

Jatropha may be a more economic biofuel than corn-based ethanol, reported the *The Wall Street Journal* on Friday, citing research from Goldman Sachs.

Analysis of the bioenergy market suggests that jatropha, which can be grown in variable conditions with little water or fertilizer, could be used to produce a barrel of fuel for around \$43, less than the cost of sugar cane-based ethanol (\$45 per barrel) or corn-based ethanol (\$83 per barrel) currently favored in the United States. Further, because jatropha isn't edible and grows on land unsuitable for foods crops, its expansion doesn't compete with traditional food production.

The Wall Street Journal reports that oil giant BP and other firms are investing in jatropha in Thailand, the Philippines, Swaziland, Saudi Arabia and especially India.

"The enthusiasm for jatropha and its ilk highlights how quickly investors are shifting gears as the shortcomings of other renewable fuels become more apparent," writes Patrick Barta. "It also illustrates the risks of newer approaches, since it's still far from clear whether jatropha and its peers are economically viable on a large scale."

Barta notes that projections for jatropha are based on limited experience with the plant as an energy crop.

"Even some of jatropha's biggest advocates concede the plant's oil output is unpredictable and often lower than expected. Although it can grow without water, it tends to do much better when water is added, raising its cost of production and mitigating some of the perceived benefits," Barta writes.

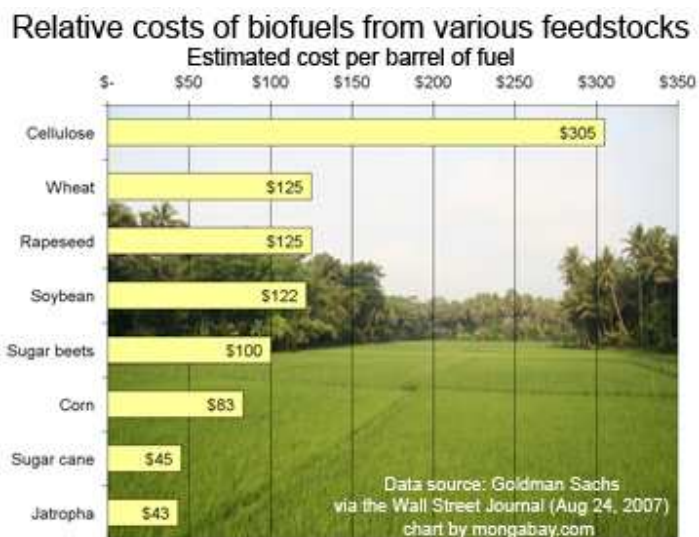
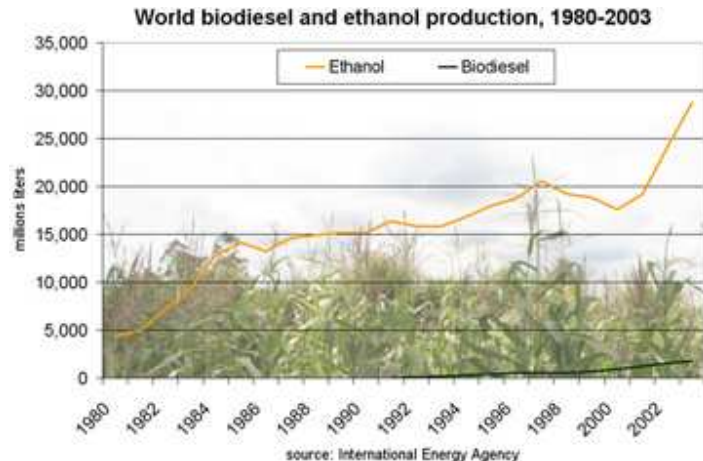


Chart showing relative costs, in terms of dollars per barrel of fuel, of biofuels derived from various bioenergy feedstocks. Data comes from Goldman Sachs via *The Wall Street Journal*. Graphic by Rhett A. Butler

"Some farmers have already reported financial losses from jatropha plantations after their crops yielded less oil than expected or buyers failed to pay sufficient prices. In a worst-case scenario, some rural-development experts fear, small Indian farmers could wind up serving as guinea pigs for an untested industry, leaving them in debt if the boom fizzles."



source: International Energy Agency
World biodiesel and ethanol production, 1980-2003, based on data from the International Energy Agency (IEA). Graphic by Rhett A. Butler

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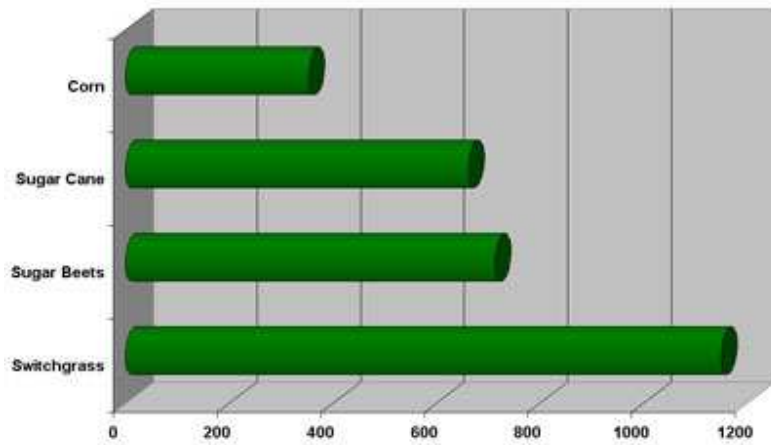
[Conservation more effective than biofuels for fighting global warming](#)

