My One-High-Tunnel Business Planning Guide

RIMOL
Greenhouse Systems

Harry Edwards
Rimol Greenhouse Systems
Design and Sales: PA, WV, MD, DE, VA
hedwards@rimol.com
office (603) 629-9004
mobile (717) 606-8021

Introduction:

Welcome to your One-High-Tunnel Business Planning Guide!

This guide is designed to help you maximize the benefits that you get from one of the most powerful tools on a farm or homestead - the high tunnel.

A high tunnel makes a farmer reliable. That means predictable harvests of predictably excellent crops. When you own a high tunnel, you are assured that you can sustain your family's food supply. Your customers are assured that you will deliver.

Besides growing food for yourself and your friends, you can earn an income, sometimes sufficient to be full time.

You can teach. You can share. You can barter food for labor or delivery.

You can grow cash crops. PYO berries or flowers? Would you run a community garden in yours? Build a butterfly house for conservation and tours?

You can throw parties in your high tunnel to celebrate your plantings and harvests. (Don't let people walk on your beds;-) When crops are dormant, a portable dance floor could turn one into a gathering space. (Perhaps for rent?) In the winter, it is a great place to do processing or repairs.

How could a high tunnel make you and your business more reliable?

High tunnels for horticulture, or for non-profits can often be grant funded.

Many farm business plans will include high tunnels as necessary infrastructure that is purchased for the start-up. Maybe the next one will be grant funded? In the meantime, business is open and producing reliably.

So, let's talk about starting up a one high tunnel business.

As you may know, starting a vegetable or flower growing business in a high tunnel can be both exciting and challenging, requiring thoughtful planning and clear goals.

This primer/workbook is designed to help you navigate the key questions that arise when launching your farming venture, from identifying your primary goals to planning crops and managing available resources.

By exploring common answers and providing space for your personalized ideas, this guide serves as a practical tool to align your business decisions with your unique aspirations, skills, and market needs.

Use this guide as a structured, hands-on resource to organize your thoughts, brainstorm strategies, and create a solid foundation for a successful and sustainable high tunnel operation.

Whether you are new to farming or refining your current practices, this guide will help you move confidently from planning to action.

Let this guide be your workbook:

This guide is structured to support you in developing a robust high tunnel business plan. You'll progress through a series of thought-provoking topics and activities, divided into 18 sections.

To use this as a workbook, please feel free to mark, highlight and write notes on these pages. Cross out items that are irrelevant to your plan, prioritize the ones that are important, and sketch in the margins and open spaces. Use this guide to explore your own business ideas, and keep them organized here for success.

Own it! Create in it! Plan in it! Draw in it! Color in it! Add pages to it!

After you begin your new One High Tunnel Business, you can continue to utilize and refer to this workbook to inspire and enable you as your business grows.

I wish you great Success and Happiness,

High Tunnel Harry

With heartfelt gratitude to contributors and supporters of:
My One-High-Tunnel Business Planning Guide

Especially to these individuals:

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What Are My Primary Goals for This High Tunnel?

Goal Setting:

Begin by defining your primary goals for your high tunnel. If you've previously completed Dr. Nartea's SMART goals exercise, build upon it with this workbook. If you'd like to explore the SMART planning exercise, SMART templates are included in Appendix A.

For those starting fresh, this first section will guide you in clarifying your own business ideas and getting them down on paper.

As we work through this guide together, I have provided an example of how these questions could be answered for a sample business. In this case, my business proposal is for a **Homesteader / Neighborhood CSA.**

Here is my Goal Statement:

"Within six to 12 months, I will purchase a 22x48 Rimol NorthPoint high tunnel to establish my Homesteader CSA. I will produce at least six CSA family shares (Each share feeds 2 adults and 2 children), containing five to seven high quality produce items (vegetables, fruits, and herbs) each week for 42 weeks per year. This will provide a dependable source of healthy food for my neighbors and family. "

Your plans and priorities could be similar or very different.

Let's get started.

We'll go through some considerations for goals related to high tunnel production, and then at the end of this first section, I'll provide space for your Goal Statement.

1. What Are My Primary Goals for This High Tunnel?

a. Production and Economic Goals

Priority	Item	Description
	Feed Myself	Reliable food production for personal consumption.
	Feed Others	Providing food for family, friends, or community.
	Make Some Extra Money	Growing cash crops for supplemental income.
	Make a Living	Scaling up with multiple high tunnels for full-time income.
	Grow Ingredients	Producing specific crops for use in restaurants or commercial kitchens.
	Market Timing of Crops	Manage high tunnel to adjust cropping season (earlier or later) to outcompete imports.
	Hydroponic or Aquaponic Production	Using controlled environment methods for efficient crop production.

b. Environmental and Sustainability Goals

Priority	Item	Description
	Reduce Dependence on Pesticides and Herbicides	Leveraging the controlled environment to minimize chemical use.
	Reduce Water Consumption	Implementing efficient irrigation systems like drip irrigation.
	Increase Yields	Achieving higher productivity per area compared to outdoor farming.
	Improve Crop Quality	Enhancing crop quality through protection from wind, rain, hail, snow and pests.
	Extend Growing Season	Starting the season earlier and extending it later to maximize crop availability.
	Controlled Microclimate for Specialty Crops	Growing niche crops like ginger, turmeric, tea, tropicals, vanilla, saffron that require specific non-local conditions.

c. Educational and Community Engagement Goals

Priority	Item	Description
	Educate	Teaching gardening skills to others.
	Connect with My Community	Engaging with local communities through gardens, classes, or hosting clubs.
	Hosting Events	Organizing seasonal or special occasion events, exhibitions, or performances.
	Research	Conducting both formal and informal research to improve or innovate farming practices.

d. Health and Shelter Goals

Priority	Item	Description
	Mental Health Sanctuary	Using the tunnel as a personal retreat or a therapeutic space for veterans, individuals with special needs, or other therapeutic purposes.
	Livestock Shelter Over Winter	Providing a sheltered environment for animals during colder months.

Here is a place for you to write your own Goal Statement:

With your primary goals in mind, it's time to identify your potential customers and the market you're entering. Let's identify who will benefit from your high tunnel products.

2. Who Are My Potential Customers?

a. Direct to Consumer Sales

Priority	Item	Description
	Local Consumers	Individuals seeking local, healthy, and specialty products directly from the producer.
	Farmers Market Attendees	Customers who prefer to buy fresh produce directly from farmers at local markets.
	CSA (Community Supported Agriculture) Members	Consumers who subscribe to receive a share of the farm's harvest on a regular schedule, providing steady support and receiving fresh produce in return.
	Online Markets	Customers who prefer the convenience of online ordering. This can include an e-commerce platform managed by the farm or third-party online marketplaces specializing in local and organic products.

b. Wholesale Customers

Priority	Item	Description
	Retail Outlets	Local grocery stores and specialty shops interested in selling local and sustainably grown produce.
	Other Farmers	Sometimes, farmers may purchase produce from fellow growers to diversify their own product offerings at markets or for use in their CSAs.

c. Business to Business Sales

Priority	Item	Description
	Restaurants and Caterers	Businesses that prioritize high-quality, fresh ingredients for their menus, often with a focus on local and seasonal products.
	Institutional Buyers	Schools, hospitals, and offices that may be interested in integrating healthy, local foods into their cafeterias or catering services.

Now that you've defined your target customer base, let's explore who else is offering similar products and how you can differentiate your business from the competition. There is room in each section to list these competitors by name, if you choose.

3. Who Are Competitors for These Customers?

a. Local Competition

Priority	Item	Description
	Other Local Farms	These are your direct competitors within the community or region. They might sell similar types of produce through similar channels such as local farmers' markets, CSAs, or direct sales. Competition here often revolves around quality, variety, and personal customer relationships.

b. National and International Competition

Priority	Item	Description
	Large National or International Producers	These competitors operate on a much larger scale and can affect pricing and availability in your market. They typically supply produce to large retailers and are involved in mass production, often

		with lower prices due to economies of scale but potentially lower quality or freshness compared to locally grown products.

c. Retail Outlets

Priority	Item	Description
	Grocery Stores and Supermarkets	These are significant competitors because they can offer convenience, variety, and competitive pricing. They source from both local farms and large producers, providing year-round availability of produce.
	Specialty Food Stores	These stores often focus on high-end or niche markets, offering organic, gourmet, or locally sourced products. They can be both competitors and partners, depending on your business model and their sourcing practices.

d. Online Competition

Priority	Item	Description
	Online Marketplaces	These platforms can reach a broad audience and offer products from a diverse range of producers, both local and international. Competition here is based on price, product uniqueness, and the ability to cater to specific consumer preferences digitally.

Knowing who your competitors are will help you shape your unique value proposition.

Now we are ready to consider more business planning questions. If you'd like to think about these topics in generalities before moving to this next section, I suggest starting with a one page business planner.

You will find a one-page business planning questionnaire from the Small Business Administration as Appendix B. This simple form one-page will be useful to create an overview of your business vision. Again, I have provided a blank template, and a sample of a completed form.

Next, let's think about the specific crops you'll grow in your high tunnel to set yourself apart.

4. What Will I Grow in My Tunnel?

a. Market Demand

Priority	Item	Description
	Local Market Trends	Check what other local growers are cultivating in their tunnels by referencing resources like the weekly Virginia Farmer's Market Price Report. This will help identify popular and profitable crops.
	High-Demand Crops	Research current food trends on platforms like restaurant.org to identify what crops are in high demand by customers and chefs, such as specialty greens, heirloom varieties, or unique culinary herbs.

b. Personal Preference

Priority	Item	Description
	Favorite Crops to Grow	Consider what you personally enjoy cultivating. This could be anything from specific types of food crops to flowers and exotic plants. Growing what you love can make the farming experience more enjoyable and personally rewarding.

c. Seasonal Focus

Priority	Item	Description
	Cool Season Crops	If your primary interest lies in extending the growing season into the cooler months, focus on crops that thrive in cooler temperatures, such as leafy greens, root vegetables, and certain herbs.
	Warm Season Crops	For those more interested in summer production, choose crops that require warmer weather, like tomatoes, peppers, cucumbers, and melons.

d. Specialty and Niche Crops

Priority	Item	Description
	Herbs and Flowers	Both culinary and medicinal herbs, alongside ornamental flowers, can be lucrative, catering to both market and personal interests.
	Ethnic Vegetables and Fruits	Cater to niche markets by growing ethnic specialties that are hard to find in regular markets, potentially commanding a higher price.
	Mushrooms	Consider fungi cultivation, which can be highly profitable and efficient in terms of space and resource use.

e. Commercial and Conservation Plant Production

Priority	Item	Description
	Nursery Stock and Transplant Production	This includes starting plants that can be sold to other farms, garden centers, or direct to consumers, expanding your market reach.
	Agroforestry Components	Focus on integrating tree, shrub, and other perennial plant cultivation into your annuals production, which can complement crop rotations and improve biodiversity.
	Rare Plant Conservation and Natives	Grow native plants, rare species, or conservation-focused varieties, which can appeal to ecologically conscious consumers, specialty markets and conservation-focussed landscapers.

f. House and Decorative Plants

Priority	Item	Description
	House Plants and Perennials	With the rising popularity of house plants and perennial garden plants, consider dedicating part of your high tunnel to produce varieties that are in demand for indoor and landscape use – perhaps in hanging baskets.

Now that you've chosen your crops, it's important to think about how you'll plant them to maximize space and productivity. Let's move on to your planting strategy.

5. How Will I Plant My Crops?

a. Tunnel Layout Planning

Priority	Item	Description
	Use of Pre-Designed Layouts	Reference the Rimol high tunnel planning layouts provided in the addendums to get an idea of optimal spatial organization.
	Grid Paper Planning	Sketch your high tunnel layout on grid paper, allowing for precise scaling and spatial allocation. This helps in visualizing the arrangement before actual implementation. Plans on grid paper can be easily managed in Excel spreadsheets.
	Square Foot Gardening	Implement this method to maximize space utilization, especially effective for small-scale, intensive production of crops. There is a Rimol layout template for this method.
	Permabeds Setup	Design your high tunnel with permanent beds and walkways, where the areas between beds are used for cover cropping and mulching. This helps in soil replenishment and minimizes soil compaction by eliminating foot traffic on beds.

