

## Sweet sorghum eyed as alternative source of income for farmers

Written by Angelica A. de Leon S&T Media Service, DOST-STII  
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Sweet sorghum may be the next crop that will bring income to farmers affected by the Sin Tax Law. This was one of the major points raised during a recent focus group discussion mounted by the National Academy of Science and Technology (NAST), an advisory body of the Department of Science and Technology.

Titled “Are We Ready for Sweet Sorghum Bioethanol?” experts and other stakeholders discussed the strong potentials of sweet sorghum as a raw material for bioethanol.

“Tobacco farmers will lose their jobs if taxes will increase, and demand for tobacco products will slow down,” explained guest speaker Dr. Heraldo L. Layaoen, vice-president for planning, development and external linkages at the Mariano Marcos State University Batac (MMSU) in Ilocos Norte. “We have a ready substitute for this—sweet sorghum.”

“It generates employment and may replace the tobacco industry without hurting the farmers,” he elaborated.

He explained how the crop’s profitability can turn the tide in favor of farmers of tobacco who use too much pesticides in order to protect the leaves. He emphasized that sweet sorghum is a multi-purpose crop. It can be used not only as food, but as feed and fuel as well.

“In the tobacco industry, one major issue is fuel,” he revealed. The cheapest source of energy in flue-curing, according to Dr. Layaoen, is fuel wood. This largely explains why mountains in Ilocos are denuded. The trees are being cut to gather the wood for flue-curing. “Even the kaimito trees and other fruit trees were not spared,” said Dr. Layaoen. “I’m a witness to this predicament in our environment.”

Tobacco is one of the leading cash crops in the Ilocos region.

Dr. Layaoen also explained that sorghum has an extensive root system, making the crop drought tolerant. Producing a grain of sweet sorghum also does not require a lot of water, unlike

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other grains. Furthermore, the equipment for sweet sorghum production is the same equipment used in sugarcane juice processing.

However, Academician Alvin B. Culaba, NAST's focal person on energy, revealed that market acceptance of the crop continues to be a subject of research. Acd. Culaba, a member of the NAST Engineering Sciences and Technology Division, is involved in research activities on alternative and renewable energy sources including biodiesel and bioethanol, advanced energy conservation technologies, and the monitoring of energy programs in the Philippines, among others.

Another institution undertaking research initiatives is MMSU, the nerve center of sweet sorghum studies and development in the country. Dr. Layaoen is at the forefront of MMSU's sorghum experiments and nationwide testing of different varieties. Ethanol production is one of the university's areas of research.

In his overview of the sweet sorghum industry in the Philippines, Dr. Layaoen shared that Ilocos Norte is the ideal place for planting sweet sorghum because of its long dry season. However, it was suggested that small farmers adopt a cropping system which rotates sweet sorghum with pigeon peas at a ratio of 3:1. Pigeon pea restores soil quality and provides fuel for the production of jaggery or concentrated juice.

Dr. Layaoen added that a farmer's cooperative has been set up in Ilocos to provide the seeds, as well as a village-level bioethanol distillery using sweet sorghum as feedstock. Its end product—hydrous ethanol—is used to make moisturizers and hand sanitizers, which are now commercially available.

Aside from moisturizers and sanitizers, sweet sorghum may also be used to make syrups and fresh juices, among others.