



Biofuels May Lead to Invasive Species

As Canada, the United States, and other countries look to crops as possible future sources of energy, some researchers are calling for caution, citing the possibility of some biofuel crops becoming invasive species. The scientists argue that before these crops are widely planted, further ecological studies of biofuel crops are needed. Biofuels (derived from processing these crops) are looked at by many environmentalists as a way to reduce our reliance on non-renewable oil and gasoline.

“Most of the traits that are touted as great for biofuel crops – no known pests or diseases, rapid growth, high water-use efficiency – are red flags for invasion biologists ... We want to start a dialog and approach the question of biofuels systematically,” said one scientist.

Seemingly benign crops that have become invasive species have already occurred in the United States and elsewhere. Researchers cite the case of *Sorghum halepense*, otherwise known as Johnson grass. Johnson grass was introduced as a forage grass and now has become an invasive weed in many US states, causing up to \$30 million annually in losses for cotton and soybean crops in just three US states. One proposed biofuel crop, *Miscanthus*, can grow up to eight feet in six weeks. “Plants like these, particularly grasses, have great potential from an energy standpoint, but the benefits need to be balanced with the costs,” said a researcher.

Although invasive species are traditionally thought of as introduced species, a native species can also become invasive through alterations to the environment, for example: the removal of oak and

chestnut trees along much of the east coast of North America has led to sugar maples becoming invasive in some areas. Invasive species alter ecosystems in ways that can cause both ecological and economic harm.

Researchers investigating the potential for biofuels tend to be engineering or agricultural specialists who are only looking at maximizing energetic conversion or crop size. These researchers want to see ecologists at the table negotiating with engineering and agricultural researchers so that the potential for invasiveness can be addressed in their planning.

To make their point clearer the researchers cited one instance of a lack of communication in one US government organization. This mishap saw some scientists examining a plant for heavy metal mitigation (eg. these plants were to be used for absorbing toxic metals at polluted industrial sites), while another group of scientists were working on a process for the biological control of the same plant - one that they considered to be an invasive species!

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