You'll find several layout templates for a 22'x48' Rimol NorthPoint high tunnel in Appendix C.

b. Maximizing Production Efficiency

Priority	Item	Description
	Tightest Planting Methods	Plan your crop spacing and planting schedule to maximize the number of plants per square foot while ensuring adequate air circulation and sunlight exposure.
	Rolling Benches	If growing on benches, consider installing rolling benches, which can be rolled to optimize space and make maintenance tasks easier, especially suitable for nurseries or propagation areas.

c. Irrigation Systems

Priority	Item	Description
	Drip and overhead Irrigation	Plan irrigation systems, considering options like drip irrigation or emitters, from suppliers such as Rain-flo, or Martins Produce. This ensures that you choose the most efficient and cost-effective system for your needs.
	Rainwater Collection Systems	Plan to install gutters and storage tanks to collect and store rainwater. This not only reduces reliance on external water sources but also promotes sustainable water use.

Sample irrigation layouts for each of the a 22'x48' Rimol NorthPoint high tunnel templates can be found in Appendix D.
And you'll find some sample quotes for irrigation supplies in Appendix E.

d. Sustainable Practices and Innovations

Priority	Item	Description
	Eco-Friendly Materials	When planning the layout and infrastructure, choose materials that are durable, sustainable, and suitable for the specific climatic conditions of your area.

	Technology Integration	Consider the integration of smart agriculture technologies, such as moisture sensors or automated irrigation systems, to enhance water use efficiency and crop monitoring.

With a clear planting strategy in place, effective management of pests, weeds, and diseases will be key to maintaining a healthy crop. Let's outline your approach to crop management.

6. How Will I Manage My Crops? Weed, Pest and Disease Control

a. Management Methodology

Priority	Item	Description
	Organic Practices	Eliminating synthetical chemical use and Implementing no-spray or low-spray, environmentally friendly methods to manage pests and diseases while maintaining soil health.
	Conventional Methods	Using approved chemical treatments when necessary, following recommended guidelines to minimize impact.
	Hybrid Approaches	Combining both organic and conventional practices as needed based on specific crop and pest challenges.

b. Educational and Reference Resources

Priority	Item	Description
	Extension Services	Utilize resources from local university extensions such as VA Tech, West Virginia University (WVU), and West Virginia State University (WVSU) for regional-specific agricultural guidance. Rodale's Organic Growers Extension offers free phone and email support.
	High Tunnel Specific Information	Access specialized information from other university agriculture extensions like Cornell, Michigan State University (MSU), University of Kentucky (UK), and Kansas State University (KSU).

	ATTRA Publications and Webinars	Engage with comprehensive instructional materials and online learning resources focused on managing crops in high tunnels. www.attra.ncat.org
	Books	Reference books such as “The Hoophouse Handbook” by Lynn Byczynski, and “Four Season Harvest” by Elliot Coleman for in-depth understanding and tips. See Appendix F for more suggestions.

Let’s pause here to meet the expert advisors who will help you to succeed as a farmer – your local Cooperative Extension Service Agents and Rodale’s Organic Crop advisors.
You’ll find your agent and contact info in Appendices G and H.

c. Integrated Pest Management (IPM) and Best Practices

Priority	Item	Description
	Regular Monitoring	Conduct frequent inspections of your crops to identify and address issues early.
	Sanitation	Maintain a clean high tunnel environment to prevent the spread of pests and diseases.
	Crop Rotation	Rotate crops to prevent soil-borne diseases and disrupt pest life cycles.
	Use of Barriers	Implement physical barriers such as nets or row covers to protect crops from pests and weeds.
	Proper Ventilation	Ensure adequate air flow to deter fungal growth and maintain plant health.
	Resistant Varieties	Choose plant varieties known for their resistance to specific pests and diseases.
	Trap crops	Incorporate non-crop plants which are attractive to specific pests as early indicators. Monitor and manage frequently.

d. Cultural Controls

Priority	Item	Description
	Co-planting	Grow complementary plants together to enhance overall plant health and yield, such as planting nitrogen-fixing legumes with more nutrient-demanding crops.
	Beneficial Plantings – Banker plants	Incorporate plants that attract pollinators and predator insects which can naturally reduce pest populations.
	Pest Exclusion Techniques	Use netting, fencing, and other physical or visual deterrents to keep pests out.

e. Weed Management

Priority	Item	Description
	Weed Barriers	Use landscape fabric, mulches like wood chips or straw, and other ground covers to suppress weed growth.
	Tillage	Minimally disturb the soil to manage weeds without harming the crop root systems.

Effective crop management goes hand in hand with healthy soil. Let's consider how you can manage your high tunnel's soil health and fertility to sustain your crops and improve yield over time.

7. How Will I Manage My Soil Health & Fertility?

a. Soil Testing & Amendments

Priority	Item	Description
	Soil Testing	Regularly test your soil to monitor nutrient levels, pH, and organic matter content, which will guide your fertilization and amendment strategies.
	pH Management	Adjust soil pH by adding lime to raise pH in acidic soil, or sulfuric or citric acids to lower the pH in alkaline soil, aiming for an optimal pH range of 6.0 to 7.0 for most crops.
	Fertigation Recommendations	Consult specific recommendations, such as those from Fertrell for mixed vegetables, to tailor your nutrient

		management practices according to crop needs.

b. Organic Fertilizers and Soil Conditioners

Priority	Item	Description
	Compost and Compost Teas	Apply compost to add organic matter and nutrients, and use compost teas to provide a liquid feed rich in beneficial microorganisms.
	Vermicompost and Teas	Incorporate vermicompost (compost made by worms), which is particularly rich in nutrients and beneficial microbes, and use its teas as a nutrient-rich foliar or soil drench.
	Mycorrhizae Inoculation	Introduce mycorrhizal fungi (mushrooms) to the soil to enhance plant root systems and improve nutrient and water uptake.

c. Sustainable Water Management

Priority	Item	Description
	Capture Rainwater	Implement systems to collect and store rainwater for irrigation, reducing dependence on external water sources.
	Drip Irrigation	Use captured rainwater in a drip irrigation system to efficiently deliver water directly to plant roots, minimizing evaporation and water runoff.

d. Crop Rotation and Diversity

Priority	Item	Description
	Rotate Crops	Implement a crop rotation plan to prevent soil-borne diseases, manage pests, and avoid nutrient depletion.
	Cover Crops	Plant cover crops between main crops to fix nitrogen, suppress weeds, prevent soil erosion, and improve soil structure.

	Increase Plant Diversity	Cultivate a variety of plants to enhance biodiversity, which can lead to healthier soil and reduced pest pressures.

e. Mulching and Physical Soil Management

Priority	Item	Description
	Mulching	Use organic mulches like leaf litter, aged wood chips, and straw to conserve moisture, regulate soil temperature, suppress weeds, and gradually add organic matter to the soil.
	Minimize Soil Disturbance	Reduce foot traffic and limit the use of heavy machinery on garden beds to prevent soil compaction and preserve soil structure.

Now that you are generating high quality topsoil, let's determine how much crop you'll need to plant to meet your goals, and how you'll manage harvests to keep production running smoothly.

8. How Much Will I Need To Plant, and When?

a. Crop Selection and Yield Calculation Tools

Priority	Item	Description
	Use Johnny's Seeds Online Resources	Access planting guides and calculators on their website to determine seed requirements based on crop type and spacing.
	Explore Other Seed Catalogs and Company Websites	Collect and compare planting information from multiple seed companies to ensure you have comprehensive data for different crop varieties.
	Plan backwards from CSA Weekly Share Goals	Plan 5-7 different crops in each weekly share. (ex. Spring - 6 weeks at $30 per wk., Summer – 20 weeks at $40 per wk., Fall – 6 weeks at $30 per wk., Winter – 12 weeks at $30 per wk.)

For more specific guidance regarding plant spacing and anticipated yields, see Appendices I and J for resources.

Recommended planting and harvesting dates can be found in Appendix K

b. Record Keeping for Data-Driven Planning

Priority	Item	Description
	Maintain Detailed Records	Set up a digital spreadsheet or farming journal to log details of plantings, such as crop types, quantities, spacing, and yields for each cycle.
	Implement Software Tools	Use agricultural modeling software like ProducePro or Tend to simulate crop growth and yields based on your historical data, which helps refine planting quantities.

c. Leveraging Local Insights and Expertise

Priority	Item	Description
	Engage with Local Growers	Join local farming groups or networks to share experiences and obtain practical advice tailored to your region's conditions.
	Access Cooperative Extension Services	Contact your local cooperative extension for expert consultations and localized planting guides, which can provide critical insights for your specific area.

d. Experimental Approaches for Farming

Priority	Item	Description
	Conduct Pilot and Test Plantings	Allocate a section of your high tunnel to trial different crop varieties or planting strategies to evaluate their performance before scaling up.
	Utilize USDA's National Agricultural Library and ATTRA publications	Search for articles and publications that offer updated research and innovative practices on crop planting and management.

e. Continuous Learning and Improvement

Priority	Item	Description
	Formal Educational Programs	Participate in Educational Programs with Extension, FSA, and farmer organizations like VABF and WV Small Farms Assoc.
	Workshops and Webinars and Conferences	Attend agricultural workshops, webinars, and courses to stay informed about new techniques and technologies that can impact your planting decisions.

With your planting quantities set, let's project your harvests and evaluate how much you'll actually gather from your crops.

9. How Much Will I Harvest?

a. Standard Yield Estimation

Priority	Item	Description
	Rutgers University / WVU	For mixed vegetable production in a high tunnel, the average yield is approximately 0.5 pounds per square foot. (Sustaining Farming on the Urban Edge)
	VSU, WVU, WVSU	Virginia Cooperative Extension and West Virginia University Extension Service and West Virginia State University Extension Service offer planting and harvesting guides.
	Seed Catalogs	Research seed company websites like Johnny's Seeds for specific individual variety yield expectations.

For more specific guidance regarding plant spacing and anticipated yields, see Appendices I and J for resources.

b. Personalized Data Collection

Priority	Item	Description
	Detailed record keeping	Start keeping detailed records of your own crop yields, including variables such as crop type, planting density, and seasonal changes. Over time, this data will provide the most accurate yield forecasts for your specific conditions.

c. Technology and Modeling Tools

Priority	Item	Description
	Ag-tech Yield Prediction Software	Research and invest in a farm management software that includes these predictive tools. Companies like AgriWebb, FarmLogs, or Granular offer sophisticated analytics that can tailor yield predictions to your specific high tunnel setup.

Now that you've estimated your yields, let's focus on planning your high tunnel installation and managing your high tunnel for maximum effectiveness.

10. How Do I Manage my High Tunnel?

a. Temperature parameters

Item	Description
Target temps, dangerous temps	Warm crops - tomato, peppers - target 70F. Flowers can become sterile above 100F (no fruit set)
	Cool crops - broccoli, lettuces - target 55F? Crops can freeze overnight, but must be thawed before harvesting. Crops likely to bolt if average temps over 75F

b. Ventilation (managing humidity)

Item	Description
Tunnel orientation -	Typically it is best to orient high tunnels parallel to prevailing winds for best ventilation and wind resistant strength, (ends are strong).
	If possible, orient high tunnel on contour to minimize erosion,
	Option - Orient tunnel ends up and down hill for natural chimney effect when both end doors are open.
Ventilation equipment - Order of operations	
	Turn on HAFs to circulate internal air to dry plants
	Open Peak vents or Ridge vents to vent humid peak air
	Open Roll-up curtains to create chimney effect with ridge vent or gable shutters
	Close Roll-up curtains, peak vents, and shutters on exhaust fan end. Turn off HAFs. Turn on Exhaust fans and open opposite end shutters.

c. Cooling Techniques

Item	Description
Tunnel orientation -	
	In northern hemisphere, ends facing NE to SW to minimize hot western sun exposure
	Ends pointing up and down slope for convection

Tunnel location – in a frost hollow for cool crops?	Intentionally choosing a frost hollow can be a good site for summer lettuces and greens.
Shade cloth - internal or external - color options	Install shade cloth over top of high tunnel to cool the whole tunnel, or inside over individual rows for small microclimates. White or silver shade cloth can reduce heat more than light.
Evaporative cooling	Air pulled through falling water is chilled and humidified.
Misting - over top of tunnel (recapture using gutters) or inside	Where water is plentiful, water misters on the roof can create evaporative cooling.
White ground covers	These minimize the solar gain in the soil and reflect sunlight back up into thick canopied plants.
Green foliage arbors overhead or beside	Plants shade and respire, creating cool breezes into tunnels.
Planting of summer shade along western side	Temporary protection from hot afternoon sun in the summer.
	Thick perimeter shrubbery along southern wall will cool the breeze into the tunnel
	Cool crops planted in the shade of taller crops in tunnel
Excavate below grade	Benefit from stable ground temperatures below the frostline – for heat in winter or cooling in summer.
Climate battery	Utilizing a low-tech heating system comprised of a series of underground tubes to transfer heat into the ground beneath the high tunnel floor where it is “stored” for later use. Learn more here: www.onecommunityglobal.org/climate-battery

d. Heating Techniques

Item	**Description**
Tunnel orientation	in northern hemisphere, ends facing E to W to maximize Southern sun exposure
Hanging heaters - natural gas, LP gas, electric	Typical solution. Low initial cost.
Woodstove	Outdoor wood furnaces burn longer, allowing the grower to sleep through the night. www.woodmaster.com is an option.

