Agroforestry Case Studies: Chestnuts at Red Fern Farm

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Abstract
This is a case study of Red Fern Farm, a family-owned nursery and tree farm in southeast Iowa owned by Tom Wahl and Kathy Dice. One of their primary crops are chestnuts. The case study outlines their farm management practices, lessons learned and marketing and economic concerns.

Disciplines
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About the farm

Red Fern Farm is a family-owned nursery and tree farm in southeast Iowa. Tom Wahl and Kathy Dice started their tree farm in 1987. They now have 15 acres planted to a variety of fruit, berry and nut crops, as well as container-grown seedlings and medicinal planting roots that are well suited to Midwestern growing conditions. Chestnuts are one of their most marketable crops. Due to high demand, Wahl has become a chestnut broker for other growers in the area.

Wahl and Dice value crop diversity for increasing resiliency in the face of weather extremes, reducing pest and disease problems, and spreading out labor demands. Advice is part of their product line, and Red Fern Farm has a series of field days where visitors can learn about crop management and marketing. The farm has low equipment costs and depends on family labor. However, Wahl and Dice are considering labor options—and the future of their farm—as their children grow up.

The growing demand for high-quality chestnuts will be virtually impossible for U.S. growers to meet “in this century” or ever, according to Wahl.

Chesnut burs. Photos courtesy of Red Fern Farm.

Farm management practices

At Red Fern Farm in Wapello County, Iowa, chestnuts are one of the most important cash crops. They are a nutritious, high-value crop with a growing demand. Chestnuts require well-drained slightly acidic soil and grow over a wide range of midwestern conditions.

Over most of the farm, trees and bushes are spaced in alleys 10x10 feet apart to accommodate mowing equipment. As with many of the trees grown at Red Fern Farm, it is important during chestnut establishment to keep down plant/grass competition after planting for three to five years. Once trees are well established, mowing is generally necessary only at harvest time when ground cover must be kept short so nuts are easy to find and pick up.

Ideally, chestnuts should be harvested from the ground every day to prevent them from drying out and to reduce loss to wildlife. At Red Fern Farm, chestnuts are harvested using a low-tech, hand-harvesting roller called a “nut wizard” that is available in different sizes. Wahl says producers can manage chestnuts without chemicals or expensive machines. He has tried an expensive mechanical harvester, but found rollers to be as effective and low cost.

Chestnut-related labor is concentrated during the harvest season from mid-September to late October. Chestnuts are picked from the ground after they naturally fall out of husks known as “burs.” If picked before they drop, the spiny burs have to be physically removed, which is very labor intensive. So far, Wahl has not found a commercial market for chestnut burs, but he has used them for compost and as a natural deterrent for pests that avoid their prickly texture.

Wahl estimates that one person can manage around 10 acres of chestnuts. He says that growers can expect trees in the Midwest to average 1,000 to 4,000 pounds of harvested nuts per acre by 15 years of age on a good site, depending on management factors, such as irrigation and fertilization.

“We are pretty passionate about the role of trees in sustainable agriculture.” — Tom Wahl, Red Fern Farm
Marketing & economics

At Red Fern Farm, marketing varies for different crops. Wahl and Dice spend little on advertising, since word-of-mouth customers provide adequate income. They do, however, maintain an active website and online product catalog, write an annual newsletter with advice and product information, and hold small-group field events during the growing season.

Chestnuts are the crop Wahl finds easiest to sell. There is a strong interest in chestnuts, especially from Eastern European and Asian communities who grew up valuing chestnuts as a favorite food. Wahl has a waiting list of such customers who will pay well for high-quality chestnuts. He takes orders of up to 2,500 pounds at a time.

To help address the demand, he has become a chestnut broker, buying and processing nuts from other producers. Wahl believes that “it will take centuries” before U.S. growers could meet existing demand, and “if demand continues to grow as it has been, there is no possibility we will ever be able to meet the demand.”

The chestnuts are sorted into three different sizes and bagged in 25 pound bags. The price varies according to the size. In 2012-13, wholesale prices for growers in the Midwest averaged $2.25 per pound, or around $5.50 per pound for certified organic nuts.

Some chestnuts are shipped out of Red Fern Farm, but most customers pick them up at the farm, some coming from as far as 250 miles away. So far, he has been selling 90% of his chestnuts in Iowa. Wahl sold 21,000 pounds of chestnuts in 2011. When customers come to buy chestnuts, they often make other purchases.

Lessons learned

“The old cliché, ‘don’t put all your eggs in one basket,’ is good advice,” says Wahl. He explains that extremes of heat, cold, rain, snow, ice, wind and drought affect different tree crops differently, according to the crop and the timing of the event. A hard frost on May 1 may damage an apple crop, but leave chestnuts unharmed. The same temperature on May 20 could ruin the chestnut crop, but leave apples unfazed. The greater the number of different kinds of crops you grow, the less likely it is that an extreme weather event will wipe out everything.

Another benefit to crop diversity is to distribute the workload across the season. Raspberries, blackberries and gooseberries are ready in June and July. Aronia berries are harvested early to mid-August. Hazels are picked mid-August to mid-September. Chestnut and pawpaw harvest runs from mid-September to late October, and persimmon harvest may last all the way through November.

Goals of the farm

“Greater crop diversity increases resiliency in the face of weather extremes,” says Wahl. “Diversity also reduces the number and severity of pest and disease outbreaks, and spreads the workload through an extended growing season.”

“Besides making a living ourselves and caring for our land and water, we want to provide practical information to others who are looking for sustainable farming options that can make as much or more money than corn and soybeans,” says Wahl. To promote agroforestry options to other practitioners and agricultural educators, Red Fern Farm is a MAAWG partner.

CONTACT MAAWG

The Mid-American Agroforestry Working Group (MAAWG) sponsors networking and educational activities to advance regional agroforestry interests. To learn more about this farm, or find other case studies, visit www.midamericanagroforestry.net/agroforestry-case-studies. You can also follow @agrof_maawg on Twitter or contact us at maawg.agrof@gmail.com