

Conservation Corner for August 29, 2017

Growing Under Cover

The basics of year-round growing in Northern Michigan

By Jodi Venema DeHate
Wexford Conservation District

With the rise in demand for the locally produced food, new opportunities for people to farm in a small way are feasible, energy efficient, and can be profitable if managed correctly.

What's in a name?

Strictly speaking greenhouses are heated and plants can be grown either in the ground or in other structures such as in a hydroponics set up. Hoophouses are season-extending structures that do not have added heat and typically the plants are grown in the ground. The term “high tunnel” is another name for a hoophouse.

Where to start?

Site selection and preparation is key to starting your project off well. Look for an open space with little to no shade. Especially important is to take note of where shadows fall during the months of November through February when the sun is low on the horizon. Making the site flat is necessary to get the structure up well, just like for any other building.

Utilities

Consider the distance from your water, and if you will be able to bury the water line below the frost line. Is your well big enough to handle the extra load? Electricity is needed to run ventilation fans, hydroponic water pumps, supplemental heat, and lights if you choose to use them.

One Layer or Two?

Two layers of plastic can retain significantly more heat than a single wall can. Often the two pieces of plastic are kept apart by an air inflation system.

Snow and Wind

Be sure that the company who is furnishing your hoophouse understands the snow loads and the wind strengths that are possible in our area. The distance between the arches, purlins, and crossbars influence the strength of the structure, as well as the thickness of the material used to make those components. Gothic arches are known for being able to shed snow better than rounded arches. You also need to keep in mind that when snows are heavy, you may need to plow along the sides of the house so that the snow doesn't push the side walls in.

Dimensions

Do you want to run your small tractor through it? How much produce do you want to grow? Once they've been growing for a year or two, many growers have said that they wish they had made their hoophouse bigger!

Ventilation

Some hoophouses are designed to have sides that roll up or down to allow for ventilation. Others are vented mechanically with fans. Either way, ventilation must be well thought out so that the plants are not “cooked” on sunny days.

Funding

Hoophouses generally range in price from \$8,000 to \$12,000 depending largely on if you want to put the structure up yourself, or if you want to hire someone to do that for you. There are two programs that may be able to offset the cost.

The Natural Resource Conservation Service (NRCS) has a program for commercial farmers who want to erect a hoophouse on land where they are currently growing crops. To be eligible for funding, the hoophouse must be part of a conservation plan and be no larger than 2,178 square feet. The Wexford Conservation District is located in the same office as the NRCS, and you can call them at (231) 775-7681, ext. 3 if you are interested in learning more about this program.

Another source for funding is the “Hoophouses for Health” program. This is a collaboration between the Michigan Farmers Market Association (MIFMA) and Michigan State University, with funding from the W.K. Kellogg Foundation. The program provides participating farmers with funding to build a new hoophouse. Farmers “repay” their five-year, zero interest loan by providing free produce to qualifying schools and early childhood programs.

Growing challenges

When talking with Keith Jenema, long time greenhouse grower, he said some of the biggest challenges he faced is the timing of planting of seeds. He often starts his first seeds between Christmas and New Year’s. Keith has the option of using a furnace to keep his greenhouse warm in the winter, but he really relies on a pretty ingenious setup for running hoses of warm water through his hydroponic planters. This keeps the soil warm even if the air temp is much cooler. Pollination can be a challenge depending on what you growing. Keith uses some hand pollination when insects aren’t very active outside, but he has enough pollinators around during most of the year that he doesn’t really do much special. Many growers will either encourage native pollinators by planting nectar sources around the farm or have their own bee hives. In a hoophouse, diseases that stay in the soil can be a big problem. Planting resistant varieties and rotating crops can help break that disease cycle.

Fertilizer salts can build up in soils and can cause growing issues in any covered structure. One strategy is to leave the plastic off the structure from late fall to early spring. The snow and rain will help wash out some of those salts. Precise fertilizer placement or using fertilizer through some irrigation systems in the hoophouse can reduce the amount of fertilizer that is used.

Right to Farm

Just like any other farm, there are some best management practices to follow in order for a farm to be protected by the Right to Farm law. For instance, fertilizers should be stored at least 150 feet away from a well unless there is secondary containment, and then the distance can be reduced to 50 feet. In operations that use fertilizers in their irrigation set up, there needs to be a

backflow preventer that does not allow the fertilizer water mixture to make its way back to the well. This keeps the groundwater safe for everyone.

Record keeping plays a big factor in keeping a farm protected under the Right to Farm law. Applications of irrigation water, fertilizer, and pesticides all need to be recorded. Production records can provide useful details about what worked and what didn't for future reference.

Support

Workshops and intensive classes are available through many organizations. The Wexford Conservation District offers workshops on seedling production and on the details and merits of several different season-extending options. Michigan State University offers a one year on-campus course, online courses, and makes several publications available online. The Michigan Farm Market Association has a basic webinar online. The website www.hightunnls.org offers information from researchers and growers who collaborate to share experience and knowledge about hoopouses.

Jodi Venema DeHate is the Michigan Agriculture Environmental Assurance Program technician for Wexford, Missaukee, Kalkaska, and Crawford counties. If you would like to learn more about how she can work with you on conservation, you can contact her at the Missaukee Conservation District at (231) 839-7193 or jodi.dehate@macd.org

All photos were taken by Jodi Venema DeHate



Keith Jenema starts seeds in his heated greenhouse near Falmouth between Christmas and New Year's, enabling him to have an early tomato crop.



Hearty crops like kale and Swiss chard can be harvested year-round from a hoophouse when they are given a second layer of protection. Note: This photo is shown cropped



Gothic style hoophouses, like this one at Friends' Ministry in Lake City, shed snow better than those with a rounded top.

