SEASON CREATION

The Green Edge Model of Winter Growing

BUILDING THE NEW RURAL COMMUNITY: *A NOTE FROM KIP RONDY*

In 1972, I was attending graduate school at Kent State when I discovered I really did not want to be a social worker. What I really intended to do in this life was to farm. I left school, got a job on a garbage truck, and a year and half later bought my first farm in Ranger, WV. I believe my Mom's, "You are doing what?" could be detected from miles away upon hearing my plan.

I bought the farmstead that is now Green Edge in 1985. There were other ventures at the farm in those days – eggs, squash, strawberries, and seeds for Seeds of Change – to name a few. My observational skills were honed in Becky's and my ten year foray into landscape gardening in the Cincinnati area. Tending 25 to 30 gardens using predominately organic techniques provided us with a unique, wonderful opportunity to use various methods and techniques for dealing with all types of soil conditions, or predominantly the acute lack of soil.

Becky and I returned to vegetable farming in 2004. I was hesitant; past experiences had taught me that farming was hard work and even harder to make a living. Becky, however, was certain that it was time to return to farming and patiently waited a year for me to see the light.

Building the new Rural Community, literally from the soil up, has begun. Today Green Edge Organic Gardens is one of the largest private employers in our township. Methods of farming used and developed at Green Edge are a compilation of observations, borrowing from others, and trial and error. Providing year-round agricultural employment is part of our mission. Creating a local food economy that feeds the local community has been a process, and in southeastern Ohio, we are lucky to have many like-minded people working side by side with us in this effort.

Through this process of friends and neighbors binding together in mutual trust, to distribute their agrarian wares, we can take back that life that was depleted from our communities. It is in this spirit of community that we at Green Edge are willing to share our bits of knowledge with others, and have fervent desire to do so. For we are not strong unless our community is strong. It truly takes a village!

– Kip Rondy, *Co-owner at Green Edge Organic Gardens*

GREEN EDGE ORGANIC GARDENS: *A BRIEF HISTORY*

Historically, Green Edge Organic Gardens was a dairy farm, part of a thriving small dairy tradition throughout the foothills of southeastern Ohio. Now, Green Edge, under the management of owners Kip and Becky Rondy and farm manager Dan Kneier, is a 120-acre certified organic farm with 10 custom-built high tunnel-type greenhouses, growing a variety of seasonally appropriate crops. These houses are intensively managed using unheated systems and innovative design features to accommodate our farm-specific conditions. Produce is marketed to maximize profitability through the farm's community supported agriculture (CSA), the Athens Farmers Market, and local and regional wholesale accounts. Green Edge has transformed a piece of creek-side bottomland, less than one quarter of the farm, into a productive year-round operation with ten employees.

Since Kip and Becky moved back from operating a landscaping business in Cincinnati to their Amesville, Ohio farm in 2004, the farm has grown into a diversified full service operation, which has been involved with a wide array of markets, all served with their certified organic produce, mushrooms, and microgreens.

The village of Amesville is located in Athens County, a county designated by the Appalachian Regional Commission as "distressed," (meaning counties that have at least twice the national poverty rate and have a per capita income that is 67% of the national average or a three-year average unemployment rate that is twice the national average). In the rural community of Ames township (2010 population 1,183) Green Edge is a major economic asset employing 10 full-time people, 3 part-time and 4 paid summer interns. The Rondys' have created a rare thing: a viable mid-sized agricultural business which serves a growing market. The jobs they've created are full-time and year round due to the farm's use of advanced season extension techniques. At a time when the ability for local agriculture to become an economic driver is being recognized, the model created by Green Edge has become an example of a replicable system that offers a viable alternative to rural farmers looking for new markets and new systems to serve those markets.

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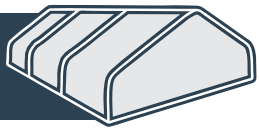
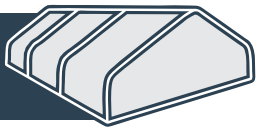


Why Grow Through the Winter Using High Tunnels?



