

Quinoa crop do with help from

by Stevenson Munro

CANTON -- Recently, seven area youths in need of good jobs weeded an experimental plot of quinoa under the hot sun out at Norris Conant's farm. Last month it looked like they might not have anything to weed at all.

Scott Christiansen, the economic developer for the River Valley Growth Council, hopes that this South American "super grain" might prove to be a valuable cash crop for local farmers in the coming years. Most of the youths who spent the morning pulling pigweed from the test plots were taking time off from their jobs at Wal-Mart and Subway, where they have been placed by Western Maine Community Action, a local nonprofit tasked with helping teenagers and young adults learn employment skills and transition into the job market. If this quinoa crop proves successful, perhaps "this could create some jobs," said Lloyd Holman, an employment counselor for the kids.

Working with a \$4,000 plus grant from the USDA's Sustainable Agriculture Research and Education Program, Christiansen and Growth Council Board member Conant planted an acre of Conant's land in June with nine separate strains of quinoa in 17 test plots. The plants should start maturing in September, when they will be evaluated by one of the world's premiere quinoa experts, Dr. Sarah Ward from the University of Colorado.

The crop had some setbacks last month when the Diamond Back moth chomped it's way through the field, destroying the main seed stalks on most of the plants. The damage happened so fast that Conant didn't have time to respond. "One week it looked good, next week it was decimated."

Dr. Ward in Colorado says that this is the only place in the world where the diamond back moth has attacked the plant. Luckily, the

munched plants soon recovered, sending out several peripheral seed spikes, and now the field is filled with flower heads getting ready to seed.

On Monday, Dr. Ward was scheduled to visit the farm for a quinoa luncheon along with the Maine Agriculture Commissioner Robert Spear. Most likely they will be eating quinoa pasta and cereals, but Christiansen says that he has a mean quinoa potato gnocchi recipe that he might prepare for the occasion.

So what's all the fuss about this plant, anyway? Well, simply put - quinoa is extremely nutritious and it grows in poor soil. Cultivated by the ancient Incas and native to the Andes, it has been around for over 5,000 years. Although it is called a grain, quinoa is really the seed of a green leafy plant. It is related to spinach, pigweed, and lamb's quarters; and its leaves can be eaten as salad greens. In fact, its similarity to pigweed made weeding the plots somewhat challenging for the youths, because some of the plants looked so much like their weedy botanical cousins.

Most importantly, quinoa is extremely high in protein - about 11-15 percent. And unlike a lot of grains, quinoa is not missing the amino acid lysine. This makes it a much more complete protein source. The World Health Organization has rated its protein quality as equivalent to milk's, and it surpasses wheat. It is also very high in a lot of trace minerals, iron and many B vitamins.

Quinoa's seeds are tiny, somewhat flattened with a pointed, oval shape. They can be any color from pale yellow to white to brown to red to black. When cooked, the grain quickly expands to three or four times its dry volume, and is light and fluffy in texture. It can be substituted for most grains in many dishes, is used to make wheat free pasta, and can be ground into flour. If you

ing well, area youths

want to have a look at the grain, you can find it sold at the Red Hill Natural Food store in Rumford.

While the American market for quinoa is small, it is growing and Christiansen believes money can be made at current market prices. Wholesalers purchase the organic grain for 80 cents a pound at the farm gate, while some farmers are selling it direct over the internet for anywhere from \$1.99 to \$3.99 a pound. At a yield of one ton per acre, an acre of quinoa could net a farmer anywhere from \$1,600 to \$8,000 for one summer's growth.

Just to give an example of its potential, Christiansen says that General Mills has indicated a desire

to make a breakfast cereal out of quinoa if they can secure a steady supply of the grain – 25 million tons a year, to be exact. At 80 cents a ton, that's rings up to a potential market of \$40 billion a year. Of course,

Americans are only growing a tiny fraction of that amount of the grain, and General Mills is a long way from unveiling a quinoa cereal for the supermarket shelves.

But still -- it's food for thought.



Tina Maloney, 17, Mexico, and Jessica Viles, 17, Strong, weed a test plot of quinoa in the dry hot sun last Thursday morning. Tina usually works at the Armory in Rumford and Jessica will be starting a CNA course in two weeks. Both youths are employed by Western Maine Community Action.

Quinoa crop a curiosity

Researchers are closely monitoring the progress of experimental plots in Canton.

BY EILEEN M. ADAMS
Staff Writer

CANTON — It's still a couple of months away before it's known whether quinoa could become a saleable crop for the River Valley, but so far, the experts are learning a lot about the non-gluten, grain-like plant.

