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Wonder plant *Opuntia* can be put to multiple uses

The cultivation of nopal (*Opuntia ficus-indica*), a type of cactus, is one of the most important in Mexico. According to Rodrigo Morales, Chilean engineer, Wayland biomass, installed on Mexican soil, 'allows you to generate inexhaustible clean energy.' Through the production of biogas, it can serve as a raw material more efficiently, by example and by comparison with jatropha. Wayland Morales, head of Elqui Global Energy argues that 'an acre of cactus produces 43,200 m³ of biogas or the equivalent in energy terms to 25,000 liters of diesel.' With the same land planted with jatropha, he says, it will produce 3,000 liters of biodiesel. Another of the peculiarities of the nopal is biogas which is the same molecule of natural gas, but its production does not require machines or devices of high complexity. Also, unlike natural gas, contains primarily methane (75%), carbon dioxide (24%) and other minor gases (1%), 'so it has advantages from the technical point of view since it has the same capacity heat but is cleaner,' he says, and as sum datum its calorific value is 7,000 kcal/m³. Biogas power generators from KW to MW size are available from China and Vietnam. Wayland Morales, head of Elqui Global Energy argues that "an acre of cactus produces 43200 m³ of biogas or the equivalent in energy terms to 25,000 liters of diesel." With the same land planted with jatropha, he says, it will produce 3,000 liters of biodiesel. Another of the peculiarities of the nopal is biogas which is the same molecule of natural gas, but its production does not require machines or devices of high complexity. Also, unlike natural gas, contains primarily methane (75%), carbon dioxide (24%) and other minor gases (1%), "so it has advantages from the technical point of view since it has the same capacity heat but is cleaner," he says, and as sum datum its calorific value is 7,000 kcal/m³. Fruits and Juice: Jams and jellies are produced from the fruit, which resembles strawberries and figs in color and flavor. Mexicans have used *Opuntia* for thousands of years to make an alcoholic drink called colonche. In Sicily, a prickly pear-flavored liqueur called "Ficodi" is produced, flavored somewhat like a medicinal/aperitif. In Malta, a liqueur called bajtra (the Maltese name for prickly pear) is made from this fruit, which can be found growing wild in almost every field. On the island of Saint Helena, the prickly pear also gives its name to locally distilled liqueur, Tungi Spirit. Mexican and other southwestern residents eat the young cactus pads (nopales, plural, nopal, singular), usually picked before the spines harden. They are sliced into strips, skinned or unskinned, and fried with eggs and jalapeños, served as a breakfast treat. They have a texture and flavor like string beans. They can be boiled, used raw blended with fruit juice, cooked on a frying pan, and often used as a side dish to go with chicken or added to tacos along with chopped onion and cilantro. Fodder: The cattle industry of the Southwest United States has begun to cultivate *O. ficus-indica* as a fresh source of feed for cattle. The Fruits and Juice are exported from Israel to Europe and US. Cactus yields a number of fruits. The fruits are highly nutritious like Apple and Pomegranate. Cactus has high medicinal value as well. Some health benefits derived from a juice prepared from the San Pedro cactus have prevented the burning of the bladder and kidneys, helps treat conditions of high fever and hepatitis. Hoodia is another cactus-like plant which is popularly grown in South Africa and is renowned for its appetite suppressing quality and hence effectively used in the treatment of obesity. The prickly pear is also known as *Opuntia* is a very popular herb. Forming an important part of the ancient Mexican culture, the prickly pear is abundant in flavonoids which are an important antioxidant property. Antioxidants have a detoxifying effect on the body thereby preventing cellular damage which is the path to cancers, ageing, and other health problems. The status of cactus has evolved over time from being just a crop to a cure or healer for various human ailments. Dishes prepared from the pulp of the *Opuntia* fruit have become very popular today. Traditionally, the prickly pear cactus was also used to treat diabetes. Considering the medicinal value of cactus, natural food companies are not only supplying prickly pear cactus but also offering recipes and dishes prepared from the fruit and pads of the cacti plant or herb. *Opuntia* being a care-free growth, regenerative CAM plant with multiple users can be grown on a massive scale in vast wastelands in developing countries. As a CAM plant it will act as Carbon Sink.

Biography

A Jagadeesh holds a PhD in Wind Energy from the prestigious University of Roorkee (Now IIT Roorkee), India. He published over 150 Research Papers in International/National Journals. He presented over 40 Research Papers at International Conferences abroad. Recipient of 15 International/National Awards including the prestigious 'Margaret Noble Foundation Seattle Award in Energy Technology'.

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