

Sorghum

John Williamson's Experimental Crop of Sorghum Grows in West Shaftsbury

One of the Oldest Natural Sweeteners Known--More Like Honey Than Maple; Grows Like Corn--Without Fertilizer; Squeezed Stalks Fed to Livestock; Use the Sap House in Summer--Seed Varieties Determine Different Flavors



John Williamson stands beside his experimental sorghum crop. The plant grows six inches a day when temperatures are 70 degrees and above.

by Sherry Russell

WEST SHAFTSBURY, VT - John Williamson milks a herd of 40 Guernseys and taps maple trees on a three generation farm in West Shaftsbury, located in the southwest corner of Vermont. This past summer he broke with tradition, and planted what he thinks was the only crop of sorghum to be found in the state.

Williamson characterized himself as someone who likes to experiment with new things. He said the idea of trying sorghum was triggered by a Farm Bureau tour of farms in southern states, where

he already had most of the needed equipment.

SARE Grant

Next, he connected with a friend, an Amish farmer in DeKalb Junction, New York, who gave him a grain bag full of sorghum seed. Using a \$1,750 grant from the Sustainable Agriculture Research & Education program (SARE), he purchased five more varieties of seeds, and planted six acres this past spring.

Williamson explained, sorghum grows like corn, and is planted with the same

region. He picked up an old sorghum mill in Tennessee, which, he said, "I paid a dollar a pound for."

According to a brochure produced by the National Sweet Sorghum Producers & Processors Association, based in Clinton, Tennessee, sorghum is one of the oldest natural sweeteners known, and was commonly used by early settlers of this country. It contains valuable nutrients including calcium (30 mg. per tablespoon), iron, magnesium, potassium and phosphorus.

The brochure states, "Sorghum blends with every kind of food, enhancing both taste and texture in very subtle ways. For today's chef, sorghum is a nutritious flavoring, a seasoning ingredient and a sugar substitute."

More Like Honey Than Maple

Williamson boiled and bottled 125 gallons of sorghum this past August, using

plastic jugs made for maple syrup but printed with his own custom label. He found the syrup to be more like honey than maple, in how it granulates. The price paid is typically between that of honey and maple, with a wholesale price of \$6 per quart.

Six gallons of sorghum sap makes one gallon of syrup. The sugar content of the stalk is as high as 20 percent. The syrup is thicker than maple, and can be burned more easily, Williamson discovered after spilling 3/5 of his sap.

Planting With A Lawn Tractor

Another challenge in this pioneer effort was to devise a planting method. The seeds are much smaller than corn, and he had no seed plates that would work. The solution he found was to use a lawn tractor and garden planter, laying thirty inch rows, with seeds planted 3/4 inch deep.

(cont. on pg. A-5)



John Williamson with his wife, Betsy, daughter Kaylyn, 9, who is holding a sorghum stalk.

farmers using the hormone to the public health agency.

storage from plants to farms.

A second bill, **HB 1323**, was voted out 15 - 1. This bill establishes an interim study committee on the use and disposal of sludge or septage, and requires a seven day notification of all abutting property owners before application of sludge and

which have had hearings and were reported out to the floor.

For additional information on these bills or others, please call Brenda Clemons, Director of Public Affairs, New Hampshire Farm Bureau, # (603) 224-1934.

process more efficient.

Different Flavors

The varieties of seeds used create slightly different flavors of syrups. Williamson said his wife, Betsy, has used the syrup for baking and glazing meats, and that she even likes it on pancakes, while he still prefers maple syrup. Next year, he plans to try a 'White Africa' variety, that's supposed to produce a lighter and sweeter syrup.

Sorghum As An Energy Source

One interesting coincidence was that Williamson discovered, after deciding to do this experiment, that he had a neighbor, Emily Hunter, who earned her Master's Degree by studying sorghum as an energy source. For a state that hasn't grown sorghum since the 1880's, Williamson found it a stroke of luck that an expert was living in his town.

