

AGROFORESTY ON THE FARM

HAZEL ACRES HAZELNUTS

FENTON, IOWA

ROGER & JEFF JENSEN | 2014



About the Farm

Hazel Acres is the farm where Roger and Joyce Jensen raised five daughters and two sons. Jeff is the eldest of the two sons. Roger farmed and grew hogs farrow-to-finish through the 1980s and 1990s. Today, Roger works as a loan officer in Ringsted, Iowa. The row-crop acres are rented to a local farmer and Roger and Jeff focus on the hazelnuts and a large garden that feeds over 30 kids and grandkids. The hazelnuts are a research planting for Jeff to evaluate genotypes for possible vegetative propagation and breeding. More than 125 different bushes are evaluated, and their nuts are identified and preserved. To date Jeff has identified four bushes that have consistent yields with high quality kernels.

Roger and Jeff Jensen started Hazel Acres in 2005, shortly after Jeff was hired to work with third crops for a non-profit organization in southern Minnesota. "Third crops" are crops other than corn or soybeans, with a focus on perennials. One of the possibilities was hazelnuts - otherwise known as filberts- which are native to the Midwest and produce a tasty nut rich with healthy oil. "I never really knew they grew in the Midwest, but once I started looking into hazels as a viable crop, I was hooked," said Jeff.

The first 500 plants were planted in the spring of 2005 and included bare root and potted seedlings. The acreage Roger and Jeff selected had been a cattle feedlot before being converted to a hog lot, and later, converted to row crops.



Jeff shows off the first nut found at Hazel Acres during a field day in 2007. A total of three bushes produced at least one nut in 2007 and Jeff's "heavy producer" had two nuts that year.

Because the field was not seeded with a cover crop before the hazelnuts were planted, Roger and Jeff decided to space the rows 15-feet apart with five feet between plants. In that way, the rows were wide enough to accommodate a tractor pulling a disk.

Jeff and Roger watered each bush by hand, using a 300-gallon water wagon pulled with a tractor. Weed control was done using glyphosate around each seedling in the first two years, then hand weeding, mowing, and using a gas-powered trimmer in successive years. The planting is mowed every week as needed and trimmed with the trimmer at least every month May through September. No landscape fabric is used, although another planting that was established one year later did incorporate landscape fabric, along with mulch and a drip irrigation system.



Harvest began in 2009, with only a handful of bushes producing enough nuts to collect. Everything on the farm is hand-harvested with nut clusters picked off the bush, collected in 25-pound onion sacks, and hung to dry in the sun.



Because each plant is different, and Jeff is looking for plants with superior characteristics, he tracks approximately 150 bushes individually, taking the time to harvest, process, store, and record each bush separately. Although laborious, it is already paying off. Jeff has observed that some bushes seem to drop the entire nut cluster intact, while others seem to drop individual nuts out of the cluster. This gives Jeff hope that it may be possible to collect nut clusters off the ground, ensuring they are rope and reducing labor costs. Jeff explains, "I've been experimenting during the last couple of harvests on sucking up nut clusters with a vacuum system. The early results show promise, and by tracking with bushes tend to drop whole clusters, I can someday market bushes with that characteristic, facilitating easier harvest."

Marketing and Economics

Marketing and sales of nuts and nut products is a secondary concern for Roger and Jeff, with data collection and experimentation being the primary goals. However, with increasing yields and more plants producing, Hazel Acres now has enough nuts to feed all the grandchildren, with some left over to sell.

Quality is important to Roger and Jeff because they recognize that for many people hazelnuts will be new, a shriveled or “wooly” kernel would create a bad first impression for a consumer. “One of the benefits of identity preserving the bushes is that we know which bushes have the best kernels and should be sold in-shell so that the consumer is getting a nut with a high-quality kernel when they crack it open,” Jeff says.

Currently, virtually all Midwest-grown hazelnuts are direct-marketed to customers. Nuts sold in the shell bring from \$2.00 per pound to upwards of \$5.00 per pound for smaller quantities of high-quality nuts. The market for in-shell nuts is limited because most consumers do not want to crack the shells to get to the kernel. As a result, kernels sell in a range of about \$9.00 per pound to more than \$20.00 per pound on the retail market, with growers getting about 60% of that price.

After consulting with officials at the Iowa Department of Inspections and Appeals, Roger and Jeff learned which products and methods of selling do not require a license or commercial kitchen. “Now that I know what I can and can’t do legally,” Jeff said, “I’m looking to start advertising and getting the word out. I’ve sold quite a few bags of roasted kernels for \$12 per pound and people are gobbling them up.”



In addition to the tasty nuts, the characteristics of the oil from the kernels is almost identical to olive oil and can be used in a wide range of food applications as well as skin moisturizer for the cosmetics industry. The oil also makes a superior biodiesel compared to animal fat or soybean oil-derived fuel. “We love to spritz vegetables like green beans, asparagus, and peppers with some hazelnut oil,” Roger says with a grin.

Roger and Jeff admit that unproven plants, random genetics, and hand-harvesting make it difficult for them to profit financially. Before nut production becomes profitable, the industry needs better plants with some level of proven consistency that facilitate mechanized harvesting. Better plants would also improve the variability, making processing more efficient with greater yields. According to Jeff, “We need to identify those plants that are superior for whatever reason and get them into field trials. This is an area where new growers can get involved and help out.”

Lessons Learned

As with any “new” crop, the lessons learned from the early adopters are invaluable. One lesson Jeff learned early on was that a cover crop of white clover actually grew too well around some of the small seedlings and smothered a few. “In retrospect, I should have used a mix with more grass.” Jeff said. “But the cover crop did keep weeds down and fix some nitrogen, so it did work in that regard.”



Nut clusters are handpicked from the bush when ripe, typically in early September. Mature bushes can grow up to 15 feet if not pruned.

Roger and Jeff both agree that if they were to start again, they would be more strategic in establishing their orchard. They would not have planted so many seedlings and would have started smaller, working with existing growers. “We should have worked with three or four growers to propagate their best plants and then tracked them for performance,” Roger said. This would have put them much further ahead and would have helped the entire industry by evaluating several genotypes from existing growers.



Hazelnut growers grapple with a range of issues, including a wide ripening window, quality concerns, harvesting challenges, husking and processing problems, un-ripe nuts, and more. “I can’t stress enough,” says Jeff, “that starting small and getting some known plant genetics can mitigate a whole range of issues down the road.”

Jeff has one additional piece of advice for anyone interested in getting started with a few bushes: “Take a hard look at putting some sort of irrigation, whether it is drip tape, soaker hose, sprinklers, whatever. The bottom line is that for these bushes to produce consistently and at a high level, they need moisture.” The original planting that was established in 2005 was watered the first two years with a watering wagon and it worked fine; however, in 2014 Jeff will be installing drip tape irrigation to boost yields.

Both men are optimistic about the future as they continue to learn more about growing hazelnuts. As genetics improve and Best Management Practices (BMPs) are refined, they envision a time when hazelnuts are grown on thousands of acres throughout the Midwest, producing more oil and meal per acre than even soybeans while providing a suite of ecological services to all of society.

To learn more, visit www.TreesForever.org/acceleratingagroforestry or contact us at info@treesforever.org.

Trees Forever

80 W 8th Avenue, Marion, IA 52302

(319) 373-0650



This project was funded in whole or in part by the Leopold Center for Sustainable Agriculture. Established by the 1987 Iowa Groundwater Protection Act, the Leopold Center supports the development of profitable farming systems that conserve natural resources.

© 2014 Trees Forever. All rights reserved.