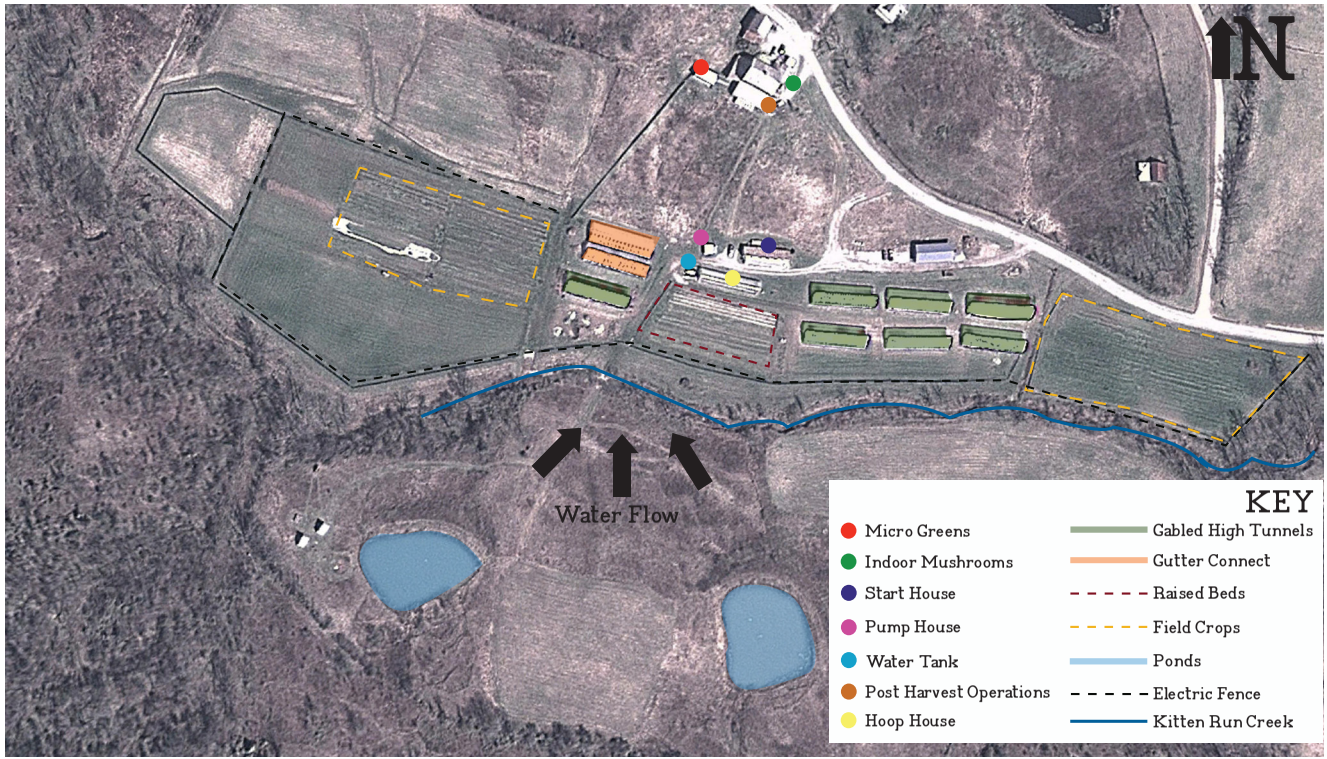
Using high tunnels at Green Edge means sustainable production all year, along with the inherent advantages of increased soil fertility, efficient water management, higher yields, and improved disease management. The high tunnels are specifically used to create a season as well as to extend seasons.

Winter growing increases profitability during periods of increased demand for fresh products and limited availability in the marketplace. Depending on the type of crop, Green Edge earns between $8,000-$13,000 from each high tunnel from mid-November through April.

Since employment is not limited to seasonal and part-time labor, this allows for the creation of real employment opportunities and for the training of new generations of farmers. Trained staff is not lost to seasonal attrition which greatly reduces staff turnover and facilitates the growth of the farm by keeping qualified well trained employees on the farm.

In order for local foods to be a significant part of an area's food system it is important that year round availability be focused upon. The great majority of local food production is still by definition "seasonal," which creates lower prices for local farmers in the peak summer months while creating a period of high demand and high potential price in the winter months. Focusing on winter production can create profits for the producer and give consumers a local alternative to fresh produce that is shipped extreme distances. Cold temperatures during the winter growing season also tend to concentrate sugars in the locally produced fresh products, which gives them yet another edge over shipped in produce.

Map of Green Edge Gardens



Infrastructure Guidelines

Green Edge Organic Gardens operates using several key pieces of infrastructure that allow us to grow efficiently year-round. These include physical structures as well as resources we sustainably manage throughout production. ***These include:***

Start House	Electric Fencing
Greenhouses	Water
Soil	Other Buildings
Covering	Utility Vehicles & Transport

START HOUSE

- A heated house using an hydronic heat system, powered by a hot water tank.
- The system costs $500 without the cost of the hot water hose.
- A closed circuit heating system cycles the hot water, operating at 20 lb. pressure, using a small circuit pump (A/C).
- This is a more efficient way to heat, as opposed to heating the air.
- The hot water hoses run on the bench, above a layer of bubble wrap insulation; the start trays sit directly on the hose; water temperature is approximately 140°F.
- Venting the house without mechanics is possible. Fans are used during the humid spring only; otherwise, the houses vent with operable panels on roof.

POTTING SOIL: *Don't put anything in you don't need*

- Because our farm is certified organic, it matters what is in the soil, so we make our own.
- Mixture of peat moss, compost, perlite, and kelp, along with other trace minerals.
- We use an appropriate certified organic approved water-soluble fertilizer as needed.

SOIL TEMPERATURE

- Ranges in the start house: salad: 55-60°F; germinating eggplant and tomato: 75-80°F.
- During cold times, a covering of floating row cover will create a thermo bubble over the top of the plants if you need to increase air temperature.
- We use a soil probe which is compatible with the thermostat; we use a probe suitable for a wet location.

GREENHOUSES

- We use 3 types of houses: 1 hoop house, 1 gutter connect, and the rest are gable roof houses: 10 high tunnels total.
- We prefer the gable roof: (pitched roof and 6' straight sides) because there is less condensation drip on plants which is important for winter disease control and winter working conditions.
- Made of galvanized steel with wooden sides currently and wooden ends.
- High tunnel dimensions are 30' by 96' and come from Nolt's in Leola, PA.
- It is possible to produce $8,000-13,000 in winter production per house.

HOUSE CONSTRUCTION

- Kip will construct a house with 1 other person.
- With a crew, we can cover 2 houses with plastic in one day.
- Cost of construction is approximately $8,600.
- Greenhouse plastic tightness has to do with how much sun and wind there is at the time of installation. More sun and less wind means the plastic will be tighter.
- High tunnel sites must be "crowned" or graded so as to make the middle the highest point for adequate drainage.
- The benefits of an opening system by lowering would be: better wind and cold air protection for the plants, better release of the heat build up at the top of the house.
- We use 6 mil. greenhouse plastic with a 4 year warranty; we have gotten 8 - 9 years. In winter, the greenhouse sides are held down with gravel; might also be possible to use tubing, filled with water.

