Plantastic Discoveries

BIOTECHNOLOGY AND ALL ITS COLOURS

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WHAT IS BIOTECHNOLOGY?

BIOTECHNOLOGY IS TECHNOLOGY BASED ON BIOLOGY

Biotechnology harnesses cellular and biomolecular processes to develop products and technologies to help us improve our lives, the environment and industry.

It involves the manipulation of biological systems, living organisms, or parts of them to create new products or processes with specific uses.

Biotechnology is categorised into different colors, each representing a distinct branch or area of research and application.

BIOTECHNOLOGY IS NOT NEW...

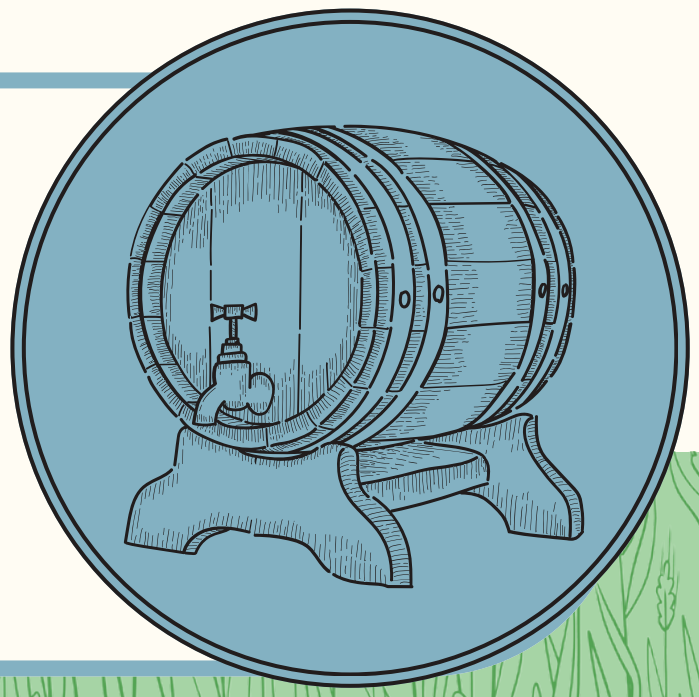
Humans have been harnessing the power of microorganisms for thousands of years, long before the term "biotechnology" was even coined. For example in the cases of...

CHEESEMAKING

Cheesemakers have long used enzymes and bacteria to curdle and ferment milk, transforming it into the wide variety of cheeses we enjoy today.

WINE AND BEER PRODUCTION

The production of wine, beer, and other alcoholic drinks has depended on the metabolic activities of yeast for millennia. Yeast converts the sugars in grapes, grains, and other sources into ethanol through fermentation.



Advances in microbiology, genetics, and biochemistry have allowed us to harness microorganisms and biological processes in increasingly sophisticated ways to create a wide range of products and technologies.

Today, biotechnology continues to play a crucial role in improving and innovating food production, as well as expanding into other industries like medicine, agriculture, and environmental remediation.

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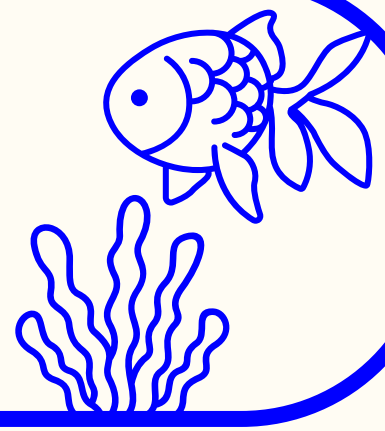
Biotechnology is a broad field that is differentiated into various areas, each represented by different COLOURS.

BLUE

This kind of biotech uses aquatic and marine resources to create products and applications. For example, using algae to produce biofuels, food, and animal feed.



GREEN

Agriculture-related, this kind of biotech focuses on improving crops in an accurate and targeted way, for things like disease resistance or increased production. For example, using microorganisms to improve soil fertility and plant growth.

RED

Centers on healthcare, by developing advanced classes of drugs and therapies, including vaccines and antibiotics. An example would be the development of gene therapies to treat genetic disorders and cancer.

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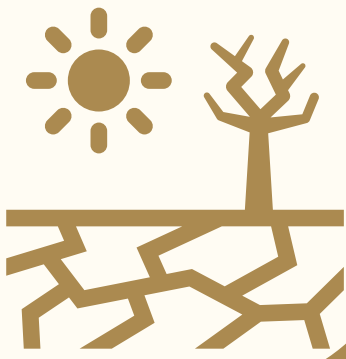
YELLOW

Covering food production, aims to improve food quality, reduce allergens and increase nutritional value of food. An example would be the development of biopreservatives derived from microorganisms to extend the shelf life of foods and reduce food waste.

BROWN



This type of biotechnology focuses on developing crops that can thrive in desert and dry regions, where water resources are limited. For example, it involves creating plants that can flourish in arid, desert-like environments.

GOLDEN

It refers to the application of computational techniques, bioinformatics, and data analysis to biotechnology research and development. It is used to understand and work with the chemical structure and interactions between enzymes and their environment.

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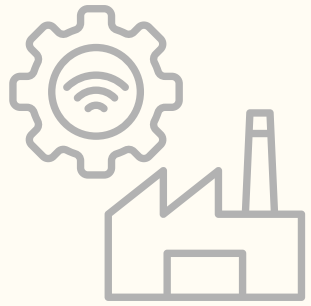
GREY

Focuses on environmental protection, maintenance of biodiversity, and removal of pollutants, including bioremediation processes. Like the use of microorganisms to remove pollutants and clean up contaminated environments.

WHITE

This field focuses on industrial processes and gene-based technologies, utilizing enzymes and microorganisms to produce biobased products and enhance manufacturing efficiency. For example using enzymes and microorganisms to produce biofuels, bioplastics, and other industrial chemicals in a more sustainable and environmentally-friendly way.



PURPLE

It focuses on the laws, ethics and philosophy related to biotechnology, including patent and intellectual property issues. For example, the development of policies and guidelines to ensure the responsible development and use of biotechnology.

While biotechnology, like ALL technologies, carries some risks, the field is subject to extensive safety regulations and oversight to mitigate potential hazards.

In the EU, for example, the European Food Safety Authority (EFSA) provides scientific advice and performs risk assessments for food-related biotechnology products, whereas the European Medicines Agency (EMA) regulated biotechnology-derived pharmaceuticals and medicinal products.

Also, some EU member states have also established national laws and rules governing the use of biotechnology and ensure its safety, as well biosafety advisory councils or bodies to provide scientific advice and support the regulatory framework.

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