Thermal wall or mass	Integrate black water tanks, masonry raised beds or a masonry wall to trap solar radiation for overnight heating.
Double inflated poly	The dead air space creates an insulated barrier.
Climate battery	System that stores excess heat or cold in the ground for later use. Learn more here: www.onecommunityglobal.org/climate-battery
Electric, gas or solar hot water heater or boiler with circulation loop	Run Pex tubing with hot water on or under planted beds to warm them. Cover the beds with row cover to trap this heat.
Black groundcover	Covering the ground with tight-fitting black groundcloth will increase solar gain in the ground for overnight release.

e. Methods of Insulating and Sealing

Item	Description
Good quality insulated doors	Add brushes or seals around edges for a tight seal.
Double inflated poly roof	Reduces heat loss.
Wind panels under RUCs	4'x4' poly or solid panels in each corner, under the roll-up curtain, block cold air infiltration at the corners.
Locking RUCs with inflation	Adding an extrusion that locks the RUC in place when it is closed eliminates ground-level air leaks and allows the double-layer side curtains to be inflated during the winter.
Bury baseboard – PC baseboard	Bury baseboards and rigid insulation 6"-18" to prevent the ground inside the tunnel from freezing. This also provides mouse and mole protection.
Low tunnels inside high tunnels	Caterpillar tunnels add 3-4 degrees F of cold protection when used inside high tunnels. And they do not blow away.
Reemay – spun polyester over crops	Single layer for more solar gain – per Elliot Coleman
	Double layer for best overnight insulation

f. Wind management

Item	Description
Orientation – end walls are strongest	Wind over the top, from side to side causes lift
When to close tunnel	Wind speeds over 25-35 mph
Use www.USAirnet.com or www.Wunderground.com for wind forecast	Provides reliable wind forecasts for high tunnel management planning. Especially useful for planning days to install poly.
Double inflated poly for rigidity	Provides rigid protection to tunnel and eliminates physical wear of poly due to constant battering of single layer poly against hoops in wind.
Planted wind breaks – Willow, Aspen, mixed evergreens	Plan and plant windbreaks to cool and protect the tunnel. These can double as perennial crops or pollinators.
Constructed wind breaks – 50% shade cloth on piles or poles	Instantly available or removable windbreaks. 100% wind break is not good
Windy end bracing – add extra?	Struts in triangular configurations to brace end walls add rigidity at low cost.
Diagonal bracing, W-bracing in trusses	Additional wind bracing that spans the bend of the hoop or strengthens the roof.
Closer hoop spacing	Typical bow spacing is 4' on center. 3' or even 2' bow spacing can provide peace of mind in severe locales.
Concreted ground posts	Increases ground anchoring strength, resisting the lift created by wind over the curved roof.
	Corners and door verticals are most important, then middle
Automate for security	Incorporating an environmental controller with a wind speed sensor automates storm preparation.

g. Snow Management

Item	Description
Turn heat on while snowing	Keeping the roof over 40F will minimize snow accumulation as it falls.

Knock off accumulations evenly, side to side, before the sun returns	If snow is not removed, the Sun will melt off south side of roof first, which will slide off at one time, leaving north side fully loaded. Arches are weak when unevenly loaded.
Build tunnels 12' apart for ventilation and snow removal	Allow room between high tunnels for tractor or snow blower access.
Sliding doors instead of shoveling	Sliding doors do not require shoveling before they can be opened since they slide to the inside of the tunnel.
Prevent ground snow from getting above bend of hoop onto roof	Snow accumulations above the sidewall bend are dangerous to the structure.

h. Control Systems

Item	Description
Manual	Gearboxes, Springs and pull-chains
Thermostats and motorized fans, shutters	Simple and cheap automation.
Programmable controllers	Access and alarms – at controller only, or also remote
	Inputs/sensors – temp, humidity, wind speed, PAR light
	Outputs – automate ridge vents, RUCs, heaters, fans
Benefits	Reducing temperature fluctuations, maintaining ideal temps, data logging, automated management

i. Trellising

Item	Description
Methods	Overhead purlins, wires – for single leader, Double leaders

	Posts and strings – for Florida weave
	Teepees – for beans and cukes
	Cages and Baskets
	Hog panels
	Poly 4” netting (possibly Roll Up)

j. Water

Item	Description
Irrigation methods	Header and drip tape
	Hand watering
	Overhead
Rain collection	At ground level – gutter or trench, does not need to be removed for snow, or hipboard – make removable for snow
	System needs to be improvised. No commercial rain gutter systems exist for high tunnels.
Rain dispersion	French drains
	Grassy perimeter

k. Fertigation

Item	Description
Tank or portable mix station	Dosatrons, pumps
Compost	Can be added at planting, side dressed, or added as a tea.
Additives	Side dressing and foliar applications

l. Bed and Row Layout

Item	Description
Raised or sunken beds	Raised for more oxygenation of soil, reduced ground moisture, easier access. Sunken for more water retention, and cooler soil temps.
Lengthwise or perpendicular	Lengthwise is typical for single crop rows. Perpendicular beds are useful for more varieties of crops with smaller quantities of each. Often better for classroom use.
Square foot layout	Often planted with a different crop in each square foot in a 4'x4' block. Encourages companion planting and quick succession planting.
Non-linear layout	Option when production may not be the highest priority – for instance, a perennial kitchen garden in a tunnel designed for therapy and relaxation.

m. Weed control

Item	Description
Living ground covers	Cover crops in the legume family are ideal for nitrogen fixation

Tillage	Mechanical or manual inversion of soil – plowing or hoeing.
Landscape fabric	Ground covers that are porous to allow water penetration. Often holes are burned into it for the plants.
Mulch, straw, wood chips	Natural fibers in the beds and walkways eventually become fertilizer for the soil. Note, these materials are insulators and can keep the soil cold longer in the Spring.

n. Pest Repellents

Item	Description
Exclusion techniques - deer, groundhogs, rabbits, mice, birds, insects	Fences, closed doors, buried baseboards, metal flashing
Materials - Hog panels, chicken wire, wire screening, Insect or bird netting	Materials can be used to exclude pests or contain and protect domestic animals
Scare 'em – Owl statues, coyote silhouettes, happy arms inflatables	Move the decoys frequently to prevent acclimation.
Noise – hawk calls, cannons	Effective but sometimes startling.
Startle – Shiny tinsel, aluminum plates, flashing lights, motion sensor lights	Pests do not like unexpected movement.
Domestic animals – dogs and cats	Effective at reducing pest pressure.

o. Beneficial Insects

Item	Description
Predator insects	Interplanted banker plants provide constant food source if preferred pest is not available as food for predators.
Pollinators	Provide valuable pollination services to crops.

p. Pollination

Item	Description
Pollinator attraction – plantings inside or near tunnel	Ex. Yarrow, Dill (most herbs in flower), Alusium interplanted or planted along sidewalls outside attract pollinators to crop.
Boxes of bees	Available commercially. Bumble and mason bees are preferred in high tunnels. Honey bees can become disoriented under high tunnel poly and become trapped.
Hand pollination – leaf blower, shaking trellis strings	Very early in the season, before insects emerge, hand pollination may be necessary.

q. Electricity

Item	Description
Typical power needs	Typical electrical consumption (fan, shutters, heater) is under 30 amps of 120v AC. DC-based systems are available.
Solar power options	Can power DC motors for side RUCs or ridge vents, and shutter motors. Not typically sufficient for exhaust fans or heater blowers.
Portable battery system	An excellent supplement to a solar system to bank power for cloudy days and nights.
Running RUC motors with a portable drill	When power is out, the leads from RUC motors can be attached to a portable tool battery to operate “manually”. Switch the leads to switch the motor’s direction.

r. Door Options

Item	Description
SH, DH, SS, DS, Roll-up	Single hung, Double hung, Single Sliding, Double Sliding, Roll-up
Home-made	Can be constructed of wood, steel or Polycarbonate. Used storm doors are sometimes available at a Habitat Re-Uzit or similar. store
Poly doors – curtain or roll-up	DIY or kits, usually include a winding mechanism to roll the door up.

s. Important High Tunnel Manufacturing Specs

Item	Description
Through-bolt connection of hoops and ground posts	Secure joint that does not weaken the hoop at this location.
Cross-connectors to fasten purlins to hoops	Secure mechanical fastening method that is many times stronger and longer lasting than pipe straps and tek screws.
Aluminum DWL hipboards, not wood	Always use a metal hipboard. Wooden hip boards will weaken and rot, allowing the fasteners holding the roof poly to pull out during a wind storm. This can cause a complete tunnel failure.
NRCS specs for steel gages and diameters	1.66” Dia, 14 ga steel hoops for up to 26’ wide, 1.9” Dia ,13 ga steel hoops for 27-34’ wide.
Choose the heaviest galvanizing available	Typical galvanizing is g60, also known as “GatorShield”, Rimol uses g90 steel which has a 50% thicker galvanizing coating.
End wall steel framing	This long-lasting option increases the tunnel’s structural strength. Over it’s 30 year expected lifetime, it is as economical as 2x4 lumber endwall framing which is typically replaced every 8-12 years.
End wall PC or woven poly	PC adds rigidity and carries a 15 year guarantee. Woven poly is a more economical option, typically lasting 8-10 years. If PC end walls are chosen, use steel end wall framing with it as the PC will outlast wooden end wall framing.

Now that you're confident designing and managing your own high tunnel, let's consider ways to increase your profitability.
Taking your crops from commodities to specialty products is one of the best ways to differentiate your business and increase profits.

11. How Do I Add Value to My Crop? *Get It Closer to a Fork.*

a. Processing for Enhanced Products

Priority	Item	Description
	Culinary Creations	Convert raw products into ready-to-eat or easy-to-prepare items such as soups, sauces, pesto, salsa, smoothies, fresh juices, and baked goods like pies, bread, and pizzas. These options could require permits and/or access to a commercial kitchen.
	Fermentation	Produce pickles, sauerkraut, yogurt, and other fermented foods which can add health benefits and extend shelf life.
	Snack Manufacturing	Create gourmet popcorn, handcrafted chocolates, granola, nut mixes, and other snack items that provide quick and healthy eating options.

b. Specialty Beverage Production

Priority	Item	Description
	Brewing and Infusions	Craft herbal teas, cider, shrubs, and bitters using your farm's produce, appealing to niche markets and beverage enthusiasts.

c. Decorative and Artisan Products

Priority	Item	Description
	Floral Arrangements	Construct bouquets, flower crowns, garlands, and holiday decorations.
	Dried Decoratives	Create dried bouquets and wreaths that offer long-lasting decor options for customers.

d. Prepared Foods and Local Delicacies

Priority	Item	Description
	Local and Ethnic Foods	Prepare and sell local favorites or ethnic street foods, which can resonate well with local communities or offer a taste of diversity in your area.
	Deli and Catering Services	Open a deli or offer catering and carry-out services that use ingredients grown on your farm.

e. Health and Wellness Products

Priority	Item	Description
	Medicinal and Herbal Products	Produce and market health products like medicinal herbs, salves, and other wellness items made from plants grown on your farm.

f. Agritourism and Educational Activities

Priority	Item	Description
	Farm Experiences	Host farm tours, dinners, educational sessions, and other events that engage consumers and provide them with a firsthand look at farming operations.