HOUSE ORIENTATION

- Oriented so narrow end faces prevailing wind; **the lower vent doors are on prevailing west side; upper vent doors on the east side** – this provides natural self ventilation.
- Capturing as much light as possible by facing the brightest exposure is very important in winter growing; the height of houses in valley appears to be of some significance.
- With the next planned house, constructed further up the hill, we expect to get substantially more daylight per day.

SOIL

» Amend and raise your own soil: we have used the native soil (mainly sub soil) with #9 gravel and peat moss added.

» We use spent mushroom blocks from our mushroom-growing operation in our compost; we feel the mycelium in the blocks makes nutrients available to plants.

COVERING

» An essential part of our winter growing operation is covering the plants inside the greenhouses.

» Watch the weather; be attentive about covering.

» We currently use a double floating row cover: 1.25 oz/yd^2 as well as .90 oz/yd^2 cover in tandem; the lightest weight goes on first.

» Could get 3 or 4 years out of a cover, however it picks up dirt over time, which means less light gets through.

» We are working on a new system that keeps cover suspended, and will collect less dirt.

» Floating row cover outside would require heavy weights because of wind.

» For covering, you can get away with using 1 year plastic inside the greenhouses, we sometimes add this as a third inner layer in periods of extreme cold, such as single digits.

» Plastic traps a lot of moisture, so we have in general replaced it with the double fabric cover.

» We cover at 27°F.

ELECTRIC FENCING

- #16 high tensile wire, supported by concrete in corners, approximately 8' high, approximately 12 wires.
- We use 100 mile fence on 10 mile line to provide plenty of shocking power.

WATER

- Ponds on the farm supply water for irrigation inside and outside of the high tunnels.
- Water moves through supply lines from the ponds due to gravity and feeds into the pump house.
- In the pump house, the water is treated with a UV filter to sterilize pathogens and then is pumped into irrigation tanks.
- Water is stored here and pumped out to fields and high tunnels as needed.
- Water lines in high tunnels split into drip tape to water crops.

OTHER BUILDINGS

» MICROGREEN HOUSE

- High humidity room for year-round microgreen production.
- Specifically oriented for ideal daylight.
- In-house ventilation and compost production.

» MUSHROOM INCUBATION ROOM

- Climate controlled subterranean room in a bank barn used for year-round mushroom production using inoculated saw dust blocks.
- Used blocks go to composting.

» PACKING AND RINSING ROOMS

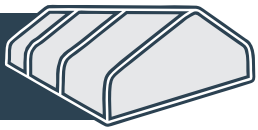
- All use municipal water.
- Commercial salad spinner and rinsing stations.

» STORAGE ROOMS

- Walk-in coolers and winter storage bunker.

UTILITY VEHICLES AND TRANSPORT

» Use 14’ refrigerated box truck and pickup truck with 8’ refrigerated box for deliveries



For winter production, we begin growing in the start house in September with staggered plantings through November. The following describes the crops and varieties we grow and have found to be the most effective in our climate.

SCHEDULE AND SELECTION OF CROPS

ARUGULA (ROQUETTE)

Planting Interval
Direct seed four times in early October and every two weeks until mid-November; then again two times in February.

Placement
Middle two beds only; five rows to a bed.

Irrigation
Three rows of 4" drip tape.

Harvest Method
Mow down with scissors haircut style; cut and come again.

When to Harvest
November – February plus April; one to two cuttings.

Yield
One to two cuttings per bed; yields 75 lbs. per bed.

Pests
None currently.

Diseases
Base Rot.

Weed Pressure
High – weed well.

CARROTS (NAPOLI, PELLETIZED)

Planting Interval
Direct seed one bed every ten days beginning in early September through mid-October; five plantings total.

Placement
All six beds in six rows; thin to 1" – 2", tolerates outer row of house well.

Irrigation
Three rows of 4" drip tape.

Harvest Method
Dig roots twice per week for a two week period.

When to Harvest
January – April.

Yield
300 lbs. per bed with tops.

Pests
Rodents (predominantly deer mice and voles).

Diseases
Base rot and root rot.

Weed Pressure
High – weed well because tops grow slowly.

CILANTRO (SANTO)

Planting Interval
Direct seed two times late February and early March.

Placement
All six beds in a house, five rows per bed.

Irrigation
Three rows of 4" drip tape.

Harvest Method
Mow down with scissors haircut style; cut and come again.

When to Harvest
April - May

Yield
60 lbs. per quarter of the bed.

Pests
None currently.

Diseases
None currently.

Weed Pressure
High

COLLARD GREENS (CHAMPION)

Planting Interval
Seed 98 cell plug trays in early September; transplant in early October.

Placement
Middle four beds in four rows with 1' staggered spacing.

Irrigation
Three rows of 4" drip tape.

Harvest Method
Cut and come again.

When to Harvest
December - March

Yield
400 – 500 lbs. per bed with four cuttings.

Pests
Cabbage Worms

Diseases
Base rot

Weed Pressure
Low – grows above weeds.

DILL (BOUQUET)

Planting Interval
Two times in late February plus early March.

Placement
All six beds with six rows per bed.

Irrigation
Three rows of 4" drip tape.

Harvest Method
Mow down haircut style; cut and come again.

When to Harvest
April - May

Yield
50 lbs. per bed, but only for a partial bed.

Pests
None currently.

Diseases
None currently.

Weed Pressure
High

GREEN ONIONS (EVERHARDY WHITE)

Planting Interval
Seed two times in open trays mid and late September; transplant mid-November and early December.

Placement
Middle four beds with 10 to 12 rows per bed.

Irrigation
Overhead watering due to close spacing.

Harvest Method
Dig out with hand weeder.