(8/15/2007) Conserving forests and grasslands may be a more effective land-use strategy for fighting climate change than growing biofuel crops argues a new paper published in the journal *Science*. Comparing emissions from various fuel crops versus carbon storage in natural ecosystems, Renton Righelato and Dominick Spracklen write that "forestation of an equivalent area of land would sequester two to nine times more carbon over a 30-year period than the emissions avoided by the use of the biofuel."

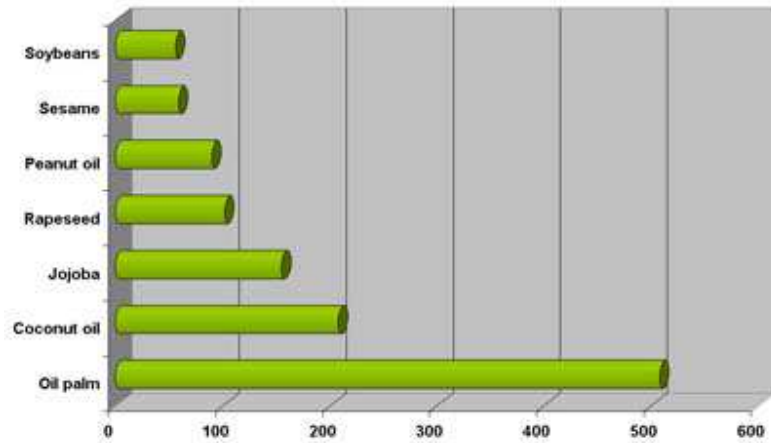
[100 years ago: oil shortages spur need for alternative fuels](#)

(8/8/2007) The fuels committee of the Motor Union of Great Britain and Ireland has issued a valuable report on motor-car fuels... a famine in petrol appears to be inevitable in the near future, owing to the fact that demand is increasing at a rate much greater than the rate of increase of the supply. In 1904 the consumption of petrol in the United Kingdom was 12,000,000 gallons; in 1907 it had risen to 27,000,000 gallons... the committee discusses in the report other possible fuels. The supply is divided into two parts. The first includes all fuels limited in quantity...The second group contains one item only - alcohol - and it is evident from the whole tone of the report that the committee expects to find in denatured vegetable spirits the fuel of the future.

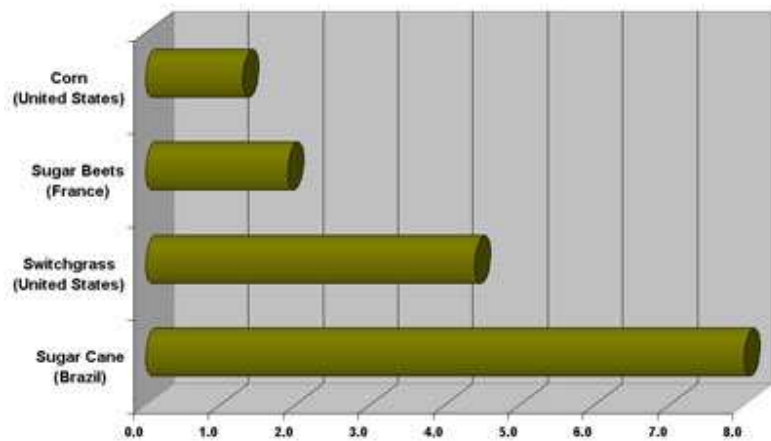
Ethanol Yield (Gallons per Acre)



Biodiesel Yield (Gallons per Acre)



Net Energy Yield of Biofuel Sources



Charts showing Net Energy Yield, Ethanol Yield (Gallons per Acre), and Biodiesel Yield (Gallons per Acre) for Coconut oil, Corn, Jojoba, Oil palm, Peanut oil, Rapeseed, Sesame, Soybeans, Sugar Beets, Sugar Cane, and Switchgrass.

[Miscanthus bests switchgrass as biofuel source](#)

(7/11/2007) In a side-by-side comparison, miscanthus (*Miscanthus x giganteus*) grass has been shown to be a more productive bioenergy source than switchgrass (*Panicum virgatum*), according to research presented at the annual meeting of the American Society of Plant Biologists in Chicago.

[\\$100 billion invested in renewable energy in 2006](#)

(6/20/2007) \$100 billion poured into renewable energy and energy efficiency in 2006, a 25 percent jump from 2005, reports a new analysis by the UN Environment Programme (UNEP).