The experimental crop was planted at the end of May by Canton farmer Norris Conant using a grant from the Department of Agriculture, the expertise of several agricultural/environmental agencies and under the support of the River Valley Growth Council.

"I'd like to see if we can come up with something that the state of Maine can grow," said Conant.

Eight different varieties of quinoa have been planted in 16 different 12-



EILEEN M. ADAMS/SUN JOURNAL

KEEPING THE WEEDS OUT. A group of trainees from the Western Maine Community Action and Career Center Youth Program pull weeds from some of the eight test crops of quinoa planted at Norris Conant's farm. The closest four weeders are Jeremy Waugh, Orin Knowles, Kairra Blodgett and Mike Evans.

foot-by-80-foot experimental plots so that those monitoring the harvest can learn which are most likely to do best in the Maine climate and soils.

At the end of the season, three or four will be chosen for planting next

year, said RVGC Economic Developer Scott Christiansen.

Quinoa (pronounced keen-wah) is a grain-like food that has been used

SEE QUINOA PAGE A7

Quinoa

CONTINUED FROM A1

for years by gluten-allergic individuals. It is sold as both flakes and flour for use in cooking, and can be served as a rice-like side dish.

So far, the crop is slightly less successful than he had hoped, but Christiansen said experimentation is the purpose of planting quinoa in the first place.

It's never been grown in Maine so the agricultural experts have to find out what kinds of soils it likes, how thick to plant the crop and what insect pests like to feast on it.

Dense planting

"Maybe it has been planted too densely," he said as he pointed to one section that didn't seem to be thriving.

Conant, however, thinks the crop is doing pretty well, all things considered. "The weather's been weird. I think the crop is better now than it was a month ago. I think it's going to come out all right. I want to show people that we can grow this in the state."

Mystery worm

And maybe a still unknown variety of insect is causing the problem.

A tiny yellow worm has been found on some of the plants, said Oxford County Soil and Water Conservation District agent Jeff Stern, as he placed one on his hand.

The quarter-inch long worm has been taken by Oxford County Extension Agent Barbara Murphy to find out just what it is. Once that's known, Conant will know how to treat the infestation.

He said the appearance of the unidentified worm goes right along with the abundance of cucumber beetles and potato bugs on his other crops this year.

Although the pigweed growing among the quinoa crop are closely related to the experimental crop, the pesty worms aren't affecting them.

The weeds, sometimes called lamb's-quarters and related to

perimental crop.

Weeders on Wednesday sometimes had to look really close to make sure the quinoa stayed and the pigweed was pulled out.

Weeding to be done

The DOA grant helped pay for the seed and some expertise, but it didn't pay for weeding.

Conant does as much as he can while still tending to his farm, Christiansen weeds for an afternoon almost every week, and members of the advisory agencies pitch in whenever they can.

On Wednesday, Conant got a little extra help. About 10 of the enrollees in the Western Maine Community Action and Career Center Youth Program helped out.

Once the crop nears harvest time, project consultant Sarah Ward, an associate professor of plant breeding and genetics at Colorado State University, will fly out to Conant's farm to take a look at the eight varieties. She'll assess the problems and successes and make recommendations for a second experimental crop next year.

Representatives from OCSW-CD, Oxford County Extension, the Natural Resource Conservation Service and Resource Conservation Development will all get together and pool the information they have gathered over the growing season, said Stern.

Conant said he'd replant the most successful crops again next year, with or without additional grant money. He likes to try new crops. In past years, he's been an experimental grower of a variety of different corn species.

The project, spearheaded by the RVGC, is one of the hopes for finding new industries for the region.

Quinoa, which is now largely imported from Canada or South America, can be processed into food products that can be served in a variety of ways.

It is sold in health food stores and is used by those allergic to wheat as well as by many others.



GREGORY RICE/SUN JOURNAL

GROWER: Norris Conant has agreed to grow 10 acres of the experimental crop quinoa in Canton. What is quinoa? Find out on **A3**.

Cropping up

BY EILEEN M. ADAMS
Staff Writer

Experiment takes root

CANTON — Sparkling sun shined brightly on a spring green field here last week as a group of local agricultural experts surveyed the plot where an experimental crop will go into the ground next month.

Norris Conant, a longtime farmer, has agreed to give something called quinoa a chance.

Quinoa is known to health food stores where most of the

flakes, grain and finished products can usually be found. But most of these products are imported from Canada, or from quinoa's native lands, the Peruvian Andes and Bolivia.

Now, with the encouragement of River Valley Growth Council economic developer Scott Christiansen, the hands-on work offered by Conant

and Rumford Point organic farmer Curtiss Hallock, and the technical assistance of a bevy of agricultural and economic development experts from throughout the area, an experiment will be tried here.