When to Harvest
March - April

Yield
Varies

Pests
None currently.

Diseases
None currently.

Weed Pressure
High

KALE (SIBERIAN AND RED RUSSIAN)

Planting Interval
Seed 98 cell plug trays in mid-September; transplant in mid-October.

Placement
Middle four beds in four rows with 1' staggered spacing.

Irrigation
Three rows of 4" drip tape.

Harvest Method
Cut and come again.

When to Harvest
December - March

Yield
400 – 500 lbs. per bed with four cuttings.

Pests
Aphids and Cabbage Worms

Diseases
Base rot

Weed Pressure
Low – grows above weeds.

LETTUCE (CHOOSE DISEASE RESISTANT, COLD HARDY VARIETIES)

Planting Interval
Seed three times in 128 cell trays the second and third week of September and first week of October; transplant one month after seeding.

Placement
Middle two beds in five rows with 6" staggered spacing.

Irrigation
Three rows of 4" drip tape.

Harvest Method
Cut and come again.

When to Harvest
November - April

Yield
200 – 250 lbs. per bed with three to four cuttings.

Pests
Aphids and red legged black mites.

Diseases
Downy mildew and base rot.

Weed Pressure
High - keep well weeded.

MESCLUN GREENS (EARLY MIZUNA, TOKYO BEKANA, AND TATSOI)

Planting Interval
Direct seed four times in early October and every two weeks until mid-November, then two times again in February.

Placement
Middle two beds with five rows per bed.

Irrigation
Three rows of 4" drip tape.

Harvest Method
Cut and come again.

When to Harvest
April - May

Yield
150 – 200 lbs. per bed with two to three cuttings.

Pests
Aphids and red legged black mites.

Diseases
Downy mildew and base rot.

Weed Pressure
High

RADISHES (FRENCH BREAKFAST, EASTER EGG, AND WHITE ICICLE)

Planting Interval
Direct seed two times in late February and early March; thin two to three weeks after planting.

Placement
All six beds; French Breakfast in six rows and other varieties in five rows.

Irrigation
Three rows of 4" drip tape.

Harvest Method
Dig up

When to Harvest
April – keep careful watch as plant will bolt (go to flower) and get pithy quickly.

Yield
Varies

Pests
Slugs and rodents.

Diseases
None currently.

Weed Pressure
Low

SPINACH (CORVAIR)

Planting Interval
Direct seed in early October; thin and transplant thinning s to poorly germinating areas in late October or early November.

Placement
All six beds in four rows with 6" spacing.

Irrigation
Three rows of 4" drip tape.

Harvest Method
Cut and come again.

When to Harvest
December - April

Yield
200 – 300 lbs. per bed with three to four cuttings.

Pests
Aphids and rodents.

Diseases
None currently.

Weed Pressure
High – grows low to the ground.

SWISS CHARD (FORDHOOK)

Planting Interval
Seed 98 cell flats in early September and transplant in early October.

Placement
Middle four beds in four rows, in 1' staggered plantings.

Irrigation
Three rows of 4" drip tape.

Harvest Method
Cut and come again.

When to Harvest
December - April

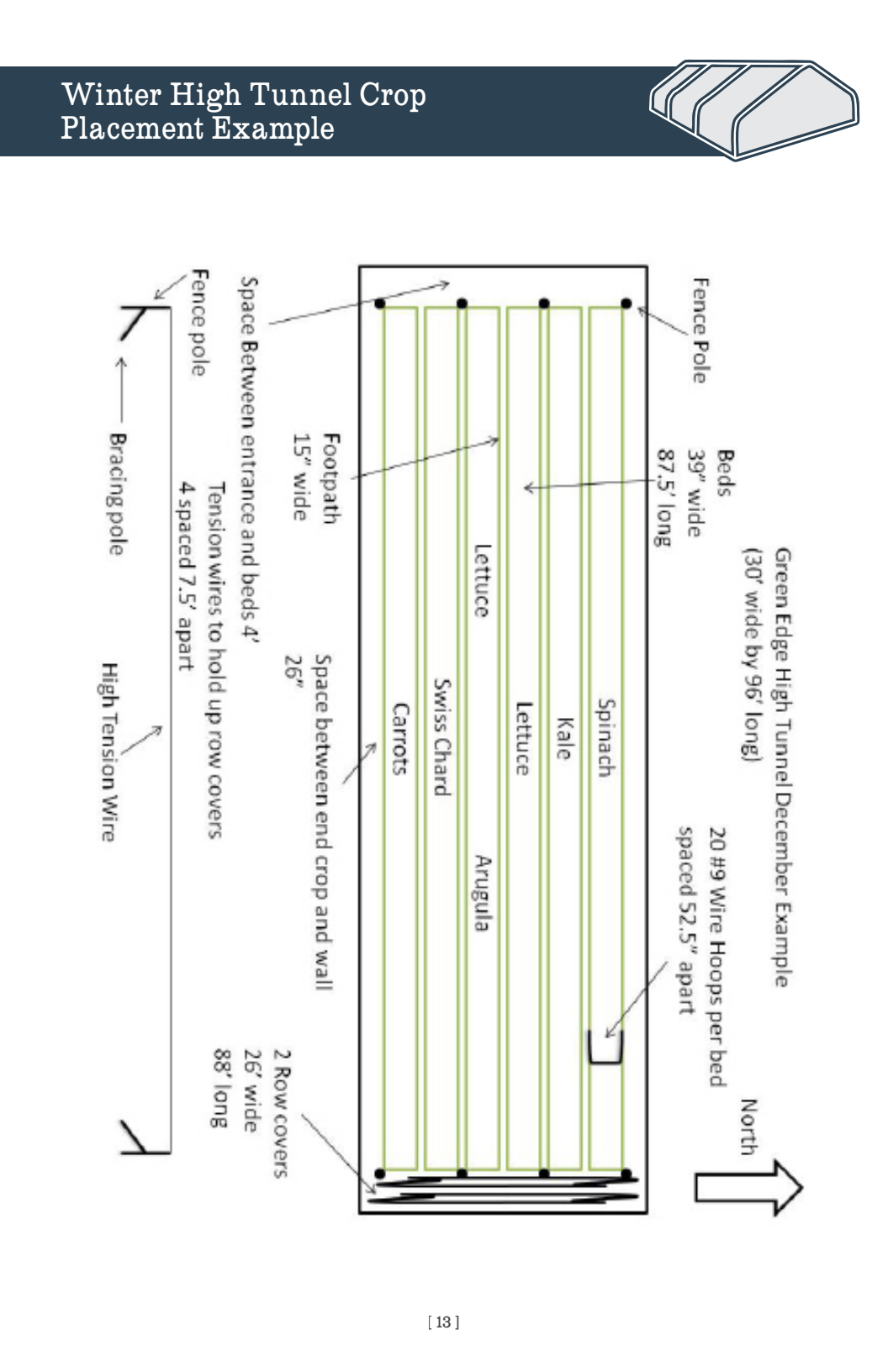
Yield
500 – 700 lbs. per bed with four cuttings.