	Wedding and Event Venue	Utilize your farm's scenic landscapes as a venue for weddings and special events. Orchards and flower plantings create prime photo opportunities.

g. Pet and Animal Products

Priority	Item	Description
	Pet Treats and Accessories	Produce animal food, treats, and items like pet beds from materials grown or produced on your farm.

h. Direct Marketing and Sales

Priority	Item	Description
	Pick-Your-Own (PYO) Options	Offer PYO vegetables, fruits, or flowers, which provide customers with a fun and engaging way to directly purchase fresh produce.
	Seed Sales	Save and sell specialized, heirloom, or locally suited seeds to gardeners and other growers.

i. Mobile Food Service

Priority	Item	Description
	Food Truck	Operate a food truck offering gourmet sandwiches, salads, wraps, or ethnic cuisines made directly from your farm's produce.

Every process generates waste. You'll be most self sufficient and profitable if you design your business to be a guild of multiple products that produce the inputs needed and recycle waste from one business into inputs for another.

Zach Loeks, of "The Permaculture Market Garden", has some excellent advice for designing business guilds.

Here are some ideas to consider.

12. What Would Be a Good Use of My Waste Stream?

a. Animal Husbandry

Priority	Item	Description
	Feed Livestock	Raise animals that can consume excess crops and processing by-products. Animals such as chickens, pigs, or goats can help reduce waste and provide additional products like meat, eggs, and wool.
	Render Products	Convert animal by-products into useful items such as bone broth, lard, tallow, or even leather.

b. Composting and Soil Enhancement

Priority	Item	Description
	Compost Organic Waste	Turn spent potting soil, crop residues, and other organic waste into compost that can be used to enrich the soil.
	Vermiculture	Utilize worms to break down waste faster and produce both nutrient-rich worm castings and worm tea, which can be used as a liquid fertilizer or sold.

c. Aquaponics and Hydroponics

Priority	Item	Description
	Aquaponics System	Use fish to consume certain types of plant waste. The fish waste can then be used as a nutrient-rich water source for growing plants hydroponically, creating a symbiotic environment.

d. Crafts and Non-Food Products

Priority	Item	Description
	Wreath Making	Use materials such as grapevines or other sturdy plant materials to make wreaths and other decorative items.
	Dried Products	Dehydrate surplus or leftover blooms to create potpourri, or package dried herbs for culinary or medicinal use.
	Natural Dyes	Utilize crop waste that has dyeing properties to create natural dyes for fabrics or crafts.

e. Energy Production

Priority	Item	Description
	Biofuel or Biogas	Convert suitable farm waste into biofuel or biogas, which can be used to generate energy for farm operations or sold. Learn more here:https://www.motherearthnews.com/sustainable-living/renewable-energy/biogas-generator-zm0z14aszrob/

f. Market and Community Engagement

Priority	Item	Description
	CSA Shares	Include excess production in community-supported agriculture (CSA) shares, which can help move surplus while maintaining community engagement and support.
	Educational Workshops	Host workshops teaching others how to utilize agricultural waste, such as making compost, vermiculture, or crafts, promoting community involvement and additional revenue streams.

Now that you have a plan for waste management, let's outline the daily and weekly tasks required to keep your farm running smoothly and efficiently

13. What are the Daily and Weekly Tasks?

a. Daily Tasks - These are tasks that need attention every day to maintain the health and productivity of your crops and ensure smooth operation.

Priority	Item	Description
	Watering	Check and manage irrigation systems to ensure plants receive the necessary water. This can be automated.
	Weeding	Regular removal of weeds to prevent competition for nutrients and water.
	Monitoring for Pests and Diseases	Daily inspection of plants to catch any early signs of disease or pest infestation. Sticky cards indicate problems early.
	Pruning	Regular pruning to promote healthy growth and productivity.

b. Weekly Tasks - These tasks can be scheduled on a weekly basis, focusing on the overall maintenance and progression of crop cycles.

Priority	Item	Description
	Preparing and Renovating Ground	Tilling, adding soil amendments, or preparing new beds as needed for new plantings or after harvests.
	Planting	Sowing seeds or transplanting seedlings according to your crop rotation and planting schedule.
	Harvesting	Collecting mature produce, typically on a schedule that aligns with market demand and ripeness.
	Wash and Pack	Cleaning harvested produce and packaging it for sale or storage.
	Order Processing and Fulfillment	Managing incoming and outgoing orders, including packing and preparing for delivery or pickup.

c. Bi-Weekly or Monthly Tasks - Less frequent but crucial for operational success and market readiness.

Priority	Item	Description
	Transportation	Arranging and delivering produce to markets, customers, or processing locations.
	Retailing	Managing on-site sales, whether at a farmer market, through CSA distributions, or at roadside stands.
	Sales and Marketing	Activities such as updating websites, posting to social media, creating marketing materials, and reaching out to potential new markets.
	Value-Added Processing	Scheduling sessions to process part of the produce into value-added products like jams, pickles, or dried goods.

d. Seasonal Tasks - These are broader tasks that are crucial at certain times of the year.

Priority	Item	Description
	Ground Renovation and Crop Rotation Planning	At the end of each growing season, assess and renovate the soil, and plan crop rotations for the upcoming season.
	Equipment Maintenance	Perform maintenance on irrigation systems, tools, and other equipment to ensure everything is in good working order for peak times.

With your tasks organized, it's time to consider the financial side. Let's look at the costs required to get your high tunnel business growing. You can find a quote for a Rimol 22'x48' NorthPoint high tunnel in Appendix L.

14. What Is My Initial Investment Cost?

a. Infrastructure and Site Preparation

Priority	Item	Description
	High Tunnel Structure	Include the costs for the high tunnel frame, cover, and any accessories, unless grant funded. A quote for a Rimol 22x48 Northpoint high tunnel is included in **Appendix L.**
	High Tunnel Installation	Include the costs for any required installation services. The Rimol Northpoint quoted in **Appendix L** typically takes an experienced crew of 3 people, 3-4 days to install. Most farmers do the installation themselves.
	Site Preparation	Costs involved in preparing the land for the high tunnel, such as leveling, clearing vegetation, or improving drainage. Be sure to preserve topsoil and replace it when regraded.

b. Irrigation System

Priority	Item	Description
	Irrigation Setup	Estimate the cost based on the quote from Rain-Flo or Martins Produce - include all components such as pipes, emitters, filters. An automated control system could be added. A sample quote for materials can be found in **Appendix E**.

c. Soil and Plant Inputs

Priority	Item	Description
	Soil Testing and Leaf Testing	A very important step. Many land grant universities provide this service to commercial producers for free.
	Soil Amendments	Budget for the purchase of compost, minerals, and other amendments needed to enrich the soil for optimal plant growth.
	Seeds	Cost of seeds or starter plants for the initial planting within the high tunnel.

d. Tools and Equipment

Priority	Item	Description
	Gardening Tools	Costs for purchasing basic gardening tools, a wheelbarrow, hoses, hoes and other equipment essential for daily operations inside the high tunnel.

e. Legal and Compliance Costs

Priority	Item	Description
	Permits and Licenses	Include expenses for obtaining building permits, water usage permits, and a business license to ensure compliance with local regulations.
	Insurance	Budget for basic liability and property insurance to protect yourself and your investment against risks.

f. Financial Assistance

Priority	Item	Description
	Grant and Cost-Share Funding	Investigate opportunities for grants that support high tunnel projects, such as those available through agricultural programs like EQIP, SARE and the NRCS, which can significantly reduce your out-of-pocket expenses.

See Appendix M for sample financials.

Now that you have a clear picture of your initial investment, let's calculate the ongoing expenses that will keep your business operational on a day-to-day basis.

15. What Are The Ongoing Expenses?

a. Operational Costs

Priority	Item	Description
	Labor	Costs associated with hiring employees or compensating yourself for labor. This includes salaries, wages, and possibly benefits.
	Water and Utilities	Regular expenses for water usage, electricity (if applicable for lighting, heating, or automated systems), and other utilities.
	Fertilizer and Soil Amendments	Recurring costs for purchasing fertilizers, compost, minerals, and other soil amendments to maintain soil health.
	Seeds and Plants	Annual or seasonal expenses for buying seeds and plant starters to sustain crop production cycles.
	Pest and Disease Control	Costs involved in managing pests and diseases, including organic or conventional pesticides and disease treatments.

b. Tools and Equipment

Priority	Item	Description
	Tools and Machines	Expenses for purchasing, repairing, and occasionally replacing tools and machinery used in high tunnel operations.
	Repairs and Maintenance	Regular maintenance costs for the high tunnel structure, irrigation system, and other equipment to ensure optimal functioning.

c. Marketing and Sales

Priority	Item	Description
	Packaging	Costs for containers, labels, and other packaging materials needed to prepare products for sale.
	Marketing Materials	Expenses for creating and distributing marketing materials such as brochures, flyers, and digital content.
	Transportation	Costs related to delivering products to markets, customers, or distribution centers.
	Market and Retailing Expenses	Fees associated with participating in farmers' markets, retail spaces, or other sales venues.

d. Insurance and Compliance

Priority	Item	Description
	Insurance	Annual premiums for liability and property insurance to protect against potential risks and damages.
	Taxes	Local, state, and federal taxes applicable to your business operations.

	Permits and Licenses	Ongoing costs for renewing business licenses, water usage permits, or any other required regulatory documents.

e. Professional Development and Miscellaneous

Priority	Item	Description
	Educational Materials and Training	Investments in courses, workshops, and materials to improve farming skills and stay updated on agricultural practices.

With your ongoing expenses in mind, let's discuss how to price your products to ensure profitability and meet your sales goals. Here are some important tips, resources and considerations.

16. How Will I Price My Harvest for Sales?

a. Comprehensive Market Research

Local and Regional Market Prices	
VA Dept of AG "Retail Farmers Markets" Monthly Price List	Regularly review this resource to stay updated on local price trends. https://www.vdacs.virginia.gov/pdf/fm.pdf
USDA Agricultural Marketing Service (AMS) Reports	Utilize these reports for broader market trends and national pricing data. https://www.ams.usda.gov/market-news/fruit-and-vegetable-terminal-markets-standard-reports
NOFA-NY's Organic Price Index	https://nofany.org/resources/organic-price-index/
The Common Market Mid-Atlantic	Check this for insights on regional pricing and demand specifics. https://www.thecommonmarket.org/about/the-common-market
Mid-Atlantic Regional Cooperative (MARC)	Use this cooperative's data for understanding the demand and pricing in the food bank sector. https://www.thecommonmarket.org/locations/the-common-market-mid-atlantic

b. Competitor Analysis and Customer Feedback

Competitor Pricing	Survey prices set by nearby farms and online marketplaces.
Customer Interviews	Gather feedback directly from consumers to understand their pricing expectations and product value perception.

c. Cost Analysis

Direct and Overhead Costs	
Calculate Production Costs	Determine all costs associated with growing, harvesting, and packaging your products, including inputs like seeds, soil amendments, and labor.
Incorporate Overhead Costs	Factor in costs such as high tunnel maintenance, irrigation, tools, and utilities.
Profit Margin	Add a margin that ensures profitability while remaining competitive.

d. Pricing Strategies

Value-Based Pricing	
Product Quality and Uniqueness	Set prices that reflect the superior quality or unique aspects of your products compared to standard market offerings.
Psychological Pricing	
Attractive Price Points	Use prices like $2.95 per lb to appeal to consumer perception of value.
Dynamic Pricing Techniques	
Seasonal Pricing	Adjust prices based on the seasonality of produce and market demand fluctuations.
Demand-Based Pricing	Increase prices for high-demand products when supply is limited.
Product Bundling	
Bundle Products	Create product bundles, such as salad kits, that offer better value or convenience to consumers, often encouraging larger purchases.

Now that you have your pricing strategy, it's time to get your products in front of customers. Let's dive into your marketing strategy and plan for reaching your target market.

