



These organically grown artichokes were produced by the Brown Bulb Ranch, Seattle, for the fresh market.

YIELDS UP TO 640 GALS. OF "BREW" PER ACRE

Artichokes: Promising Crop For 'Moonshiners'

Lonnie Stauffer, Associate Editor

If you're thinking of becoming an "alcohol arab", you'll want to take a look at Jerusalem Artichokes, an obscure member of the sunflower family that produces a higher yield of alcohol than almost any other crop.

"It's a perennial that reproduces by its tubers so you don't have to re-plant," says Vince Erickson of Big Lake, Minn., who has raised about 10 acres of artichokes for each of the last 10 years, making him one of the country's largest producers of the specialty crop.

In tests by U.S. and Canadian researchers, maximum yields from the 8 to 10-ft. tall crop have reached as high as 640 gal. of alcohol per acre with an average of about 324 gal. That's more than 100 gal. over the average corn yield of 213 gal. per acre.

"You can harvest either the tops or the tubers," Erickson explains. "The sugar which produces the alcohol remains in the stalks till flowering, when it moves down into the tubers." Average yields are 10 tons of tubers, depending on the variety, while 15 to 20 tons of tops are common.

Artichokes contain the sugar fructose and store it in the form of inulin, which can safely be eaten by diabetics. Much of the limited Jerusalem Artichoke crop currently produced is sold to "health food" stores. They can be cooked like potatoes or used raw in salads.

"Equal amounts of alcohol can be produced by fermenting either the top growth or the tubers," explains seed stock producer, Tom Lukens of the Brown Bulb Ranch in Seattle, Wash. "Research shows that the most energy efficient method is to harvest and ferment the top growth, which can be harvested at about 95 days versus 125 days for the tubers. Even if

you harvest the tubers, there will be enough viable tubers left in the ground to grow back the next year."

Artichokes adapt to most climates and are hardy enough to withstand early frosts in the north and summer heat in the south. They can be grown in many areas where sugar beets, a similar crop in sugar content, will not grow.

"One other advantage is that the sugars in artichokes are available to specific yeasts with no cooking or enzymes needed, although fermentation is similar to other crops," says Lukens. "Percentages of fermentables in the tubers often reach 18% and you can expect a beer of 7 to 9% alcohol."

Lukens says the crop is not bothered by insects or diseases and produces enough growth to choke out most weed growth. Vince Erickson has never used herbicides on his artichokes, although he does cultivate at least twice.

Erickson plans to grow 50 acres of artichokes next year for alcohol production, using a corn chopper to cut off the top growth. He leaves the tubers in the ground and simply hills them into rows with a chisel plow in the spring. He fertilizes with 20-20-20 fertilizer through his irrigation system. If volunteer plants become a problem in successive crops, Erickson says conventional herbicides will kill them.

Erickson primarily sells seed stock to nurseries but will sell to anyone while supplies last. At the Brown Bulb Ranch Lukens sells seed stock for \$.50 to \$.60 per pound. Planted like potatoes, there are several "eyes" on each tuber, each producing a new plant. A potato planter can be used to plant them in either the fall or spring.

One farmer, Harold Metcalf from

USERS REPORT 24 TO 45% INCREASE IN GAS MILEAGE, SAYS INVENTOR

Hydrogen "Injector" For Cars, Trucks

"We combined the best of two ideas," says Iowa farmer John Moss who, in conjunction with his son Neal, is manufacturing and marketing the new Moss Fuel Master.

About a year ago, John began experimenting with a fuel vaporizer manufactured by Intermountain Industrial Supply, Idaho Falls, Idaho. Several months after installing it, he read the report in FARM SHOW about how John Lorenzen of Woodward, Iowa, was experimenting with a fuel cell for turning ordinary tap water into fuel for his pickup. It uses electricity off the alternator to generate hydrogen "on the go", extracting hydrogen from the water.

After reading the FARM SHOW report, John and Neal drove to Woodward to visit with John Lorenzen, and to learn more about his experiments with hydrogen fuel for cars, pickups and trucks. Thanks to Lorenzen, they went home with some new ideas for converting the basic Intermountain vaporizer into a hydrogen-generating unit which they are now manufacturing and marketing as the Moss Fuel Master.

The hydrogen-producing unit, which is inserted into a sealed plastic tank which goes under the hood, is made up of a set of 5 stainless steel plates (2 by 5 in.) spaced about 1/4 in. apart and connected to the car's electrical system. The unit extracts hydrogen from water "on the go", injecting the hydrogen directly into the carburetor. However, instead of using water as the source of hydrogen, the Moss's have discovered that windshield wiper fluid works even better. "It's non-freezing and is a lot less corrosive than plain water," explains John.

He notes that there seems to be no advantage in using more than 5 plates, or in using 2 complete sets of hydrogen-generating plates.

The Fuel Master device automat-

Elk City, Okla., is reportedly one of the first to make alcohol from Jerusalem Artichokes. Just experimenting, he says he made enough to learn that he needed no cooking and no enzymes—just regular beer yeast.

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John Moss holds kit made up of hydrogen-producing plates which are sealed inside plastic tank.

ically kicks in when the switch is turned on and doesn't interfere with starting of the engine, explains John Moss. "For some reason, it seems to work best on Ford Ltd's and on models equipped for burning regular gas. A relay and fuse separate the Fuel Master's electrical system from the car's electrical system," John explains. "No modification of the carburetor itself is required."

Physical dimensions of the unit are 9 1/2 in. high, 7 1/4 in. wide, and 7 1/4 in. deep. John says it readily adapts to any car equipped with a pollution control valve. "In the last couple of months, since introducing the pilot model, we've sold about 60 units," he told FARM SHOW two weeks ago. "So far, we haven't had any problems with performance. Customers tell us they're getting 24 to 45% improved gas mileage."

The Moss Fuel Master sells for \$135, plus shipping and handling. "We install the device on cars brought to our plant for \$185," says John.

For more details, contact: FARM SHOW Followup, Moss Fuel Master, Inc., Route 1, Box 150, Sioux Center, Iowa 51250 (ph 712 722-0214).