Pests
Slugs

Diseases
Cercospora leaf spot.

Weed Pressure
Low - grows above weeds.

Winter High Tunnel Crop Placement Example




COLD HARDY PLANTS
Spinach & Carrots
(outer-most beds)
UPRIGHT PLANTS
Kales, Collards, & Chards
(middle four beds)
TENDER GREENS
Lettuces & Arugulas
(center two beds)

COVERING GUIDELINES

» Covering inside high tunnels is an essential part of the winter production cycle. There is no set timetable for covering and uncovering. Like watering, this is a process of observation and appropriate action when conditions begin to change.

» Always watch the weather and be attentive about covering, bearing in mind that your temperatures in the high tunnels may be higher or lower than thermometers at other points on your property or the forecast for your region. Be sure to use an accurate source for weather reports in your area.

» In general, crops should always be covered when temperatures reach 27°F at night.

» We currently use a double floating row cover system to cover crops over the wire hoops in the high tunnels: 1.25 oz./yd^2 weight as well as .90 oz./yd^2 weight Reemay (sometimes called Agribon AG) used in tandem.

» Plastic covers collect dirt over time and allow less light through, so 1 year plastic works for inside high tunnels, but plastic also traps moisture more than cloth, so we are hoping to phase out our plastic covers with the double fabric cover.

» We are also installing fence posts, tension wires and a guiding system in the high tunnels to allow for easy covering and uncovering with the floating double fabric. This is an optional step, but one we have found leads to less crop damage and more efficient use of employee time.

WATER AND IRRIGATION

- We use the ponds on our property to irrigate the crops both in and out of the high tunnels. Water moves from the ponds on the hill across from our fields to the pump house by gravity.

- In the pump house, the water is UV filtered and pumped to the irrigation tank. Water is stored in the irrigation tanks and pumped through hoses and drip irrigation to the fields and high tunnels as needed.

- Most of the high tunnel crops are watered using drip irrigation. Drip tape is laid according to the specific requirements of each crop, with holes for water to drip from spaced every few inches. The holes in the drip line should be adjusted for each crop also.

- When crops are planted or direct seeded into the beds they are watered by hand. After that, all winter crops except green onions are set up for drip line irrigation.

- Generally 30 to 45 minutes of drip will adequately water our houses in the winter. It is essential that water be managed in the winter to prevent foliage from becoming too wet. As winter turns to early spring the need for watering will greatly increase. Like all aspects of high tunnel agriculture, this should be carefully monitored by farm employees.

Managing Crop Threats

Even in high tunnels crops are subject to damage and loss from all manner of threats. Climate, pests, disease, and weeds all play a role in the success of a diversified high tunnel farm. Here are a few that we've identified over our years in operation.

» Climactic Threats:

HEAT
Even in freezing temperatures high tunnels heat up quickly and can cause stress as well as lead to premature bolting and CO_2 build-up; open doors and windows to ventilate aggressively.

COLD
Crops will freeze out and be affected by cold differently based on their characteristics and form. Crops are covered when night time temperature drops to 27 °F.

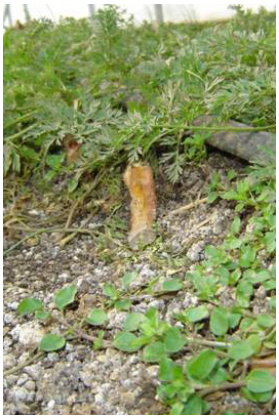
WIND
Houses are situated to put narrow ends toward the prevailing winds. This reduces the threat of structural wind damage.

CLOUD COVER
Cloudy days keep foliage from drying off and increase the threat of disease.

AIRFLOW
Needs to be maintained to reduce disease pressure; vents must be opened when possible.

» Pests, Disease, and Weeds:

As a certified organic farm, we use targeted interventions to reduce reliance on large scale sprays of mild to harsh pesticides. Our farm manager selects farm workers to carefully monitor the high tunnels, report problems, and act accordingly in a timely manner to reduce the severity of the problem, and reduce impacts on the land, crops, and employees. When we do have to use sprays or insecticidal soaps, we use only OMRI approved materials in compliance with our USDA organic certification.



