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New Trend in Biofuels Has New Risks

By ELISABETH ROSENTHAL Published: May 21, 2008

ROME — In the past year, as the diversion of food crops like corn and palm to make biofuels has helped to drive up <u>food prices</u>, investors and politicians have begun promoting newer, so-called second-generation biofuels as the next wave of green energy. These, made from non-food crops like reeds and wild grasses, would offer fuel without the risk of taking food off the table, they said.

> But now, biologists and botanists are warning that they, too, may bring

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serious unintended consequences. Most of these newer crops are what scientists label invasive species — that is, weeds — that have an extraordinarily high potential to

escape biofuel plantations, overrun adjacent farms and natural land, and create economic and ecological havoc in the process, they now say.

At a <u>United Nations</u> meeting in Bonn, Germany, on Tuesday, scientists from the Global Invasive Species Program, the <u>Nature Conservancy</u> and the International Union for Conservation of Nature, as well as other groups, presented a paper with a warning about invasive species.

"Some of the most commonly recommended species for biofuels production are also major invasive alien species," the paper says, adding that these crops should be studied more thoroughly before being cultivated in new areas.

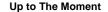
Controlling the spread of such plants could prove difficult, the experts said, producing "greater financial losses than gains." The International Union for Conservation of Nature encapsulated the message like this: "Don't let invasive biofuel crops attack your country."

To reach their conclusions, the scientists compared the list of the most popular secondgeneration biofuels with the list of invasive species and found an alarming degree of overlap. They said little evaluation of risk had occurred before planting.

"With biofuels, there's always a hurry," said Geoffrey Howard, an invasive species expert with the International Union for Conservation of Nature. "Plantations are started by investors, often from the U.S. or Europe, so they are eager to generate biofuels within a couple of years and also, as you might guess, they don't want a negative assessment."

The biofuels industry said the risk of those crops morphing into weed problems is overstated, noting that proposed biofuel crops, while they have some potential to become weeds, are not plants that inevitably turn invasive.

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"There are very few plants that are 'weeds,' full stop," said Willy De Greef, incoming secretary general of EuropaBio, an industry group. "You have to look at the biology of the plant and the environment where you're introducing it and ask, are there worry points here?" He said that biofuel farmers would inevitably introduce new crops carefully because they would not want growth they could not control.

The European Union and the United States have both instituted biofuel targets as a method to reduce carbon emissions. The European Union's target of 10 percent biofuel use in transportation by 2020 is binding. As such, politicians are anxiously awaiting the commercial perfection of second-generation biofuels.

The European Union is funding a project to introduce the "giant reed, a high-yielding, non-food plant into Europe Union agriculture," according to its proposal. The reed is environmentally friendly and a cost-effective crop, poised to become the "champion of biomass crops," the proposal says.

A proposed Florida biofuel plantation and plant, also using giant reed, has been greeted with enthusiasm by investors, its energy sold even before it is built.

But the project has been opposed by the Florida Native Plants Society and a number of scientists because of its proximity to the Everglades, where giant reed overgrowth could be dangerous, they said. The giant reed, previously used mostly in decorations and in making musical instruments — is a fast-growing, thirsty species that has drained wetlands and clogged drainage systems in other places where it has been planted. It is also highly flammable and increases the risk of fires.

From a business perspective, the good thing about second-generation biofuel crops is that they are easy to grow and need little attention. But that is also what creates their invasive potential.

"These are tough survivors, which means they're good producers for biofuel because they grow well on marginal land that you wouldn't use for food," Dr. Howard said. "But we've had 100 years of experience with introductions of these crops that turned out to be disastrous for environment, people, health."

Stas Burgiel, a scientist at the Nature Conservancy, said the cost of controlling invasive species is immense and generally not paid by those who created the problem.

But he and other experts emphasized that some of the second-generation biofuel crops could still be safe if introduced into the right places and under the right conditions

"With biofuels we need to do proper assessments and take appropriate measures so they don't get out of the gate, so to speak," he said. That assessment, he added, must take a broad geographical perspective since invasive species don't respect borders.

The Global Invasive Species Program estimates that the damage from invasive species costs the world more than \$1.4 trillion annually — five percent of the global economy.

Jatropha, the darling of the second-generation biofuels community, is now being cultivated widely in East Africa in brand new biofuel plantations. But jatropha has been recently banned by two Australian states as an invasive species. If jatropha, which is poisonous, overgrows farmland or pastures, it could be disastrous for the local food supply in Africa, experts said.

But Mr. De Greef said jatropha had little weed potential in most areas, adding: "Just because a species has caused a problem in one place doesn't make it a weed everywhere."



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