

From tipple to tank - tequila plant may have biofuel future

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Whilst the world wrestles with the issue of climate change - and whether biofuels are part of the solution, or a diverting problem - the humble desert-dwelling agave could soon help realize the potential for truly sustainable fuel from plants. That's the message coming from the February's edition of Global Change Biology Bioenergy, which has devoted a special issue to agave's neglected role in bioenergy.

A spiky cactus-like plant, the agave is the main ingredient in everyone's favorite Mexican tipple, tequila. That's because the succulent leaves and stems of this spiky plant are rich in sugary sap - which is readily converted to alcohol for mescal spirits, such as tequila. And where there's alcohol, there's the potential for fuel. Just witness the success of sugarcane-based ethanol in powering Brazil's cars.

But what has environmental scientists most excited is their low environmental impact, in the vast swathes of the planet that are their natural home - arid or semi-arid wastelands. Whilst other biofuel crops make big demands on water resources, involve disruptive and counterproductive effects on the carbon cycle, or compete directly with food, agaves do none of these

The plants are native to areas naturally low in rainfall - and so have adapted to thrive with little or no water. They also requires no external inputs, such as corn may do, and can be produced sustainably from land that is otherwise unproductive for human use. Because agaves are already being farmed for tequila, the infrastructure is already in place to start putting agave to good use

80% of the mass of the blue agaves processed for tequila are often discarded. The papers in this month's GCBB journal see that this waste-product could readily be put to use in producing biofuels - and Mexico is offering subsidies to tequila processors to promote this

Even more exciting is the scope of agave production across the globe. Large areas of Africa's arid belt were given over to varieties of agave for making sisal fibers. These areas were often abandoned when sisal demand fell foul of cheaper synthetic fibers. But they may well be readily transformed to productive biofuel use, and with little additional environmental burden.

More studies are needed to assess those varieties of agave that will be best suited to bioenergy use, in different parts of the world - and the GCBB issue references field trials that have begun in Australia. It could be that after many false starts, and unintended fallout for food prices, the real future of sustainable biofuels may be about to be mapped out.

SOURCE: <http://www.earthtimes.org/energy/tipple-tank-tequila-plant-biofuel-future/436/>