17. How Will I Market My Products?

a. Digital Marketing

Priority	Item	Description
	Websites	Develop a professional website that showcases your products, provides information about your farm, and includes e-commerce functionality for online orders. These can be relatively easy to create in an open source program like WordPress.
	Social Media	Utilize platforms like Facebook, Instagram, and Twitter (X) to engage with customers, share updates, and promote products. Regular posts about farm activities, harvests, and special offers can drive engagement and sales.

b. Direct Sales Channels

Priority	Item	Description
	Farmers Markets	Participate in local farmers markets to sell your products directly to consumers. This not only helps in building customer relationships but also allows immediate feedback and market testing for new products.
	CSA Programs	Establish or join a Community Supported Agriculture (CSA) program where consumers pay upfront for a share of the anticipated harvest. This provides early-season capital and ensures a steady market for your products.

c. Local Business Collaborations

Priority	Item	Description
	Partnerships with Local Businesses	Forge relationships with local restaurants, caterers, and other businesses that could benefit from fresh, locally-sourced ingredients. Offer to supply them with specific products tailored to their needs.
	Retail Collaborations	Explore opportunities to place your products in local grocery stores or specialty shops under consignment or wholesale agreements.

Now that you've figured out how to market your products, it's time to set specific sales goals and estimate the revenue you can expect from your efforts.

18. What Are My Sales Goals and Expected Revenue?

a. Tangible Sales Goals

Priority	Item	Description
	Customer Retention	Target a 90% retention rate among CSA members. The #1 reason people leave CSA's is "too much food".
	Premium Product and Pricing	Pursue constant improvement of product quality to provide perception of superior value.
	Reduced Waste	Reducing inputs and waste adds to profitability as effectively as increasing sales.
	Value-Added Products	Launch new products with the goal of them contributing an additional 10% or more to the total annual revenue.

b. Revenue Forecast

Priority	Item	Description
	Six family CSA example	With four crops per year, averaging ½ lb psf, selling at $3 per pound, average gross income from the 1050 sq ft high tunnel projected to be $6,300 annually

c. Intangible Sales Goals

Priority	Item	Description
	Brand Reputation	Build a reputation for quality and reliability, enhancing customer satisfaction and market presence.

	Market Position	Strengthen the farm's position as a leader in sustainable and high-quality produce in the local market.
	Farming Lifestyle	Fresh food. Harmonious work. Secure food supply.

With your sales goals in place, let's shift focus to long-term growth. Where do you see your business in the future, and how will you ensure its continued success?

19. What Are My Long-Term Goals for This Business?

a. Business Growth and Scaling

Priority	Item	Description
	Scale Up Operations	Plan to expand the number of high tunnels, increase crop varieties, or enhance production capacity to grow the business.
	Vertical Integration	Aim to control more aspects of the supply chain, from production to processing and direct sales, enhancing profitability and market control.

b. Financial Strategies

Priority	Item	Description
	Build to Sell	Develop the business with an exit strategy in mind, aiming to sell it as a profitable enterprise.
	Maintain as Side Income	Structure the business to require minimal daily involvement, allowing it to serve as a consistent source of supplementary income.
	Build experience for promotion	Gain valuable entrepreneurial experience farming for career as a farm manager or designer.

c. Sustainability and Self-Sufficiency

Priority	Item	Description
	Food Security Focus	Prioritize self-sufficiency in food production over profit maximization, ensuring food security for yourself and potentially the local community.

d. Community and Social Engagement

Priority	Item	Description
	Community Engagement	Actively involve the business in community activities, from educational programs to local food initiatives, strengthening community ties and supporting local food security.
	Plan for Succession	Prepare for the future by training successors or establishing a transition plan that keeps the business within the family or local community.

e. Quality of Life

Priority	Item	Description
	Lifestyle Goals	Ensure that the business enhances your personal quality of life, providing satisfaction, enjoyment, and a balanced lifestyle without overwhelming demands.
	“Free” food	The gardener is likely to eat “for Free” from all of the seconds and excess harvest while selling the majority of the #1 quality crops.

Congratulations! You’ve now outlined the key elements of your high tunnel business.

After you’ve set your long-term goals, it’s a good idea to review everything you've put together and ensure your plan aligns with the long-term goals you've set.

Appendices

Appendix A: S.M.A.R.T. Goals

Dr. Theresa J. Nartea,

Virginia State University (VSU-SFOP)

Associate Professor-Extension Specialist

(Marketing & Agribusiness)

Email: tnartea@vsu.edu Phone: 804-524-5491

Use this worksheet to develop your effective ***Specific, Measurable, Attainable, Relevant and Time-Based*** goals. Make it your goal to be S.M.A.R.T. in all you do!

Example with steps to writing an effective S.M.A.R.T. Goal

STEP 1: Start with a general goal: "I want to start a food business"

STEP 2: Now fill in the S.M.A.R.T. goal items

STEP 3: Combine all the S.M.A.R.T. goal items into one effective statement

Virginia Cooperative Extension
Virginia Tech • Virginia State University

Example: Using the S.M.A.R.T. Goal template:

Let's "Farmer" It Out! VSU-SFOP-LRVBFRP Learning Series:
Planning your Homesteader CSA High Tunnel for Neighborhood Food Security
Nartea, T., Gibson, J., (VSU-SFOP), Edwards, H. (Rimol Greenhouses), 2024

Grower Question: Where do I begin? – Completed sample

Step 1. Let's start with a Specific, Measurable, Attainable, Relevant, and Time-Based (SMART) Goal.

S	**What SPECIFIC goal do I want to achieve?**	**I want a weekly harvest of a variety of vegetables, fruits, and herbs to feed my family and as many families as I can through a weekly CSA share.**
M	**How will I MEASURE progress towards my specific goal?**	**I will produce a minimum of six CSA family shares (feeds 2 adults and 2 children) containing five to seven high quality produce items each week for 42 weeks per year.**
A	**Is my specific, measurable goal ATTAINABLE? Do I have what I need to make it possible?**	**I will apply for a USDA NRCS grant to obtain a high tunnel to establish my Homesteader CSA High Tunnel Program.**
R	**Is my specific, measurable, attainable goal RELEVANT to me? Why do I want to do this goal?**	**I want to provide healthy food access for my family and neighbors and to build a sense of community where we take care of each other through local food.**
T	**By what TIME will I complete my specific, measurable, attainable, and relevant goal?**	**Within six to 12 months.**

Grower Responses: My Plan.

S	**What SPECIFIC goal do I want to achieve?**
M	**How will I MEASURE progress towards my specific goal?**
A	**Is my specific, measurable goal ATTAINABLE? Do I have what I need to make it possible?**
R	**Is my specific, measurable, attainable goal RELEVANT to me? Why do I want to do this goal?**
T	**By what TIME will I complete my specific, measurable, attainable, and relevant goal?**

Combine all your S.M.A.R.T. Goal items into one statement.

Example:

I will establish a Homesteader / Neighborhood CSA High Tunnel Program to provide healthy food security for my neighbors and family. Within one month, I will evaluate funding opportunities to purchase a high tunnel - the USDA NRCS cost share program, CSA share sales, bank and Farm Credit loans, and low-rate credit cards are options. I will install my high tunnel and begin growing in the next 6-12 months. In my high tunnel, I will produce 4-6 CSA family shares for 42 weeks per year. Each share will feed 2 adults and 2 children, and contain five to seven high-quality produce items (vegetables, fruits, herbs, edible flowers).

Combine all your S.M.A.R.T. Goal items into one statement. Your turn…

_____

_____

_____

_____

_____

_____

_____

Appendix B: SBA One-page business plan template – Completed Sample

1	**What is your vision for the business?**
	We are feeding ourselves and our neighbors with healthy, nutritious food.
2	**What problem will your business solve?**
	Food insecurity. Providing health promoting unprocessed foods. On-farm income.
3	**Do you have experience in this business?**
	I am an experienced gardener.
4	**What product or service will you offer or sell?**
	A weekly seasonal CSA share.
5	**Who will buy it; that is, who are your target customers?**
	My neighborhood community.
6	**How will you get paid?**
	Labor exchange, cash, donations.
7	**How will you deliver your product/service to customers?**
	Pick up or local delivery.
8	**Who is your competition?**
	Grocery stores, local CSAs, big box stores.
9	**Do you have a particular advantage?**
	My proximity to neighbors and being no or low spray production.
10	**What does the market for your product look like?**
	I have a great opportunity to feed my neighbors with healthy food.
11	**How will your customer learn about your business?**
	Word of mouth, flyers, invitations to plant and harvest events, news, social media.
12	**Do you have enough money? How much will you invest?**
	Start-up requirement is $1.620.00. I will need $1,050.00 monthly plus my own labor.
13	**What are your biggest challenges?**
	Money, time, knowledge.
14	**What is your solution to the challenges?**
	Sell some shares, trade labor for crops. Learning from VSU, USDA FSA, Rodale, Rimol, and my neighborhood community.
15	**I am successful if I have achieved the following goal:**
	Feeding my family and neighbors healthy unprocessed foods that will provide a minimum of 30% of their grocery needs during the 42 week growing season.
16	**What are your financial objectives? What income do you expect?**
	I expect enough income to cover our program expenses.
17	What are your milestones and timelines for starting your business?
	Within the next six to 12 months.
18	**Describe in 25 words or less, the nature of your business:**
	The nature of my business is to create a secure food production system, supplying 30% of our weekly grocery needs in ways that build and nourish our bodies, communities, and our environments.

SBA One-page business plan template – Template

1	**What is your vision for the business?**
2	**What problem will your business solve?**
3	**Do you have experience in this business?**
4	**What product or service will you offer or sell?**
5	**Who will buy it; that is, who are your target customers?**
6	**How will you get paid?**
7	**How will you deliver your product/service to customers?**
8	**Who is your competition?**
9	**Do you have a particular advantage?**
10	**What does the market for your product look like?**
11	**How will your customer learn about your business?**
12	**Do you have enough money? How much will you invest?**
13	**What are your biggest challenges?**
14	**What is your solution to the challenges?**
15	**I am successful if I have achieved the following goal:**
16	**What are your financial objectives? What income do you expect?**
17	What are your milestones and timelines for starting your business?
18	**Describe in 25 words or less, the nature of your business:**

This template was modified from: US Small Business Administration. 2019. Write your business plan. Retrieved from https://www.sba.gov/business-guide/plan-your-business/write-your-business-plan

Appendix C: 22’x48’ NorthPoint high tunnel layout templates

To use these layout templates:

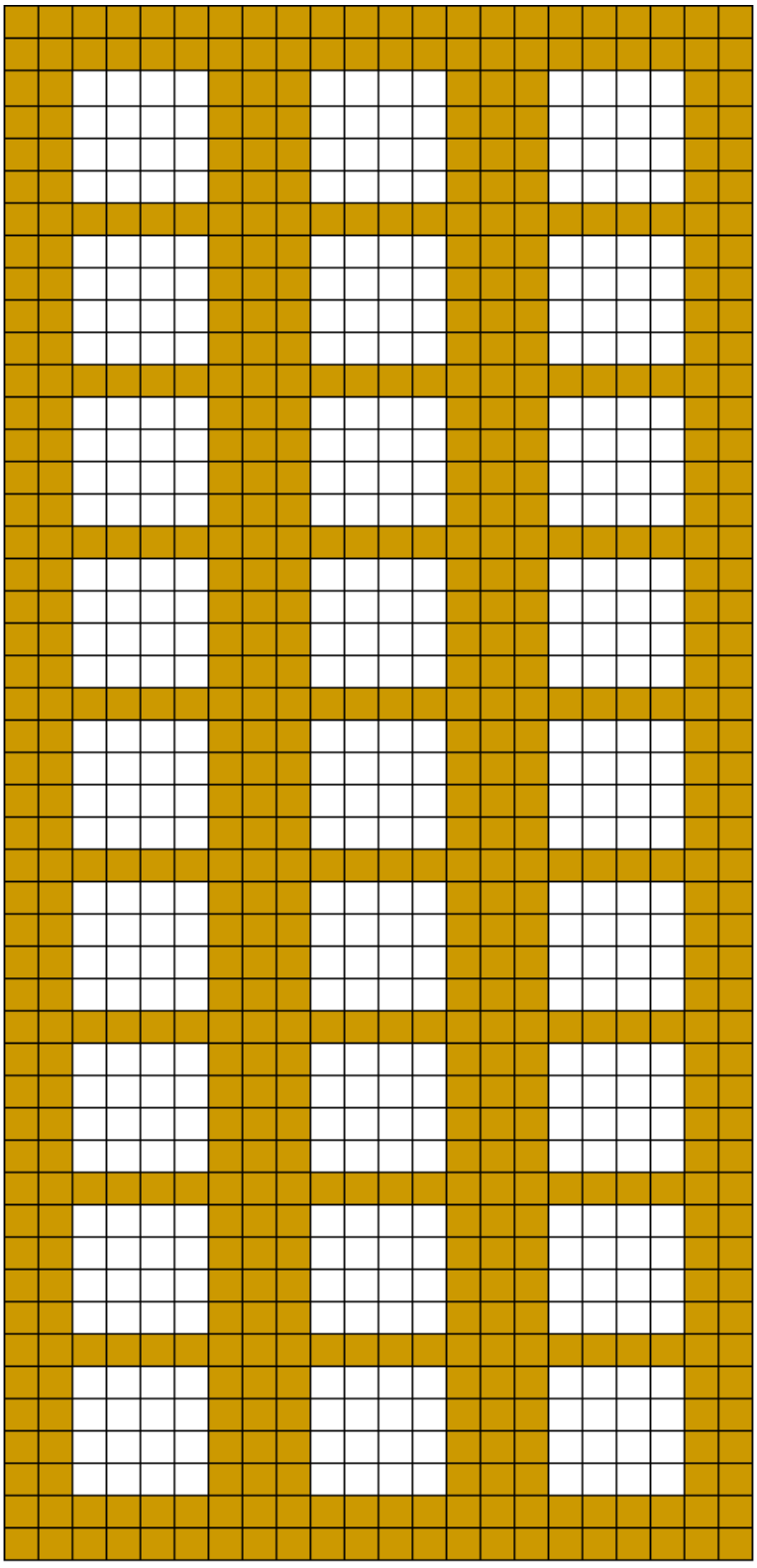
Each square represents one square foot of space in your high tunnel.

