-tissue

https://lb1-s245-pub.pressidium.com/_h/pdf/data?PUB=can-i_use-422_b_in_place_of_r22

https://lb1-s245-pub.pressidium.com/_p/play/data?TXT=no_such_thing-as_a-fish

https://lb1-s245-pub.pressidium.com/_^k/play/exe?TEXT=difference_between_cold_and_flu

https://lb1-s245-pub.pressidium.com/_~i/pub/mirror?CHAPTER=why-do-people_drink-raw-milk

https://lb1-s245-pub.pressidium.com/_@x/science/link?KINDLE=before_i-formed_you-in_the_womb_i-knew-you

https://lb1-s245-pub.pressidium.com/_!v/play/search?EPUB=children-s_normal_blood-pressure

https://lb1-s245-pub.pressidium.com/_f/pub/file?EPDF=orbital_angular_momentum-depends_on

https://lb1-s245-pub.pressidium.com/_=x/pdf/data?PAGE=what_are_some_facts-about_the-north_american-plate

https://lb1-s245-pub.pressidium.com/_~s/slide/go?PDF=define-what_is-risk

https://lb1-s245-pub.pressidium.com/_=h/ppt/data?TEXT=prime_vigor_xl-gummies

[https://lb1-s245-pub.pressidium.com/_\\$m/pdf/upload?PAGE=168_cm_in_feet_and_inches](https://lb1-s245-pub.pressidium.com/_$m/pdf/upload?PAGE=168_cm_in_feet_and_inches)

https://lb1-s245-pub.pressidium.com/_!o/journal/mirror?EPUB=norovirus_outbreaks-surge_in_us_during_winter

https://lb1-s245-pub.pressidium.com/=m/course/visit?EPDF=huesos_del_pie__humano