Rodent Damage

A few of the crop pests we encounter include:

RODENTS
Deer mice and voles can do serious damage to root crops throughout the year at Green Edge, especially in colder months. Carrots and radishes are particularly susceptible. Use mouse traps in the tunnels where rodents might frequent.

APHIDS
Large populations of aphids can turn leaves yellow and stunt growth on the leafy greens we raise, primarily the lettuce and mesclun mixes.

MITES
Red-legged black mites are one of the worst threats to our crops at the farm. These mites affect lettuce and mesclun mixes to devastating results. Keep a close eye out and eliminate populations early on.

WORMS
Cabbage worms, hornworms and other larval pests can feed on and damage summer crops. Our winter crops generally don't see damage from worms.

SLUGS
Radishes and Swiss chard can be hit hard by slugs, leaving massive holes in the leaves. Keep an eye out and remove carefully.

MAGGOTS
Onion maggots emerge from eggs laid near plants and feed on the onion bulbs. Plants affected by maggots wither and die. Row cover can help deter the adult flies from returning to locations and laying eggs.

BASE ROT
Plants are more susceptible to rot during the winter when plants experience less vigorous growth. Healthy soil is the best ally against base rot.

DOWNY MILDEW
Downy mildew produces grayish, fuzzy looking spores and mycelium on the leaves of crops such as kale, lettuce, and mesclun greens. Proper spacing and reducing leaf wetness can help prevent and alleviate the spread of downy mildew.

CERCOSPORA LEAF SPOT
Most commonly a problem with Swiss chard and spinach, this disease manifests as small circular brown leaf spots that expand and turn gray, rendering the leaves unmarketable. Excessive leaf wetness at night encourages the disease.

GROUND IVY
Ground ivy is a fast growing creeping plant that can choke out lower crops. Weed thoroughly and often to prevent crop loss. In the winter, always remove weeds from high tunnels after pulling. The cold will not kill weeds once they're pulled and will allow them to re-sprout if they're just thrown in footpaths.

CHICKWEED
This winter annual can crowd out winter crops if left unattended, and also serves as a host for insect pests and disease. Again be sure and remove from house when winter weeding.

Base Rot

Ground Ivy

Chickweed

Harvesting, Handling & Storage

Crops are harvested according to guidelines listed in the previous sections. Once harvested, produce is taken to either the indoor or outdoor rinse station and cleaned of debris.

Produce is then divided, packed, and labeled accordingly. A packing room manager sees that items are packed and labeled correctly. Greens are run through the commercial salad spinner and packaged in single use plastic bags. Other produce is stored and transported according to Ohio Department of Agriculture and FDA regulations.

Our walk in cooler holds produce at the necessary temperatures for applicable regulations. Dry storage in our barn is used to hold packaging materials. A winter storage bunker for produce is also used to hold root crops and other longer-term storage products.

Items kept for long term storage (two weeks or longer) are monitored by a farm worker. Workers make sure proper temperatures and humidity levels are maintained in storage rooms and keep record logs.

Shipments are then packed into the truck for delivery throughout the week, with staggered deliveries to southeast Ohio and the Columbus area.

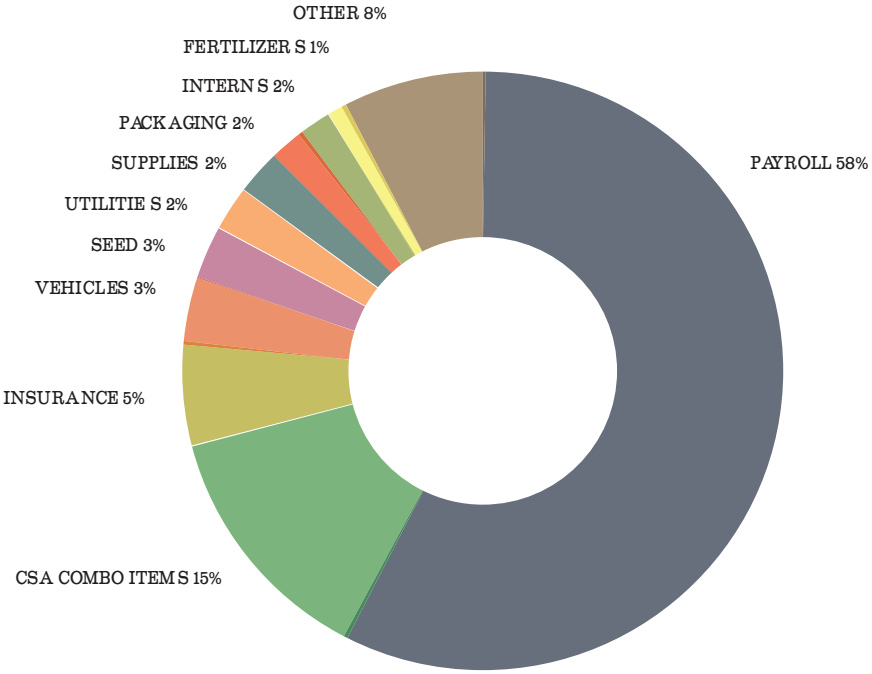
Marketing & Sales

At Green Edge we rely on a variety of markets to guarantee our products sell consistently and at prices that provide livable wages for the medium sized workforce we support.

To achieve this, we grow a variety of crops with proven methods in order to create a lower risk business environment. We use crops that have been proven to provide good yields and are desired by our client base.

Over the years, our highest revenue stream has become our diverse Community Supported Agriculture (CSA) market, which reaches customers all year in Athens, Belpre, and Columbus. In 2012, 60% of the farm's income came from CSA memberships. The chart below shows this change over the years.

EXPENSE SUMMARY JANUARY - DECEMBER 2012



The rest of our crops are sold to wholesale buyers, retail customers at the Athens Farmers Market, and through some brokered sales.