Write the names of your crops in the Key, and give them a color (using colored pencils or colored markers makes this easy.)

Fill that color in the rows or spaces where that crop will be planted.

The spaces in the templates that are already colored (yellow) are the walkways.

Square Foot Garden Layout



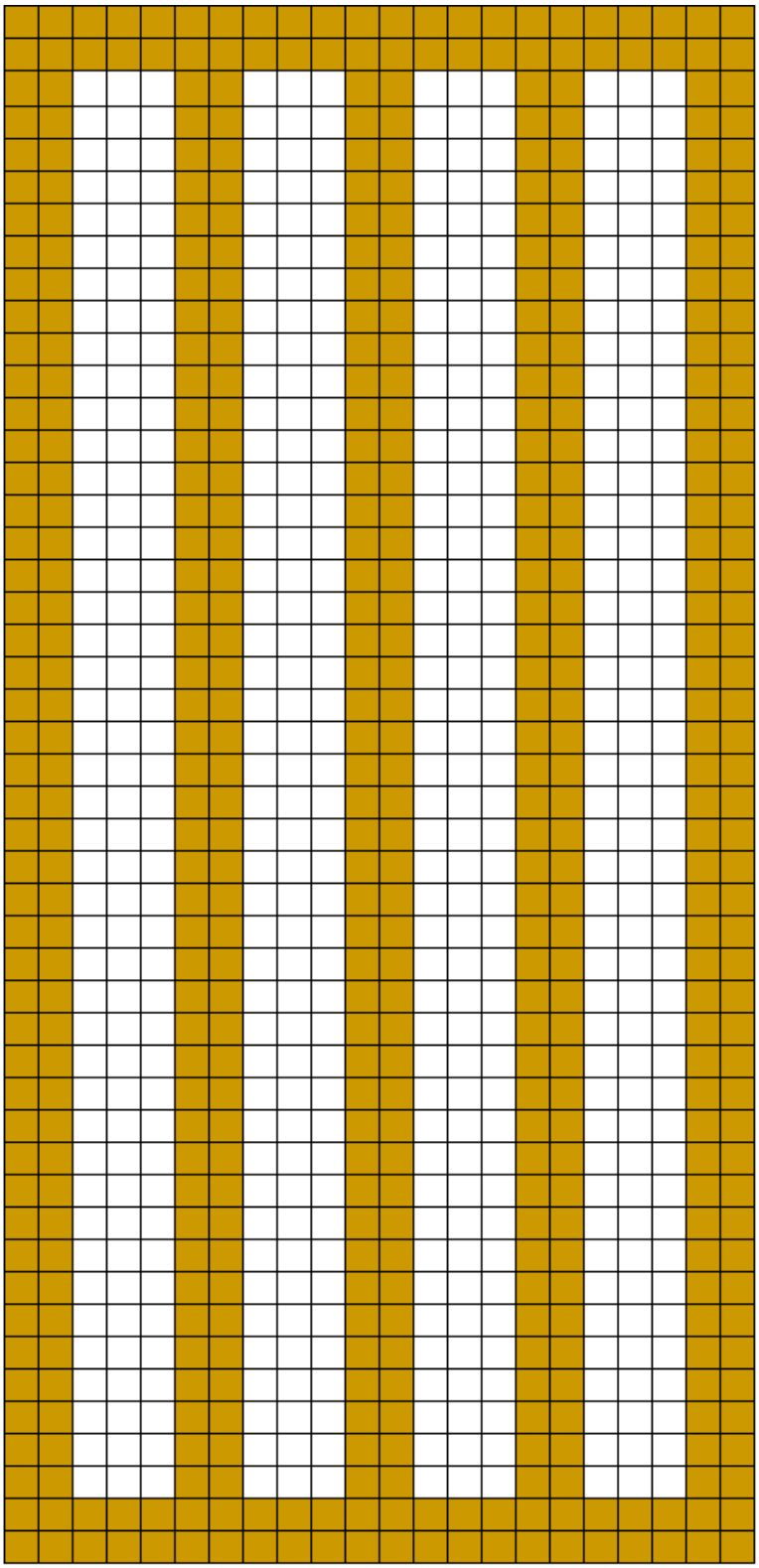
RIMOL
Greenhouse Systems

KEY

Color
Crop

Walkway

3’ wide Permabeds



RIMOL
Greenhouse Systems

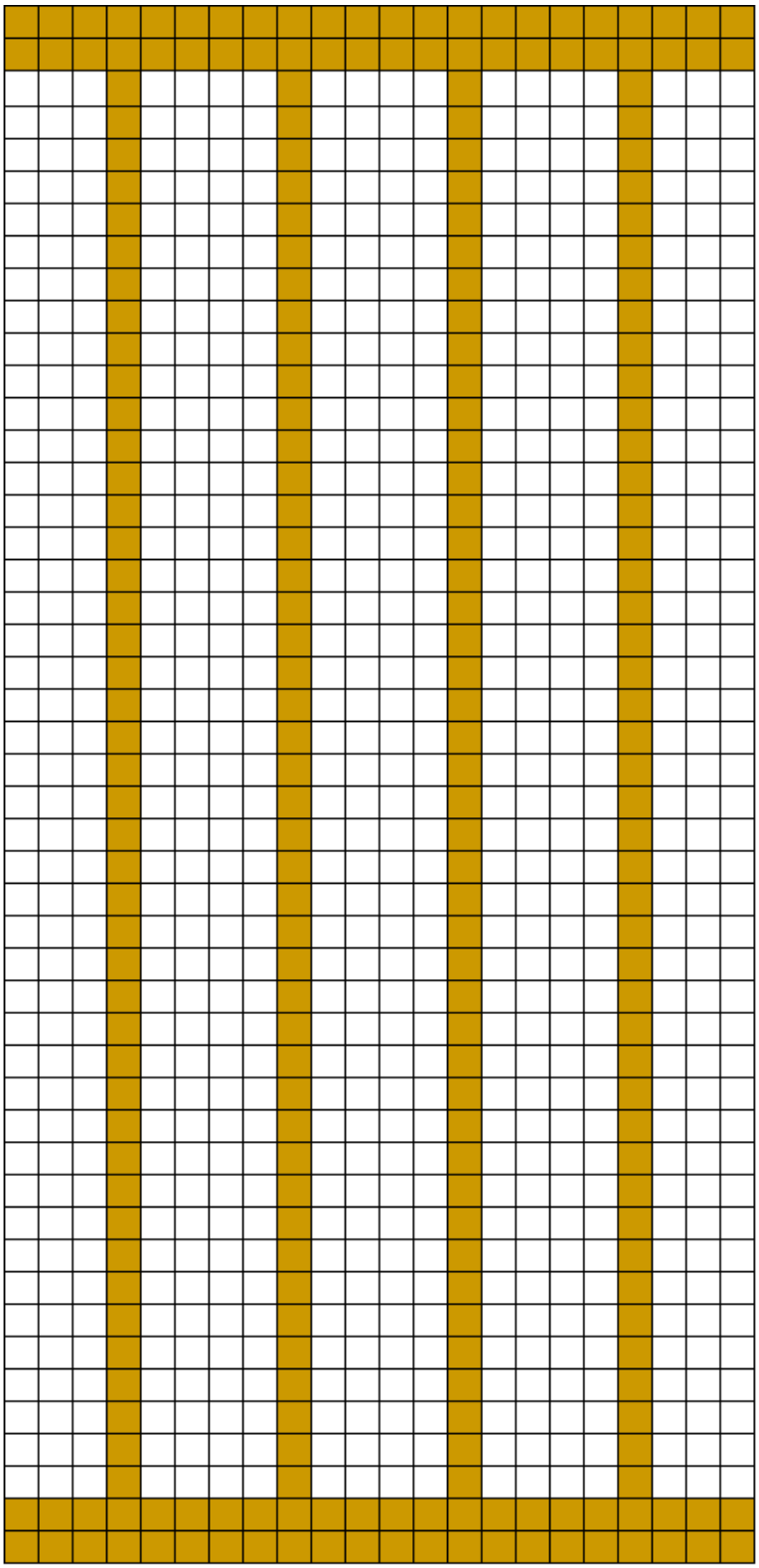
KEY

Color

Crop

Walkway

Rows under Purlins in 22x48 NorthPoint (for trellising)



