What Are Biofuels?

What is the Difference Between Biofuels and Biomass

**Biofuels** are fuels that are produced from organic materials while **biodiesels** are fuels that are derived from the oils of living things.

**Biomass** is the general term for natural or organic fuels. There are two types of biomasses:

- **Woody Biomass:** As the name suggests, it is from log / wood / forest production
- **Non Woody Biomass:** Sources include animal waste, industrial and biodegradable municipal products from food processing such as rape seed, sugar cane, and maize.

*Where Does the Carbon in a Biofuel Come From?*

Biofuels are made from sources that are produced biologically such as trees, plants, or microorganisms. They are carbon based. That means when you burn a biofuel, you are releasing the carbon back into the atmosphere.

How Do Biofuels Impact Climate Change?

Biofuels produce greenhouse gasses that are known to increase the global temperature. Cars, which can run off biofuels, are releasing emissions into the atmosphere. While car emissions that run off of biofuels are substantially less than that of other means, the emissions to produce the biofuels are also releasing green house gasses. These greenhouse gasses are also adding to the rise in global temperature.

Similarly, reducing forests for biofuels releases carbon dioxide. Carbon dioxide is a green house that is naturally found in plants. When the plants / forests are cut down, the carbon dioxide is released in to the atmosphere which aides in climate change. Once deforestation has occurred, new crops are planted. To keep up with crop demand, fertilizers are often used to enhance the crop. The fertilizers release NO₂, another common green house gas.

Overall, while biofuels do reduce the amount of emission compared to traditional oil and gas, the process of producing and exploiting the biofuels adds to the greenhouse gas effect. In order to use biofuels effectively, we must find a balance.
Water Resources

About 70% of Fresh Water Is Used For Agriculture Plantation

Droughts and Biofuels

In 2012, 81% of the United States was under abnormally dry conditions which affected commodities such as corn, soy, and wheat. Biofuels are made from feedstock that are effected during droughts / dry conditions. When frequent droughts occur, less feedstock is available for biofuels.

Water Quality

Nitrous oxide is found in fertilizers used for biofuels. It is an excess ingredient from nitrogen fertilizer that runs off of fields and into bodies of water. The nitrogen causes algae blooms which in turn can cause insufficient oxygen levels. This causes marine life to die and is not good for biodiversity nor the water quality.


With regards to biodiversity, there are many effects that the production of biofuels may result in. For example, in order to produce biofuels, there must be ample land to support the demand of crops that must be met to maintain business. As a result, the barons of large companies resort to traveling to where crops most readily grow, such as the tropics, and deforest a region to make way for crops. In doing so, however, many acres of lush animal habitat will be destroyed, causing many animals eviction from their homes. With the growing reduction of living space animals must compete for living space and food more so than prior to the introduction of biofuel croplands. Thus, animals will die off due to such competition depleting their population over time. Aside from depleting forest land, the crops used to create biofuels sometimes become invasive to the native land. This means that there would be no natural predators to keep the crop population in check. Hence, if the crops used for biofuels were to escape the farming grounds, the species would spread wildly throughout the terrain. Such overspreading occurred with cases such as the introduction of the zebra mussel introduction into the United States from the Caspian Sea. Although with a case of animals, the plants used for making biofuels can easily spread just as fast as the zebra mussels if their population is unchecked by predators. All in all, biofuels may impact biodiversity in several ways, including depleting forests and animal populations, or introducing an invasive species to a region.

What Affect Will Biofuels Have On Food Security? The demand for liquid biofuels will exert upward pressure on commodity prices which will have implications on food security.

If you’re using first class lands for biofuels, then you’re competing with growing food. And so you’re actually spiking food prices by moving energy production into agriculture.

Bill Gates
Conclusion

What Will Does the Future Hold?

Biofuels can be beneficial to our sustainable future if we learn to balance their benefits with the drawbacks. As we enter a new age of science and technology, we have to realize that our environmental problems should not be taken lightly. Climate change and loss of biodiversity is a huge detriment that needs to be heavily considered as we progress into a sustainable future.

I realize that it is not the car that's causing the problem, people are concerned about how we GET biofuels that caused the environmental problem

Aiden Chen
Works Cited


