From cruelty to code: Tips to solve real world problems without harming Plants and Animals

Biotechnology is a tool for new creation, reducing complexity, and make our life easier. It paves the way for best alternatives and solves real-world problems. This method should be widely recognized by every individual. Imagine using products or selling meat and eggs without harming any animals. Here are some of the alternatives through which we can make microbes as our workers and synthesize our desired products. Some of the alternatives that is used today are

1. Squalene microbial culture reduces killing of Sharks

We all use sunscreen that protects skin from harmful UV radiation. The component that protects our skin from damging is squalene, which is extracted from shark's liver. Mass killings of sharks and their liver is collected to extract 1 squalene. It also imbalances the aquatic ecosystem. Exploiting thousands of sharks to obtain a few grams of squalene is not worth it. By culturing squalene component in microbial level, not only it increases the quantity of component, but also reduces the risk of unnatural killings.

2. Rose fragrance without rose farming

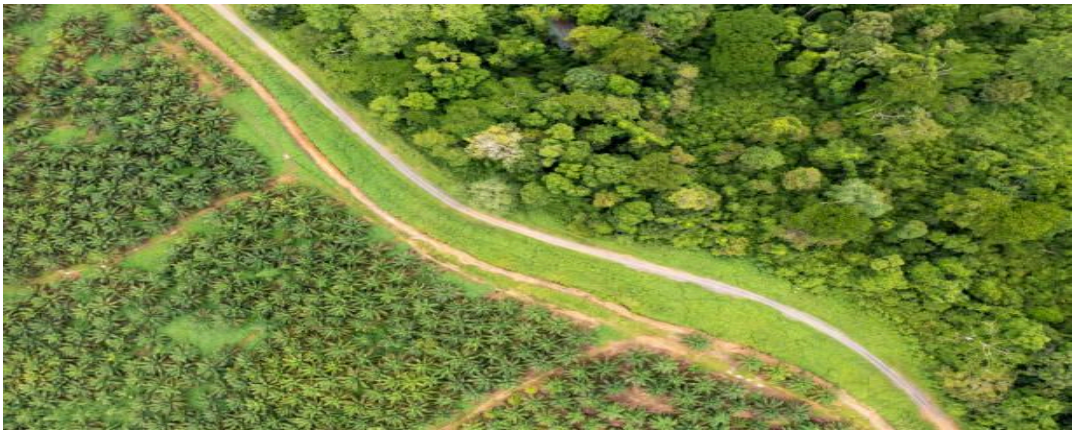
At first, acres of land is utilized for the cultivation of roses. Tons of roses are plucked to obtain few drops of rose water. This method can be alternated by extracting gene that produces rose fragrance and essential oil, incorporate to bacterial genome and culture it. Through this we make bacteria work for us.

3. Synthetic silk replacing natural silk moths

Silk rearing is a lot of time taking process, we have to wait for silk moth to form cocoons and 2500 cocoons are boiled to make one silk saree. Instead, gene of spider (it's salivary component) is incorporated and genetically extracted synthetic silk is made.

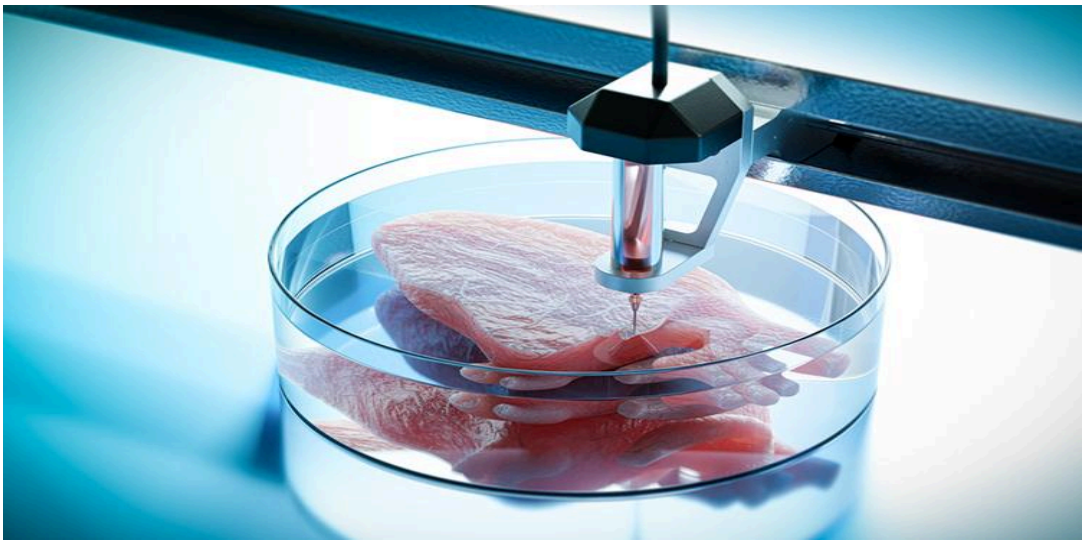
4. Palm oil cultivation without the need of palm trees.

Forests are cut down for the sake of cultivation of palm trees. It affects globally, why this should be done when we have microbes to do the job.



5. 3D Bioprinting Meat or Vegan Meat instead of Actual Meat

It is not fair for humans to kill animals for consumption although he is herbivore. Worst part is more than 95% of population consume meat every single day. This increases the population of steroid chickens and animals, where they are chemically injected to increase their weight. 3D Bioprinting Meat mimics not only the texture, taste, and smell. It is obtained from stem cells of living animals reserving the nutrients, proteins, and essential fats that should be present in the normal meat. Also, Vegan meat is the plant-based meat which provides the taste and aroma of actual meat. It is the natural alternative for us to consume without regret.



Why is it necessary?

Imagine a day with no aquatic animals, no birds, trees, eventually even water. People carrying oxygen cylinder covering with mask and goggles to protect themselves. Life would be no different from the space people with exception to gravity. Species living on earth have equal right to live. Combined they create a balance in the food web.

Genetic engineering enable us to provide our above-mentioned products in a palm-sized petri plates. Then visible creature called bacteria is a tool where we can utilize it its best use. Small scale = large benefit.

How it can be beneficial to the global economy

- It paves the way for development of new startups.
- No living organisms are affected and can be cultivated in small scale with less space requirement to meet growing demand.
- Acts as best alternative for most of the organic supplements.
- Ecosystem is balanced and endangered species can be protected.
- Quantity and Quality of food crops can be achieved without chemical sprays.

Conclusion

Lots of animals are killed inhumanly for our selfishness. We humans have to take this matter seriously and switch to alternative forms. Rearest gems including migratory birds and lichens, animals in the forest are nearing the line of extension. In India tiger conservation project have to be made to save tigers and moments like *Appiko and Chipko moment* remembers the need of forest unknowingly we have taken for granted the resources that are available.

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