RIMOL
Greenhouse Systems

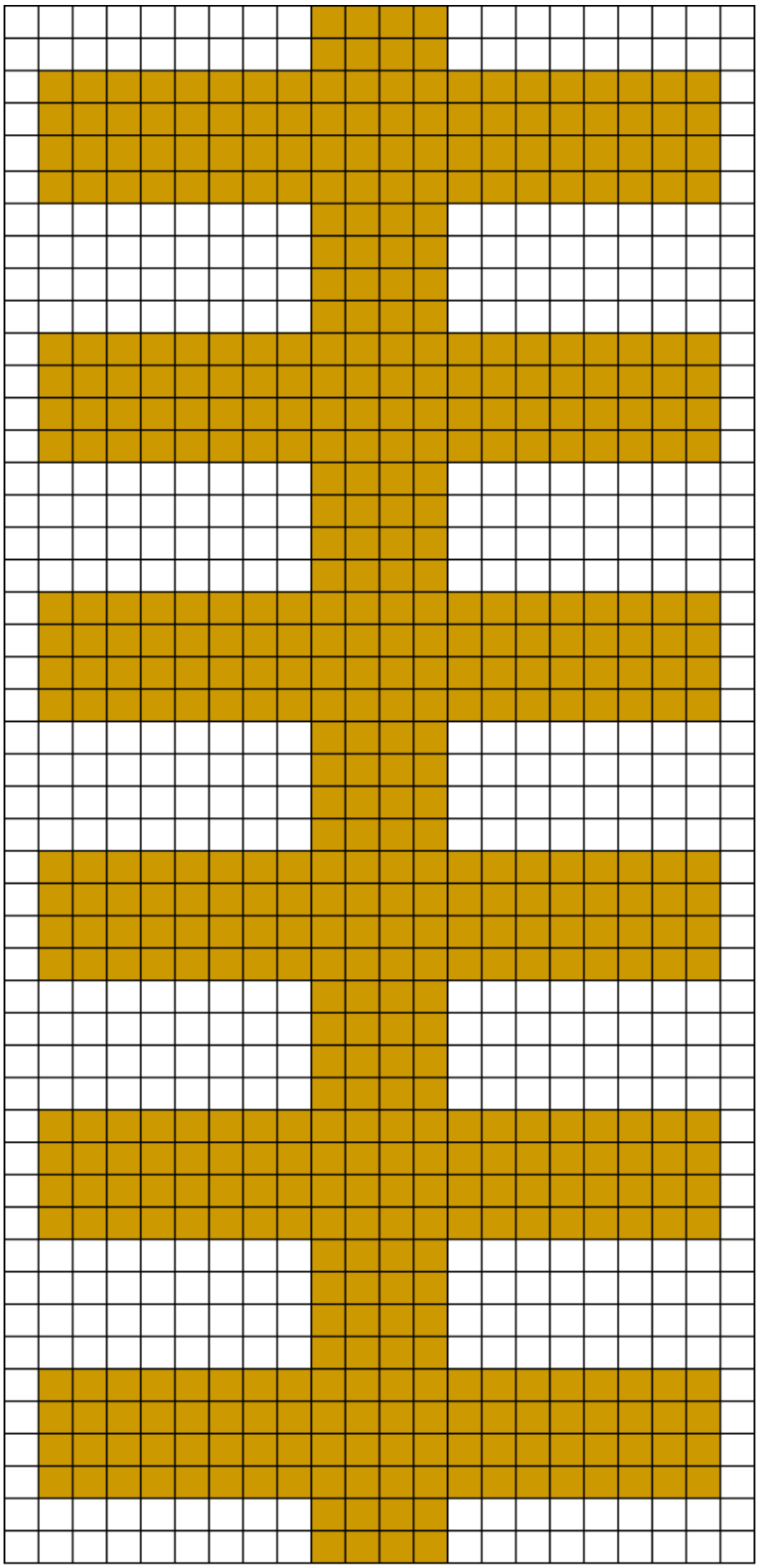
KEY

Color

Crop

Walkway

Accessible Layout



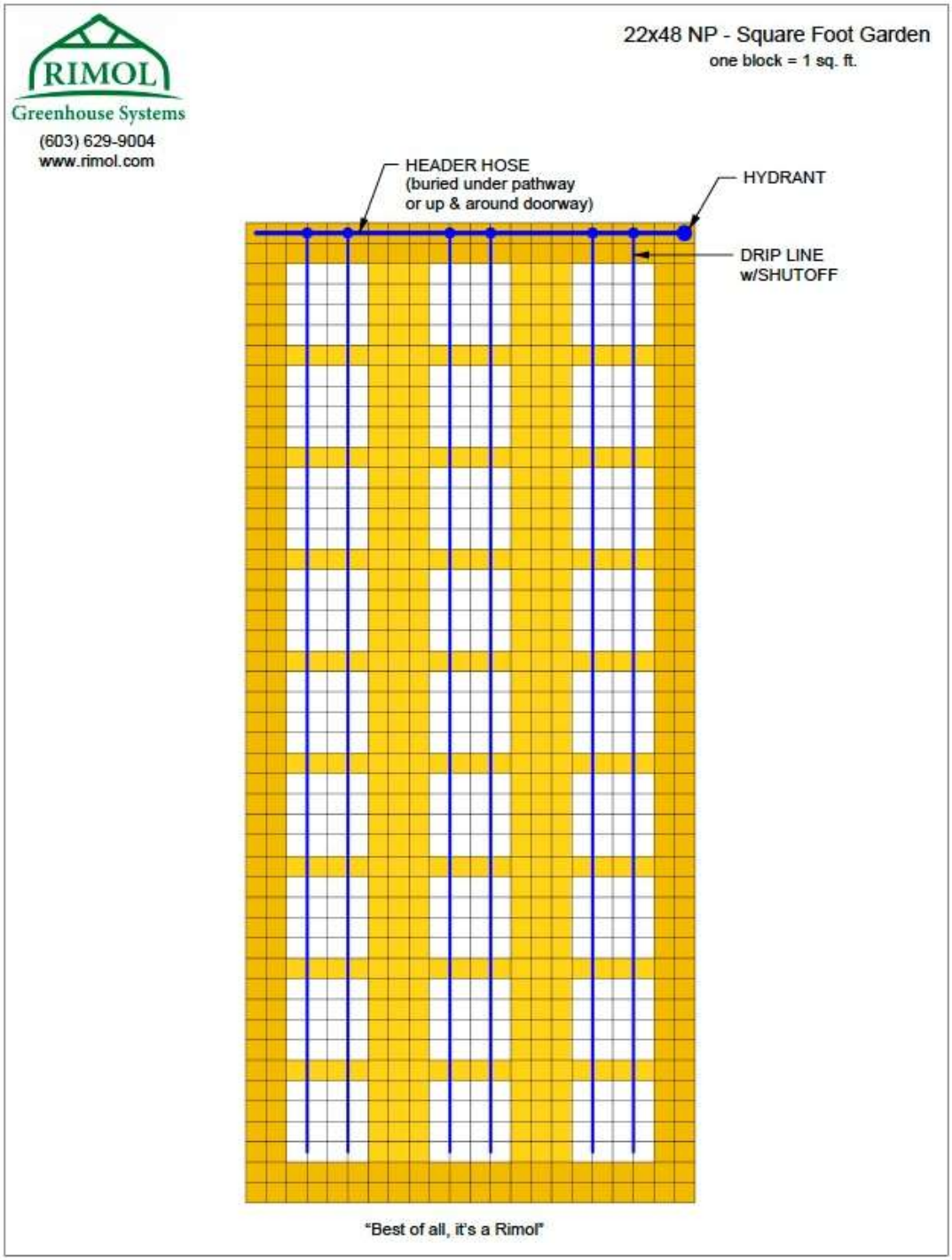
RIMOL
Greenhouse Systems

KEY

Color
Crop

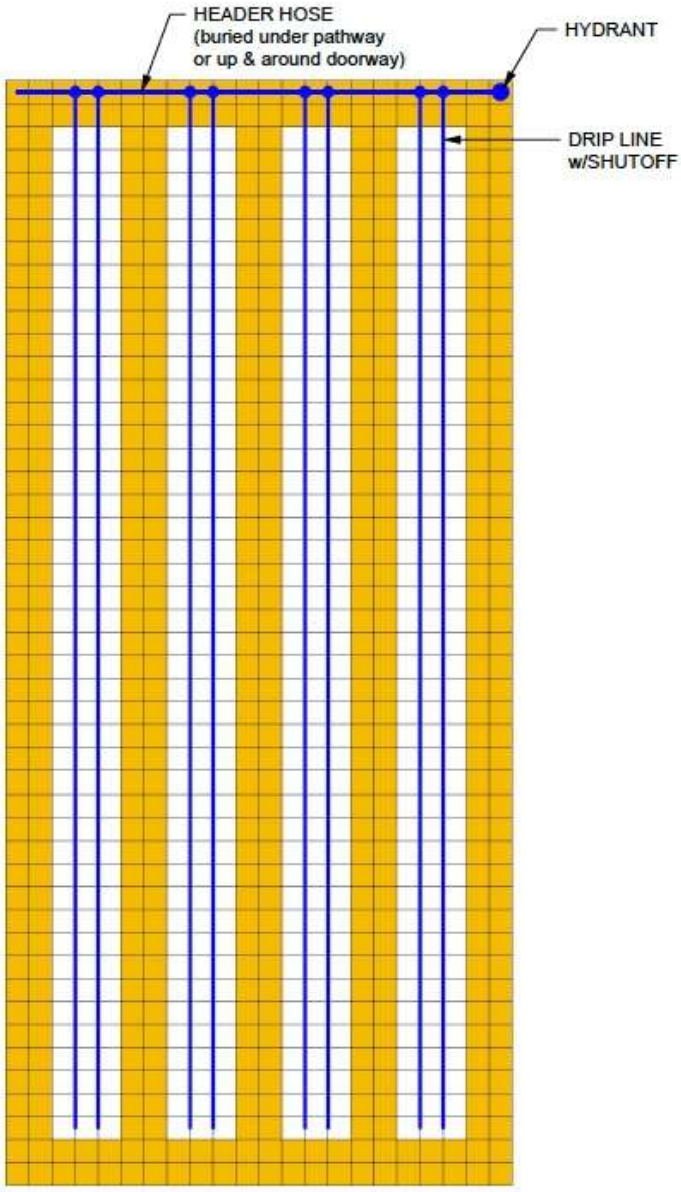
Walkway

Appendix D: 22’x48’ NorthPoint high tunnel irrigation templates



RIMOL
Greenhouse Systems
(603) 629-9004
www.rimol.com

22x48 NP - 3' Wide Permabeds
one block = 1 sq. ft.



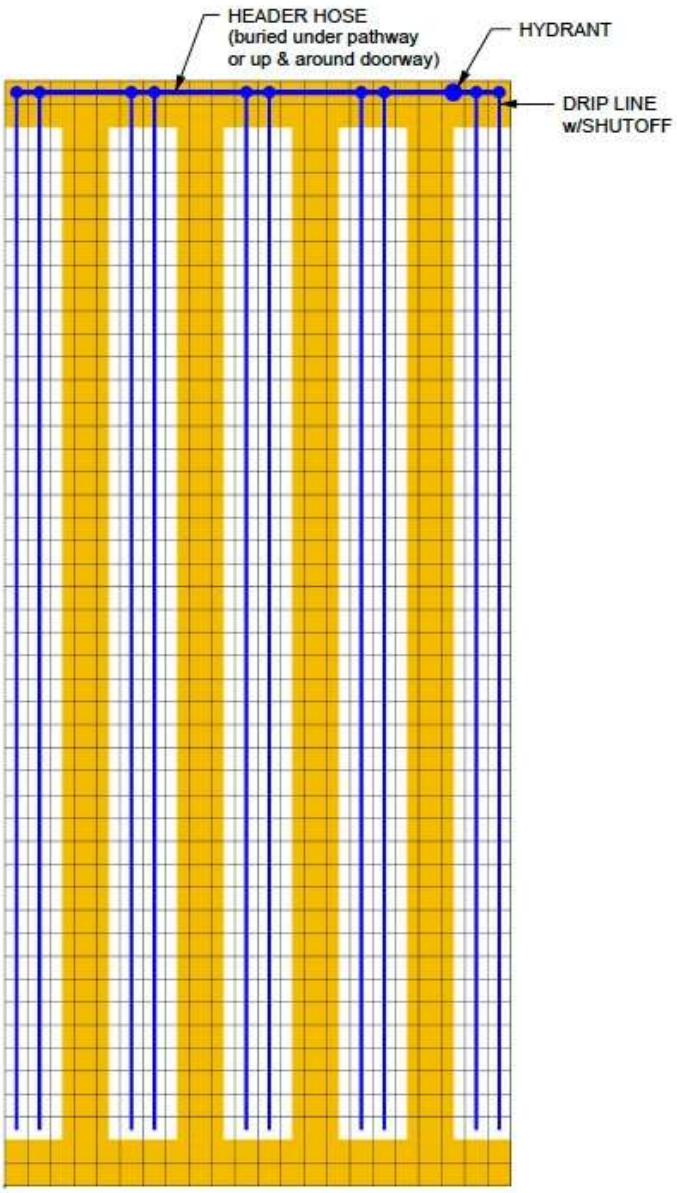
"Best of all, it's a Rimol"

