

Getting Started

Undertaking an orchard project will involve a variety of factors and considerations before you plant. Key among these will be marketing and site selection, but also understanding: plant communities; soil fertility; insect, weed, and disease management; fruit thinning and harvesting; record keeping; and your own capacity to care for an ecosystem. Our biggest challenges so far have included budgeting for start up costs, managing cool season perennial grasses, learning equipment needs, and developing effective cover crop mixes and techniques.



Going Further

Public participation and co-creation in our project installation maintenance, and outreach is a significant part of our farm and research. We provide outreach opportunities and educational resources through field days, resources such as a budget fact sheet on transitioning to agroforestry, and are working on a co-created traveling exhibit that captures the places, faces, and voices of ecological agriculture in the Midwest.

Staying Connected

Visit our website at www.hilltopcommunityfarm.org to learn more about networks and others involved.



We are small-scale diversified farmers, producing organic vegetables, herbs, cut flowers, and fruit in northwestern Sauk County, in Wisconsin's Driftless region since 1993. We are professional grower members of the Midwest Organic Tree Fruit Association, Madison Area Community Supported Agriculture Coalition, and Farmers Raising Ecologically Sustainable Healthy Food. Contact us at 608-257-6729 or email e.schneider.hilltopfarm@gmail.com for questions, or curiosities regarding our farm and research.

Support for our research is sponsored by



Special thanks to UW Madison Center for Integrated Agricultural Systems, WI Agriculture Innovation Center, Dale and Cindy Secher of Carandale Farms, the Juneau County Natural Resource Conservation Service, Julianne Hunter of Future Deco Designs, and all of our family and friends who have contributed their 'sweat equity' to this project.

Agroforestry and Sustainable Fruit Production at Hilltop Community Farm



Woody fruit crops, because of their perennial nature, are potentially appealing to both farmers and conservationists since they do not involve the annual soil disruptions of tillage and cultivation. However, apples – the most widely grown fruit here in the Midwest – are beset by a number of pathogens and pests in our climate, a problem often exacerbated by monocultural practices. Profitable production for the organic grower is therefore often a challenge.

A Different Vision

In 2008 we began transitioning land to an organic mixed fruit orchard – designing for sustainability at as many levels as possible while seeking to increase the diversity of locally grown fruits.

Using a combination of agriculture and forestry practices we set out to assess the sustainability of growing eight uncommon yet marketable fruit crops: Russian Quince (*Cydonia oblonga*), European black currant (*Ribes uva-crispa*, *R. hirtellum*), White and Red Currant (*Ribes rubrum*, *R. petraeum*), Saskatoon (*Amelanchier alnifolia*), Seaberry (*Hippophae rhamnoides*), and American Elderberry (*Sambucus canadensis*). These species are high yielding, environmentally friendly, exceptionally nutritious, and exhibit strong potential for organic production. Their widespread adoption could lead to increased economic viability for small farms while expanding the palette of fruit for which the Midwest is known.

Our main objectives include:

- Find fruits that are suitable for organic production in the Midwest, can be easily grown, and have minimal labor, establishment, and management costs. The fruits should also be nutrient rich, appealing, and accessible to consumers.
- Through orchard design, stimulate the use of sustainable agriculture methods that demonstrate ways to conserve moisture, build soil fertility, manage for wildlife, and reduce weed competition.
- Provide resources to growers about the value and potential profitability of producing these fruits.

Our project reflects ongoing changes in consumer values and food choices from cheap, fast, and easy to the desire for healthy, sustainably grown and accessible local food.

Why Agroforestry

Agroforestry is an intensive land-use management system combining trees and/or shrubs with crops and/or livestock. Agroforestry helps farmers diversify products, markets, and farm income while emphasizing five key land use practices: alley cropping; forest farming; silvopasture; windbreaks and field borders; and riparian forest and upland buffers. Examples of agroforestry on our farm includes forest gardens, windbreaks, and alley-cropping.



Guilds as an Orchard Design Tool

A guild is a group of organisms placed in relationships that benefit a central component (and you). For example, the inclusion of a single comfrey plant per square meter around a crop plant employs comfrey's soil-mining capabilities to provide all necessary nutrients to the crop, save nitrogen. Adding a nitrogen fixing plant such as seaberry, purple prairie clover, or blue false indigo to the guild obvi-

ates the need to bring in any amendments whatsoever. Planting field borders and windbreaks that include such species as bergamont, bluestem, hazelnut and white spruce creates habitat that attracts beneficial insects and pollinators while helping regulate air flow, buffering temperature extremes, and providing shelter from wind, sun, and snow. Raptor perches and piles of stones in a swale will provide habitat for birds of prey and snakes that can help keep rodent populations down.

The following planting sequence represents the guild pattern used in our research plots:

- Fruit tree/shrubs - 5 Saskatoon, 5 Quince, 15 Aronia, 5 of each – Red, White, Black Currant, & Gooseberry (note: nut trees will serve the same function as fruit trees)
- One nitrogen fixing shrub – Sea berry + purple prairie clover, blue false indigo.
- One comfrey plant or lovage (dynamic accumulators, lovage good in soups).
- White clover (nitrogen fixer, bee forage, edible)
- Fennel or dill (culinary, insectory)
- Borage (insectory, edible flowers, medicinal) or alliums.
- Enough low growing grass seed between guilds to handle high traffic. Our mix includes:
- 10% white clover, 30% red fescue (can substitute meadow fescue), 30% chewings fescue, 30% perennial rye mix. Suggested application rate - 30 lbs/acre.

Mulch treatments include compost, leaf litter, and forest duff incorporated in plant root zone.

The use of plant guilds may require you to forego mechanical harvesting, but this may be offset by the economic benefit of reduced use of fossil fuels and off-farm inputs. The ecological benefit of creating a stable permaculture cannot be measured.