

Good morning, sunflower!

New co-op introduces decentralized biofuel production

Local, local, local. The hue and cry the “foodies” raised decades ago has grown into a trend, today even major grocery retailers recognize the demand for locally-grown.

And now the concept’s expanded to biofuel: The USDA recently awarded a small co-op a grant to establish a distinctly decentralized project of oil-for-fuel production in Washington state, quite in contrast to most proposals that call for facilities engineered for millions of gallons of output.

They’re looking for 50 growers, explained Ion Manea, director of the Auburn-based Heritage Farm Cooperative that was started by a group of five a year ago. The plan is for the 50 growers to raise sunflowers and store the harvest on-farm until the co-op’s mobile crusher arrives. Concurrently the co-op will provide the expertise to modify tractor diesel engines so they run on pure sunflower oil. “A grower who commits 12 percent of his acres to grow sunflowers will have enough fuel for his farm,” Manea said.

Eastern Washington figures prominently in the co-op projections. As a matter of fact, we meet Manea at a field near Toppenish, close to Heritage University which is also involved in the project. The sunflower rows stand at attention, deep green, the wide leaves reaching out to fill all the space, the hefty stalks pushing up rotund heads poised to flower by the end of August. Notably, this field was planted on July 9, indication that sunflowers can be raised as a second crop on irrigation. Manea said that an October harvest is projected here.

Most of us think of North Dakota first in the context of sunflower farming, but not Manea. He was reared in Roumania where the countryside blazes with sunflowers every summer, he related. “It’s the number one oil seed crop over there. A lot of countries around the Mediterranean grow sunflowers, that’s why the people are so healthy – it’s not the olive oil, that’s just hype, their diet consists of a lot more sunflower oil than olive oil. Sunflower oil has a good balance of polyunsaturated, monounsaturated, and saturated fats.”

Helianthus—the sunflower is native to North America (Kansas is the Sunflower State), but for agriculture the 1920s Ukraine figures prominently in sunflower history, Manea noted. It’s from the Ukraine that sunflower farming spread to Roumania and other East and South European countries.

“When I grew up we still hand-harvested the sunflower crops,” Manea recalled. He motions the quick chop that harvesters used to take off the sunflowers heads, tossing them into a wagon. Inside a barn the seeds were removed, also by hand. “The remaining stalks were used for all kinds of things,” Manea remarked. Small fencing around gardens and chicken coops was fashioned from sunflower stalks, and occasionally they were incorporated in roofing and, woven, they were

used as structural layer for plaster on buildings. The pithy inside of the stalks, meanwhile, has outstanding insulation qualities that, down the line, could become a biodegradable material with many uses, Manea said.



A parent-line sunflower seed field at Bill Wirth’s farm near Quincy.

How did he leave communist Roumania? With suitcases in a row boat at black midnight, ferrying across the wide Danube to Yugoslavia. “We had been planning our escape for a year and a half.”

His background Manea describes as two-prong. “I’m trained as an engineer, but farming is my passion.”

If an engineer were to design a crop plant it would look a lot like

the sunflower, he emphasized. “This plant has optimal solar panels that self-adjust,” he pointed out, reminding us that sunflower heads turn to the sun. “The hairs on the stem reduce evaporation, and the spongy material inside the stem is a water reservoir.”

The co-op’s plans entail use of the stalks as soil building material, while the meal left after oil crushing they market as high-value cattle feed. Manea explained that the hexane process of oil extraction is commonly used in the North Dakota sunflower industry, after which the meal contains mere traces of oil. Conversely, with only a crusher operating, the meal they’ll generate at Toppenish will test much higher in protein and oil. “Our meal has 32 percent protein, 12 percent oil, and 14 percent fiber. For feeding cows our meal will be a good ingredient in the ration. We think we’ll be able to sell the meal for \$300 a ton because it’s so much more energy than the North Dakota sunflower meal that sells for around \$200 a ton.”

That the local angle of the sunflower project appeals to the independent streak of farmers is an aspect that Manea is counting on: “We’re looking to expand our grower base to achieve economy of scale.” To that end the co-op is organizing farmer seminars that explain the agronomic details as well as proper harvest and storage management, as well as mechanic work. “To begin with the co-op could convert

a 200-horsepower tractor (to run on straight oil) that can be shared by the members,” Manea said.

As for the mobile crusher, they’re building it in a 20,000 sq. ft. facility they’ve leased. “Our crushers are of German design,” Manea noted.

After a three-year research of cultivars suitable for the Pacific Northwest, Manea is confident that the decentralized biofuel concept will be a success. In North Dakota and Colorado, he said, yields average about 1500 pounds of sunflower seed per acre. “In optimal Columbia Basin conditions we’ll achieve yields of up to 4000 pounds per acre,” he summed up.

At Quincy we spoke with Bill Wirth who’s raised sunflower seed crops for two years. “There is only a little

bit of sunflowers being grown around the basin,” Wirth said. “We grow our sunflower seed for a company out of California, they’re running out of isolation, they have too many wilds down there.”

Wirth grows mostly hybrid sunflower seed, in addition to some parent-line increases. “Most of the seed ends up in the Midwest,” he remarked. “We grow seed of confectionery sunflower varieties—that’s the ones sold in ballparks—and we grow varieties that are used for food oil. Those are varieties with darker seeds.”

Wirth described sunflowers as a low-nitrogen crop: “about 100 pounds

of N per acre, half the rate of corn.” For harvest he uses wheat headers that have “pans” attached up front. “We just work the residue in to ground after harvest; although, we may swath it this year. Some of the livestock feeders are so desperate for feed stock they’ve actually been buying sweet corn stalks that were swathed.”

The biggest threat to sunflower crops are birds, Wirth found. “Birds just love the seed. You need to use propane guns or shotguns – they say that if you keep the birds edgy for about a week they go somewhere else.”

Up near Bridgeport on Pearl Hill, Wade Troutman proved some years ago that sunflowers produce a good crop even on dryland with as little as 10-inch annual precipitation. “I was amazed how well they grew,” Troutman told us. “Those sunflowers really broke up the hard pan, they had the same effect as subsoiling, which we can’t do here because of the rocks.”

But the wildlife pressure, well, “it was insane,” Troutman put it. Not only did birds swoop in en masse, but the deer went crazy. “The farm is close to a wildlife area that has a herd of 300 mule deer,” Troutman related. “Deer were eating the ripe seeds, and then they were eating the stalks. On opening day of hunting season some guys asked me for permission to hunt in the field, they dropped 11 bucks out there... The sunflowers were a candy store for all the wildlife. I’d planted 40 acres by the house, and the 10 acres farthest away from the house had so little crop left, it wasn’t worth harvesting.” ■

To register for the cooperative’s Sunflower Biofuel workshops, go to www.agrofuel.org.



Jon Manea, director of Heritage Farm Cooperative fieldside near Toppenish.