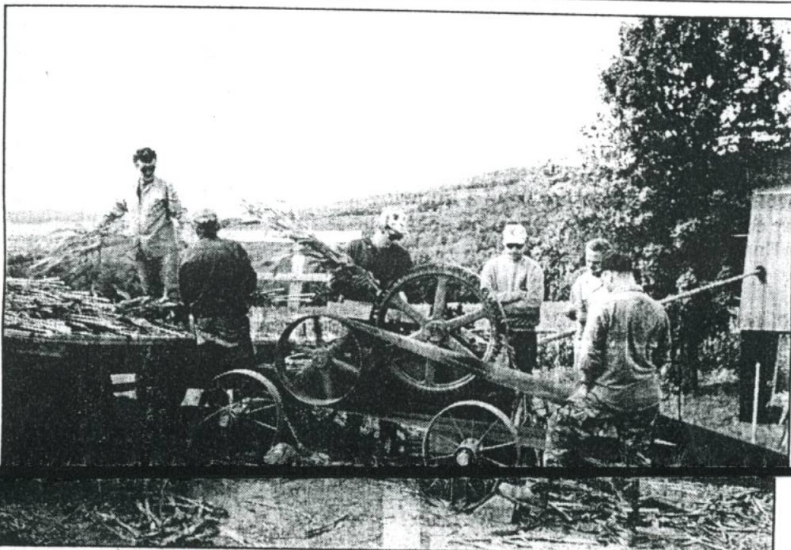
Using The Sugarhouse In Summer

He also found others in the area were curious about his project, and stepped in to help with the harvesting and boiling. He noted the advantage of the crop is that he will be using his sugarhouse in late summer, when it's normally idle. Williamson hopes to convince others that sorghum is a plant that's worth growing

Sorghum

John Williamson's Experimental Crop

(cont. from pg. A-2)
The plants were slow to take off, Williamson said, but by mid-summer he saw growth of six inches per day, when temperatures were over 70 degrees. The stalks are harvested while still in a "doughy stage", and had to be cut by



Friends and neighbors were eager to help mill the sorghum, grown this past summer at the Williamson farm in West Shaftsbury.

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hand, using a corn knife or heavy machete.

Squeezed Stalks Fed To Livestock

The tractor-powered mill is like a clothes wringer, Williamson said. It squeezes the juice out of the stalks. The juice, or sap, is used to make syrup, while the plant can be fed to livestock and has as much nutritive value as corn silage, according to an analysis Williamson had done.

The plant produced 40 bushels of seed per acre. Williamson observed, the wild birds loved them, and, during the blossom stage, "the honeybees went crazy". Some plants can be left to mature, and the seeds saved and dried for next year's planting, and Williamson said he mixed the surplus in with feed for his cows.

Grown In Depleted Soils

He said, "I'm taking a trip in March to Nashville, Tennessee for a sorghum convention and trade show," where he hopes to learn more about his plants, and what other uses can be made of it. According to his research, Williamson said sorghum can be grown in depleted soils, with low amounts of nitrogen, without any added fertilizer. In fact, farmers in the south do not apply manure to sorghum, as it flavors the syrup.

Cutting and milling required ten hours' labor. Williamson said he has been looking for equipment to mechanically harvest the plants.

Dark Green Sap

The sap is a dark green color, and a green foam is skimmed off during boiling. "That was scary looking," Williamson said. The sap is left to settle for 12 hours, to separate impurities before boiling. He had customized an evaporator; the Grimm company devised a 4 feet by 14 feet pan with 14 partitions and skimming troughs on each side. His maple tools - scoopers, skimmers, and thermometers - were put to use making sorghum syrup.

Boiling The Sap

What he learned in his first year of boiling was the importance of keeping the fire at an even temperature, and to not interrupt the flow from light to dark syrup. The first load in the pans was with water, and the sap pushed the water through. "We did the same thing when we were out of sap," Williamson said.

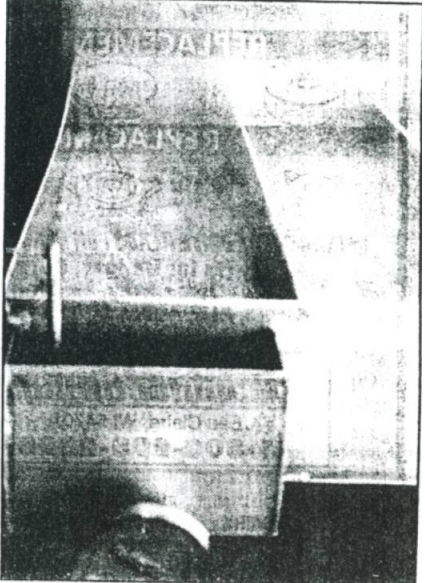
A damper was added to the arch, to help maintain a low heat. The syrup gradually changes color as it boils, from white to golden. Filtering has to be done immediately. Williamson found the syrup was too thick to go through his maple filter, and he used a honey strainer instead. "I'll try a filter press in another year," he reported.

Once filtered, the syrup is cooled to 160 degrees before filling jugs. This year, Williamson said he was able to boil two gallons per hour, and he plans to work on the technique, to see if he can make the

so that he can have other growers to work with and learn from.

The sorghum association claims the syrup is "unexcelled for cooking, baking and table use". Williamson has been selling his quart jugs from his home, at the local farmers' market and at farm stands, and expects to be sold out by mid-summer. He found it sells better if packaged in a glass jar, so people can see the color. He gives recipes to customers.

He said, "The majority of people who have tried it liked it, but I think I can make it even better next year."



Boiling sorghum is much like maple syrup, only at a different time of year.