These different markets ensure that we sell all we can grow.

It's also important to understand your market base to determine what to grow, at what point in the year, and how much to grow. Our CSA base allows for flexibility in the products we grow, but it's also product sold in advance that we have guaranteed for our customers. This is a judgment you will have to make as you plan for your business.

Most of our budget goes to our payroll, followed by the additional optional items CSA members can elect to purchase. These optional CSA items are ones that the farm doesn't produce, but sources from other local businesses to include in shares. The chart above shows budget breakdowns as percentages of all expenditures during the 2012 season.

Green Edge follows this process to establish annual sales targets:

- First we analyze last year's costs in reference to the budget;
- Then we review, analyze, and calculate payroll costs including expected raises, benefits, and taxes;
- Next we predict this year's costs including inflation plus known large item purchases;
- After that we review last year's cost increases to evaluate our prices (e.g. - Are increases needed?);
- And finally the annual budget is prepared knowing there are built-in excesses.

After this:

- We review sales and categories from the previous year;
- Then we ask: What can be expanded or shrunk to give us the best advantages?
- Lastly we adjust numbers if needed.

Employee Roles and Management

In addition to the two owners we currently employ 10 people full time and 3 part time year-round, and we host 4 interns each summer. Farm management is divided between a farm and crew manager, infrastructure supervisor, sales and finance director, and CSA coordinator. Farm crew roles are divided among full time crew with clear expectations of responsibilities. Creating self sufficient employees through quality mentoring is key.

Employees Fill the Following Roles at the Farm:

» COMPOST

Monitor compost containers and transport to piles as needed (2 times a week generally). Turn piles weekly or when possible and monitor temperatures. Properly log all activities. Incorporate other farm generated green manures and amendments when available. Train others to assist.

» PEST AND DISEASE MANAGEMENT

Weekly walk through all growing sites to determine threats. Educate yourself on each organic control and understand how and why it works, as well as applicable safety precautions. Take proper action to manage the threats. Properly log all activities. Train others to assist.

» WEED MANAGEMENT

Weekly walk through to determine priority list. Create and communicate list with farm manager to make a plan on when cultivation, hand weeding or mulching can be accomplished. Be able to determine which tool or approach is best. Train others to assist.

» GREENHOUSES

Responsible for seeing that greenhouses are opened and/or uncovered at the proper times. Understand how this process benefits the particular crops given the season, and plan accordingly. Check weather forecasts to determine if any special action is necessary such as high winds or extreme cold. Kip typically oversees closing and/or covering. Communicate to infrastructure manager if repairs are needed. Train others to assist.

» PACKING ROOM MANAGER

Oversees all processing of produce once delivered from the fields or greenhouses. Responsible for making sure produce is packed and labeled correctly for its intended destination. The PRM is also responsible for seeing that certain quality and efficiency standards are met. This role requires great attention to detail and highly effective communication skills. Trains others to assist.

» HARVEST MANAGER

Oversees all the harvesting of field and greenhouse crops. Makes decisions about where and how much to pick and is responsible for filling out the harvest sheet. The harvest manager is able to effectively instruct all participating crew members on proper techniques and tools. And also works to maintain a high level of efficiency by orchestrating seamless transitions. This role requires attention to detail and effective communication skills.

» SOIL PREPARATION AND PLANTING

Oversees all start house, greenhouse, direct seeding and transplanting of vegetable crops. Creates a planting schedule and adheres to it as best as the weather and time will allow. Must be able to look ahead and see that proper steps are taken to prepare planting areas, potentially weeks in advance. Must be very aware of the weather forecast to determine when seeds or plants can take full advantage of weather patterns such as dry or wet spells. Properly logs all planting dates and any other important information in a timely fashion. Must have extensive experience in growing a wide array of vegetable crops, as well as how to properly prepare soil.

» IRRIGATION

Manage the watering needs of crops in the fields and greenhouses. Daily walk through is required to determine where water is needed. Make a plan, taking into account if other crew members are necessary to execute the plan. Must be able to assess proper soil moisture, taking weather into account. Must have a thorough knowledge of how the irrigation system functions including pump, headers and valves and make minor repairs as needed. Training others to assist in monitoring and working the system is key to this role.

» LOGBOOK

Daily documentation of the weather. Also note where and how much labor is expended to accomplish tasks. Record any other key observations.

» FALLOW FIELDS AND COVER CROPPING

Develop plan for fallow areas to replace and increase fertility. Know how to utilize and apply amendments. Knowledge of when to plant and how to incorporate cover crops at the proper times is key to accomplishing this successfully. Being able to run the tractor and effectively apply implements to avoid compaction is important. This also entails responsibility for sowing cover crops on fields in production.

» FERTILITY AND SOILS

Responsible for monitoring crop health after planting. Knowledge of the many amendments and fertilizers available is key to accomplishing this goal. Must be able to effectively and in good time apply the fertilizers to the crops. Utilizes soil tests and other assessment tools to determine the best approach. Must communicate well with Planting Manager to make sure timing makes sense. Properly log all activities.

» INVENTORY AND STORAGE

Regularly inspect crops intended for long-term storage (anything 2 weeks or more). Make sure proper temperature and humidity levels are maintained to ensure high quality and a long shelf life. Also weekly assess our supply needs and communicate with Kip and Becky when items need to be ordered to prevent shortages. Continually evaluate and improve the monitoring system.

» GROUNDS

Every 10-14 days mow and weed whip all fencing, greenhouses, and field borders. This is important to keeping the electric fence running properly as well as preventing weeds from going to seed. Must be able to safely operate tractor, mowers and weed whips. Train others to assist.