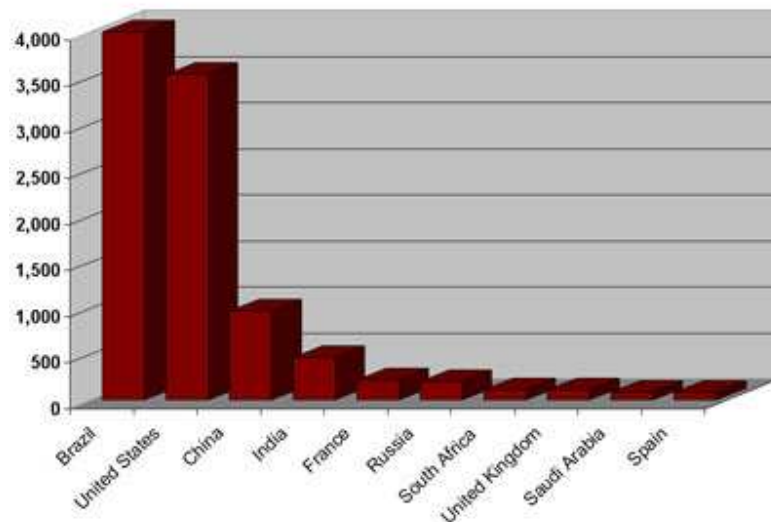
[U.S. ethanol may drive Amazon deforestation](#)

(5/17/2007) Ethanol production in the United States may be contributing to deforestation in the Brazilian rainforest said a leading expert on the Amazon. Dr. Daniel Nepstad of the Woods Hole Research Center said the growing demand for corn ethanol means that more corn and less soy is being planted in the United States. Brazil, the world's largest producer of soybeans, is more than making up for shortfall, by clearing new land for soy cultivation. While only a fraction of this cultivation currently occurs in the Amazon rainforest, production in neighboring areas like the cerrado grassland helps drive deforestation by displacing small farmers and cattle producers, who then clear rainforest land for subsistence agriculture and pasture.

[High oil prices fuel bioenergy push](#)

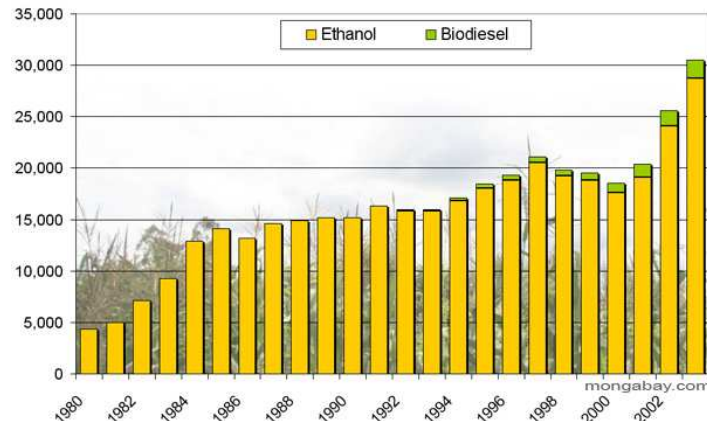
(5/9/2006) High oil prices and growing concerns over climate change are driving investment and innovation in the biofuels sector as countries and industry

Top 10 Ethanol Producing Countries, 2004 (Million Gallons)



Charts showing top 10 producers of ethanol in 2004. In descending order, the top producing companies are Brazil, United States, China, India, France, Russia, South Africa, United Kingdom, Saudi Arabia, and Spain

World biodiesel and ethanol production, 1980-2003



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increasingly look towards renewable bioenergy to replace fossil fuels. Bill Gates, the world's richest man, has recently invested \$84 million in an American ethanol company while global energy gluttons ranging from the United States to China are setting long-term targets for the switch to such fuels which potentially offer a secure domestic source of renewable energy and fewer environmental headaches. Biofuels are fuels that are derived from biomass, including recently living organisms like plants or their metabolic byproducts like cow manure. Unlike fossil fuels -- like coal, petroleum, and natural gas, which are finite resources -- biofuels are a renewable source of energy that can be replenished on an ongoing basis. In general, biofuels are biodegradable and, when burned, have fewer emissions than traditional hydrocarbon-based fuels. Typically, biofuels are blended with traditional petroleum-based fuels, though it is possible to run existing diesel engines purely on biodiesel, something which holds a great deal of promise as an alternative energy source to replace fossil fuels. Further, because biofuels are generally derived from plants which absorb carbon from the atmosphere as they grow, biofuel production offers the potential to help offset carbon dioxide emissions and mitigate climate change.

Why is palm oil replacing tropical rainforests?

(4/25/2006) In a word, economics, though deeper analysis of a proposal in Indonesia suggests that oil palm development might be a cover for something more lucrative: logging. Recently much has been made about the conversion of Asia's biodiverse rainforests for oil-palm cultivation. Environmental organizations have warned that by eating foods that use palm oil as an ingredient, Western consumers are directly fueling the destruction of orangutan habitat and sensitive ecosystems. So, why is it that oil-palm plantations now cover millions of hectares across Malaysia, Indonesia, and Thailand? Why has oil palm become the world's number one fruit crop, trouncing its nearest competitor, the humble banana? The answer lies in the crop's unparalleled productivity. Simply put, oil palm is the most productive oil seed in the world. A single hectare of oil palm may yield 5,000 kilograms of crude oil, or nearly 6,000 liters of crude