"Will this grow? What kind of quinoa strain will grow? And what will the next grant application say?" asked Christiansen, who prior to coming

to the Rumford area, had worked with quinoa growers in China and Mongolia.

The experimental crop is being financed with \$5,000 from a sustainable agriculture research and education grant from the University of Vermont, obtained by Conant.

If growing quinoa is successful on Conant's farm this year, it will be tried again by several other area farmers next year.

SEE CROP PAGE A3

What is quinoa?

Quinoa, pronounced keen-wah, is a grain-like plant that has been grown by the Incas and others for thousands of years. The plants are thick, tall woody stalks, topped with large seed heads. It's the seeds that are ground into flour or cooked like rice once a soap-like substance called saponin is washed from them.

It is high in protein, calcium, B vitamins and iron. For people who are allergic to wheat products, it is gluten-free. It can be made into pasta and cereal flakes, among other things, and made into an array of baked goods.

The plant has grown in popularity over the years, particularly as trends have turned more toward vegetarianism, or for those who want to cut down on meat consumption.

Sources: fatfree.com and findarticles.com

Crop

CONTINUED FROM A1

Mark Hewes, coordinator for the Threshold to Maine, a conservation development organization that advocates economic development through agriculture and other means in western and southern Maine, is one of the group leaders who will be working with Conant.

"The best we can come out with this year is to find which strains do the best. Then, perhaps, we can go to commercial trials," he said.

Later, if growing the grain is suitable to western Maine soils and climate, sources for processing it may be found or developed.

Jeff Stern, coordinator for the Oxford County Soil and Water Conservation District, will monitor the plant's growth, photograph it at various stages, then educate the public about its potential.

Conant will plant one acre with nine different varieties of the grain this year using stan-

dard farming practices. Perhaps an organic method will be tried at another time, but for the initial crop Cooperative Extension agent Barbara Murphy said similar methods must be used for all the seed varieties.

The plants will be harvested in mid-September. At that time, the most suitable strains will be selected, then seed saved for planting next year. Some will be sent to a baker to try in bread.

"Quinoa should be grown according to nature, but if there is a drought, then maybe some irrigation," suggested Christiansen who believes the South American crop should do well here. "Wherever potatoes do well, quinoa will do well."

Conant believes the combination of hands-on work by Hallock and himself, along with the guidance and advice of the local experts, means the venture will be successful.

"We can come out smelling like a rose. We hope to show the River Valley that we can grow it," he said.

eadams@sunjournal.com

Grain project may go to resource group

*The farmer who
grew the
experimental crop
wants to continue
with the project.*

BY EILEEN M. ADAMS
Staff Writer

RUMFORD — With a successful experimental quinoa crop completed for the year, the local Growth Council plans to turn over future experiments to Threshold to Maine.

The River Valley Growth Council on Wednesday gave the go-ahead to its economic developer, Scott Christiansen, to begin negotiations with the resource conservation and development nonprofit organization for continuing the project.

Canton farmer Norris Co-

nant, using a small federal grant, planted the state's first-ever crop of the grain that comes from the Andes Mountains at his farm under the guidance and sponsorship of the RVGC this spring. As an experimental crop, nine varieties were planted, with some doing better than others.

The Growth Council helped sponsor the experimental planting with the long-term goal of eventually developing a processing plant that could take the raw seed from the plant and make such products as pasta, cereal, breakfast flakes and flour.

That will be one of the negotiation points Christiansen will have with Mark Hews, coordinator of Threshold to Maine. Later experimental quinoa crops may be planted outside of

SEE GRAIN PAGE B2

Sun Journal

Lewiston, Maine, Thursday, October 3, 2002

RUMFORD

Grain

CONTINUED FROM B1

the area, including in Aroostook County, although Conant said Wednesday that with or without funding, he plans to plant the nongluten grain at his farm again next year.

Quinoa products appeal to people who have an aversion or allergy to wheat and other grains that contain gluten. Most quinoa products sold in the United States are grown in Canada.

During this first experimental crop, several state and quasi-state agencies oversaw the growth of the pigweed-like plant at Conant's farm.

Christiansen said this first year's crop, "shows that it grows in Maine and can be a successful

crop. This is a good time to turn the project over. We want to process the stuff."

If the change in leadership for the grain is agreeable to both sides, then the Threshold to Maine division serving several southern Maine counties will go

after future grants for development of the grain and its products.

Hews plans to attend the Growth Council's November meeting to further discuss the joint partnership.

eadams@sunjournal.com