» MARKET

Responsible for working farmers market on a regular basis. Capable of setting up and taking down the display. Maintain a good rapport with customers and re-stock in a timely manner. Must educate yourself on the different foods and how to use and prepare them, so as to answer customer questions effectively. Understand and improve marketing tactics that improve sales. Good communication skills are important.

» DELIVERY

Local - Knowledge of the Athens and Belpre routes. Load truck and efficiently deliver produce to wholesale customers and CSA drop sites. Collects any money owed. Gathers old containers and/or boxes and assists with Wednesday farmers market if necessary. *Columbus* - Finish loading truck. Assist Kip in delivering to CSA drop sites as well as to wholesale accounts. Picks up mushroom blocks and other distribution items for resale.

» INFRASTRUCTURE PROJECTS

Assist Kip on new building projects that will expand farm potential and efficiency. Helps improve and repair existing infrastructure. Basic knowledge of tools and being comfortable working independently is important.

» MACHINE MAINTENANCE AND REPAIR

Assist Kip on keeping all machinery and tools functioning properly, with an emphasis on maximizing a tool's potential.

Certification & Food Safety

We follow numerous guidelines for food safety, accountability, and employee readiness on our farm. Green Edge goes through many inspections each season, sends farm employees to trainings, and prepares them for various roles and responsibilities on the farm.

» Annual Inspections for Compliance:

OHIO ECOLOGICAL FOOD AND FARM ASSOCIATION (OEFFA)
USDA organic inspection; detailed review of all inputs, purchases, sales, records; one inspection per year (scheduled) for USDA certified organic status.

OHIO DEPARTMENT OF AGRICULTURE (ODA)
Harvest and handling facilities inspection, once per year (unannounced).

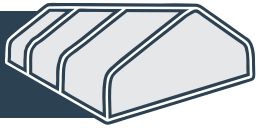
FOOD AND DRUG ADMINISTRATION (FDA)
Packing room; labels; packing room procedures; tracking; required registration with Homeland Security as a food processing facility. Two inspections per year (unannounced).

» Training :

CURRENT
Employees regularly switch responsibilities to provide a better understanding of all the processes at the farm.

PLANNED
Update current employee policy and manual; Good Agricultural Practices (GAP) training for all employees; review for all employees of proper safety including equipment, procedures, lifting, and more.

Recommended Equipment Suppliers



» Organic Seeds

JOHNNY'S SELECTED SEEDS
PO Box 299
Waterville, Maine 04903
1-877-564-6697
www.johnnyseeds.com

HIGH MOWING ORGANIC SEEDS
76 Quarry Road
Wolcott, Vermont 05680
1-802-472-6174
www.highmowingseeds.com

» Fertilizers and Soil Amendments

OHIO EARTH FOOD
5488 Swamp Street NE
Hartville, Ohio 44632
1-330-877-9356
www.ohioearthfood.com

» Greenhouse Supplier

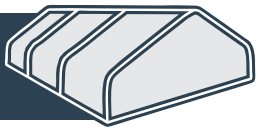
COYOTE HILLS WELDING
728 Muddy Fork Road
Hillsboro, Ohio 45133
1-937-466-2525

» Greenhouse Supplies

NOLT'S PRODUCE SUPPLIES
152 N. Hershey Avenue
Leola, Pennsylvania 17540
1-717-656-9764

WENGER'S PRODUCE SUPPLIES
5566 Lapparell Road
Bainbridge, Ohio 45612

Additional High Tunnel Resources



The following is just a sample of available resources for high tunnel production, which includes construction methods, pest management strategies, marketing techniques, and other information. This list is a compilation of information courtesy of Matt Kleinhenz at the Ohio Agriculture Research and Development Center.

» Publications

THE WINTER HARVEST MANUAL ($20)
Eliot Coleman
Four Season Farm
Harborside, Maine

WALKING TO SPRING ($15)
Paul & Alison Wiediger
Au Naturel Farm
Smiths Grove, Kentucky

THE HOOPHOUSE HANDBOOK ($16)
Growing For Market
Fairplain Publications
Lawrence, Kansas

HORTICULTURE HIGH TUNNEL WORKSHOP: INFORMATION FOR GROWERS FROM GROWERS ($20)
Matt Kleinhenz, Brad Bergefurd, and Ron Becker
Ohio State University Extension and Ohio Agriculture Research & Development Center

For the full list of high tunnel information including web-based media, videos, and contact persons, visit the Ohio Agriculture Research and Development Center online at www.hcs.osu.edu/vpslab/crop-environment-resources.

Matt Kleinhenz can also be reached for high tunnel consultation and further information at:

THE OHIO STATE UNIVERSITY
OARDC
122 Gourley Hall
1680 Madison Avenue
Wooster, OH 44691
1-330-263-3810
kleinhenz.1@osu.edu

» Additional High Tunnel Suppliers

BILL KRUSLING
901 Carpenter Road
Albany, Ohio 45710
1-740-698-0050

A.M. LEONARD
241 Fox Drive
Piqua, Ohio 45356
1-800-543-8955

BFG SUPPLY COMPANY | Two Ohio Locations:

14500 Kinsman Road
Burton, Ohio 44021
1-800-883-0234

1321 Lavelle Drive
Xenia, Ohio 45385
1-800-883-5234

THIS MANUAL WAS CREATED FOR
GREEN EDGE GARDENS IN PARTNERSHIP WITH RURAL ACTION

Green Edge Organic Gardens
16232 Henry Road
Amesville, OH 45711
1-740-448-4021

Rural Action
9030 Hocking Hills Drive
The Plains, OH 45780
1-740-677-4047