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A11- Potential of microalgae in the fight against climate change

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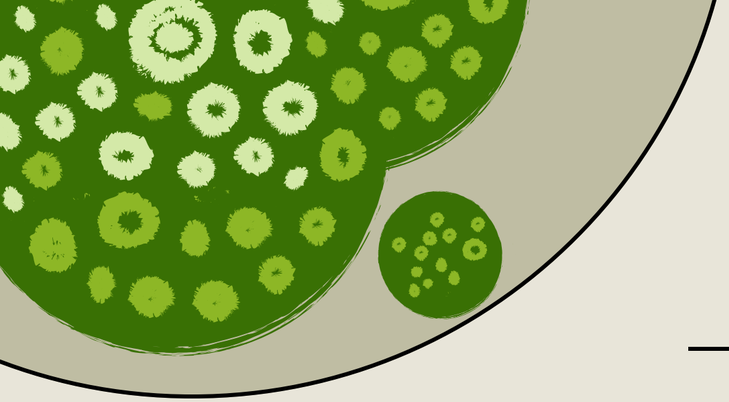
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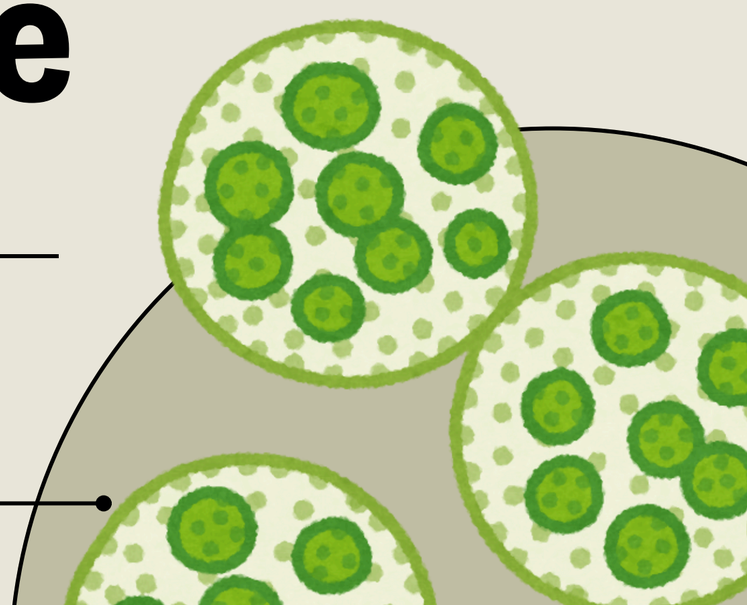
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Developing a Green Strategy with Microalgae









Microalgae

- Photosynthetic
- High Growth Rate
- Small Space Requirement
- Nutrient-Rich
- Multiple Applications



Power of Microalgae

Carbon capture:

Microalgae can absorb CO_2 much more efficiently than land plants, helping reduce greenhouse gases.

Protein production:

Certain microalgae are rich in protein and nutrients, making them excellent for food and animal feed.

Biofuels:

Microalgae can be used to produce biofuels like biodiesel and biogas, offering renewable energy alternatives.

Power of Microalgae

Bioplastics:

Microalgae can be transformed into biodegradable plastics, reducing reliance on petroleum-based materials.

Fertilizers and soil health:

Algae-based fertilizers improve soil quality while reducing the need for chemical fertilizers.

Pharmaceuticals and cosmetics:

Microalgae are used for their anti-aging and antioxidant properties, helping protect skin and support cell regeneration.

Microalgae Species and Their Specific Uses

Chlorella

- Chlorella is a green microalga rich in protein, vitamins (especially B12), minerals, and chlorophyll.
- It is widely used as a food supplement in tablet or powder form. It supports immune health and detoxification



Microalgae Species and Their Specific Uses

Spirulina

- Spirulina is a blue-green microalga.
- It contains up to 60% protein and is rich in antioxidants and essential amino acids



Microalgae Species and Their Specific Uses

Dunaliella salina

- This microalga thrives in extremely salty environments and is a major source of natural beta-carotene, a powerful antioxidant used in cosmetics and food industries



The Algae Factory

The Algae Factory is a Dutch company that produces nutritious and sustainable snack bars by combining Spirulina microalgae with fair-trade chocolate. Their bars are rich in protein, vitamins, and antioxidants, offering a healthy alternative to traditional snacks. The company not only promotes eco-friendly food innovation but also supports Spirulina farming projects in Africa to fight malnutrition and create local jobs.





Algopack

Algopack is a French company that develops 100% biodegradable plastics made from algae. Unlike conventional plastic, Algopack's material contains no petroleum and breaks down naturally without harming the environment. Algopack demonstrates how marine resources can replace fossil-based materials, offering a practical solution to plastic pollution.

Blue Lagoon

Blue Lagoon is an Icelandic skincare brand that harnesses the power of microalgae found in the country’s geothermal waters. Their signature products—such as algae masks and nourishing creams—are rich in bioactive compounds that hydrate, protect, and rejuvenate the skin. The unique microalgae thrive in extreme environments, making them especially effective for anti-aging and restoring the skin’s natural glow.



- Have you ever heard of any products made from microalgae before today?
- Do you know any brands that use microalgae?
- Would you consider using or buying products made with microalgae? Why or why not?
- Which global problem do you think microalgae can help solve most effectively — climate change, food security, or plastic pollution? Why?
- If you were to start a business using microalgae, which product area would you choose (food, cosmetics, energy, packaging)?