

*(inset) UA Plant Scientist
Dr. Bob McDaniel
examines a freshly
harvested agave leaf from
test plots at the Marana
Agricultural Center.*

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After 1,000 Years ...

Agave Farming Is Back

by Lynn G. Ketchum

The quest for alternative crops can take researchers way beyond the greenhouses and experimental plots of traditional agricultural research. Sometimes, they even turn to history for clues to developing a new crop. Such is the case with the desert agave or century plant. University of Arizona scientists are currently investigating the commercial potential of this quintessential desert plant.

Although agave has been and is still harvested from the wild in Mexico and other parts of Latin America, it has not been cultivated as a row crop, at least not in recent history. That is just one challenge facing Dr. Bob McDaniel of the Department of Plant Sciences.



To McDaniel the agave's appeal is as varied as the plants' use. First of all the agave with its giant rosette of heavy gray leaves is drought tolerant, ideal for the desert farmer. "The agave can take the desert heat in the summer and still keep growing." In fact agave literally can survive without irrigation, although some supplemental water will be required to grow the plants fast enough for the commercial market. Even with limited irrigation agave may help relieve the demand on the desert's limited resource. Agave, McDaniel expects, could be grown much like a tree crop with low input and a harvest every four to five years . . . when the agave has reached a height of four to five feet.



Ironically, it was near the UA Marana Agricultural Center where today McDaniel tends his experimental rows of agave that a thousand years ago, Indians cultivated agave. "The Indians probably grew a smaller species for food. They roasted the plant's heart and used agave to supplement beans, squash and other staple foods."

Although the ancient Indians used the agave as a food source, today's researchers look to agave to fill an entire shopping list of consumer products. A multi-use crop, agave yields alcohol, that can be used to make gasohol and tequila. Steroids, chemicals used in the manufacture of some pharmaceuticals, can also be extracted from agave

juice. And agave leaves provide fiber. Historically the leaves have provided material used in rope and baskets.

It's the fiber potential that has attracted the interest of the James River Corporation. The College of Agriculture currently has a proposal pending with the James River Corporation to explore the commercial potential of agave. As a first step the corporation has provided funds for collecting from the wild, various species native to Arizona and northern Mexico. Dr. Steve McLaughlin in the Office of Arid Lands Studies is coordinating this phase for the College of Agriculture in cooperation with Dr. McDaniel. In the months ahead the James River group will test the samples and evaluate them for their fiber potential. The team's work may ultimately lead to expanded research on agave as a fiber resource.

Finding those species with commercial potential is a major chore considering the staggering numbers. "There are hundreds of species," McDaniel says. He knows of at least eight in Arizona and hundreds more in Mexico, the center of origin for the plant. "We're hoping to find species that will do well under cultivation. So we're bringing them out of the hills, so to speak, from various area in Mexico and planting them as a row crop under our irrigated agriculture regime."

In this setting College of Agriculture researchers hope to find out, exactly how the agave or "century plant" can benefit both farmers and consumers in the 20th century. LP