RIMOL
Greenhouse Systems

(603) 629-9004
www.rimol.com

22x48 NP - Rows Under Trellis Purlins

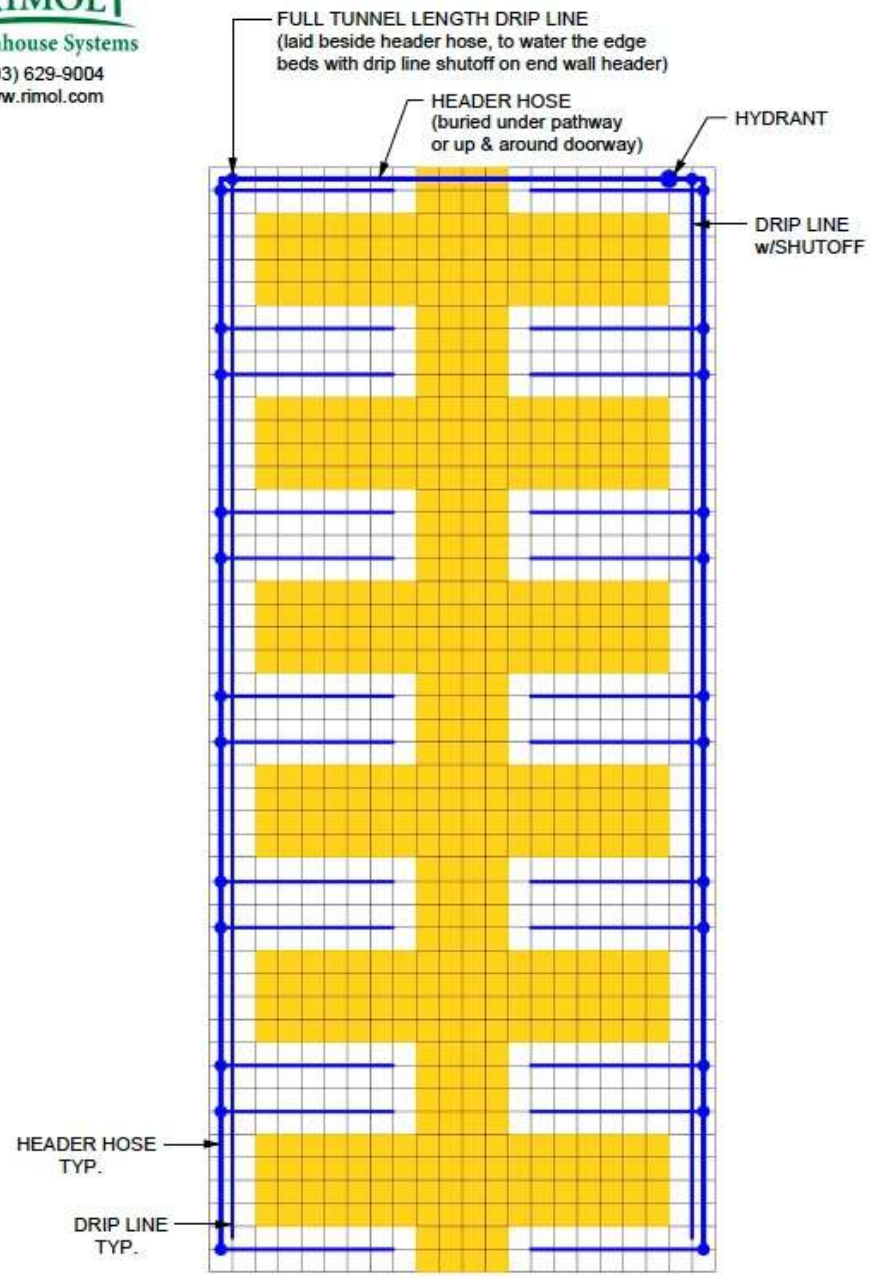
one block = 1 sq. ft.



"Best of all, it's a Rimol"

RIMOL
Greenhouse Systems
(603) 629-9004
www.rimol.com

22x48 NP - Accessible Layout
one block = 1 sq. ft.



"Best of all, it's a Rimol"

Appendix E: Irrigation system parts lists and quotes:

Estimate for 4-Square and Row layouts:

627 Britton Road
Shippensburg PA 17257

717-532-5918 • martinsproducesupplies.com
Greenhouse & Produce Supplies • Wholesale • Retail

Proposal
89763

HARRY EDWARDS
2636 Spring Valley RD
LANCASTER PA 17601

(717)606-8021

Account#	Ship Via	Salesperson	Terms	Proposal Date
EDWHA 0		KZN	CASH	7/ 9/24

Quantity	Item	Description		Price	Amount
		Irrigation specs for #1, 2 & 4			
1	GARDRK	Garden Drip Irrigation Kit (20 rows) (Includes all components for up to 20-50' rows . Includes 100' of mainline header + filter regulator) This is more than enough components for the project but it is in a kit form that has everything		125.91	125.91 T
	.PA	PA Sales Tax on $125.91	%		7.56
		Thank You		TOTAL	133.47

Acceptance of Proposal - The above prices, specifications, and conditions are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____ Date _____

Signature _____ Date _____

ABC Accounting

Estimate for Accessible layout:

627 Britton Road
Shippensburg PA 17257

717-532-5918 • martinsproducesupplies.com
Greenhouse & Produce Supplies • Wholesale • Retail

Proposal
89764

HARRY EDWARDS
2636 Spring Valley RD
LANCASTER PA 17601

(717)606-8021

Account#	Ship Via	Salesperson	Terms	Proposal Date
EDWHA 0		KZN	CASH	7/ 9/24

Quantity	Item	Description		Price	Amount
		Irrigation specs for #3			
1	GARDRK	Garden Drip Irrigation Kit (20 rows) (Includes all components for up to 20-50' rows . Includes 100' of mainline header + filter regulator) This is more than enough components for the project but it is in a kit form that has everything		125.91	125.91 T
8	DTF250BV	Drip Tape Valve w/Green Handle .250 Barb		1.89	15.12 T
1	BPT0071	3/4" x 100' Orchard Tubing (55 PSI)	GP	15.91	15.91 T
3	PL80P3T	3/4" Power-loc Tee	GP	4.49	13.47 T
3	PL80END	3/4" Power-loc End Cap	GP	2.11	6.33 T
	.PA	PA Sales Tax on $176.74	%		10.61

Thank You

TOTAL	187.35

Acceptance of Proposal - The above prices, specifications, and conditions are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____ Date _____

Signature _____ Date _____

ABC Accounting

Appendix F: Suggested Reference Materials

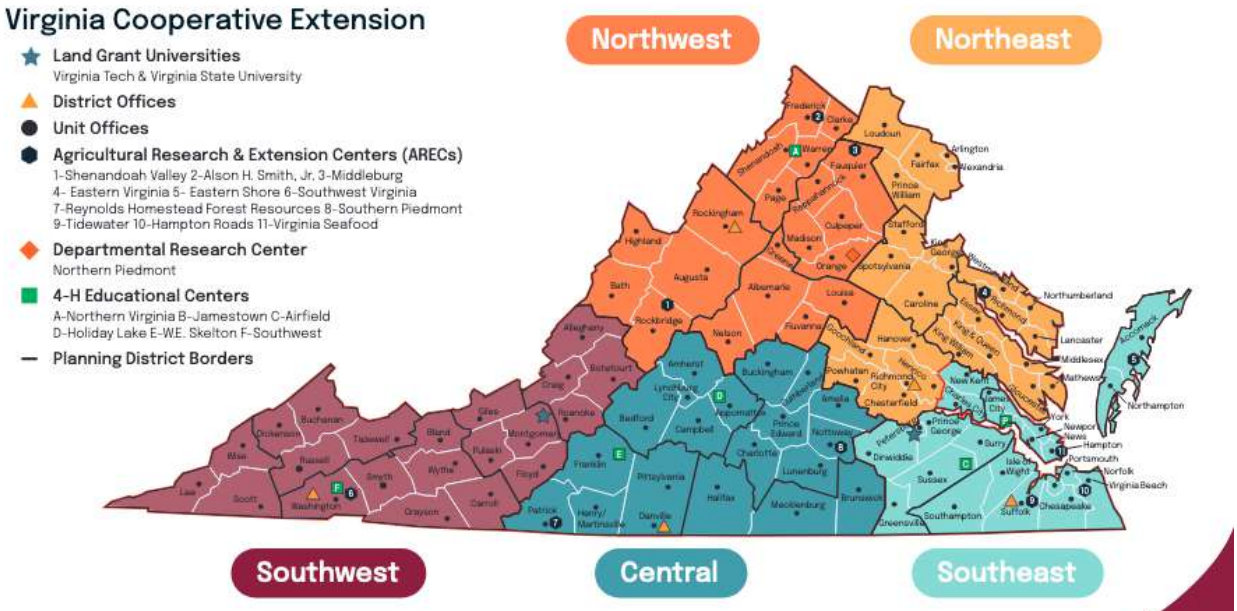
Square Foot Gardening – Mel Bartholomew
The Market Gardener – Jean-Martin Fortier
The Permaculture Market Garden – Zach Loeks
Four Season Harvest – Elliot Coleman
The Greenhouse and Hoophouse Growers Handbook – Andrew Mefferd
Sustainable Market Farming – Pam Dawling
The Organic Farmer's Business Handbook – Richard Wiswall
Rodale's Ultimate Encyclopedia of Organic Gardening – J.I. Rodale

Growing for Market Magazine – www.growingformarket.com

Rodale's Organic Growers Extension support - https://rodaleinstitute.org/consulting/contact-us/
NRCS, SARE and FSA literature

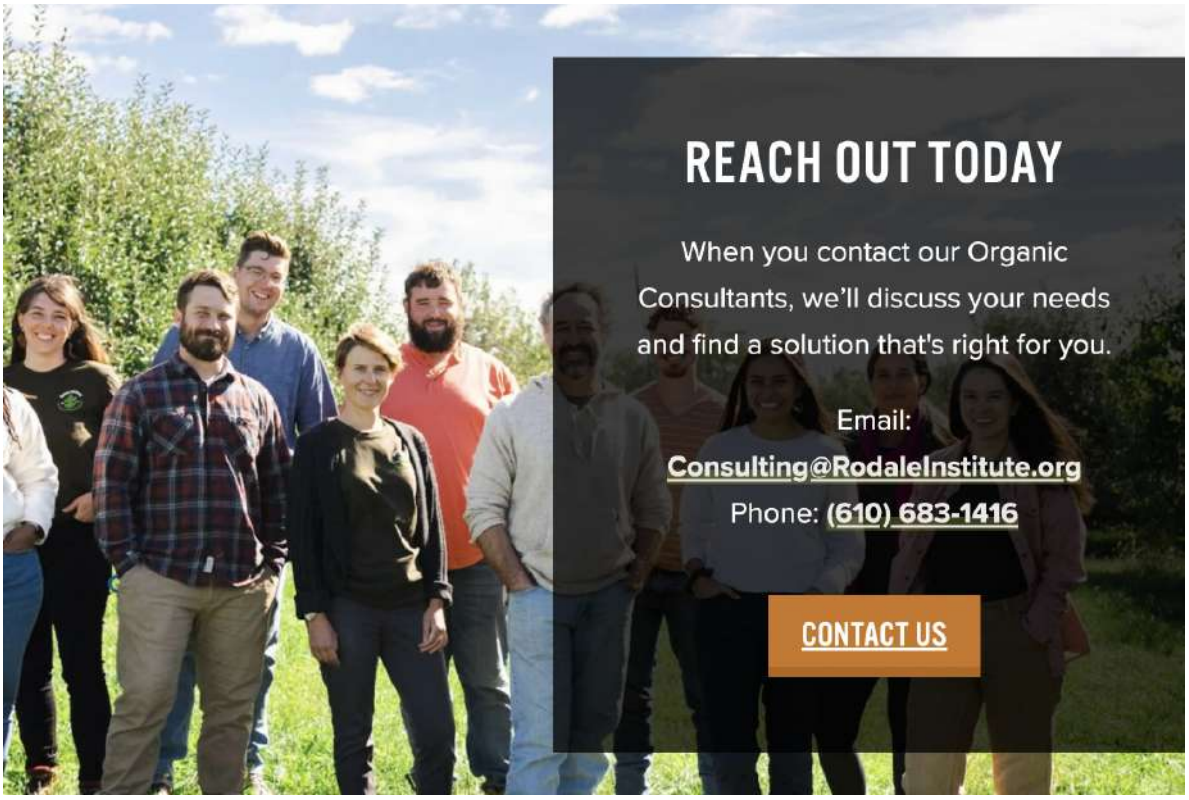
Appendix G: Virginia Cooperative Extension Resources

Office	Street Address	City, State	Contact	Title	Phone	Email
Central District Office	239 Eastwood Drive	Danville, VA 24540	Sonya Furgurson	District Director	434-791-4273	sonyaf@vt.edu
Northeast District Office	2810 N Parham Rd STE 300,	Richmond, VA 23294	Morris White	District Director	804-527-4252	debbie23@vt.edu
Northwest District Office	2322 Blue Stone Hills Drive, Suite 140	Harrisonburg, VA 22801	John Thompson	District Director	540-232-6015	jthomp75@vt.edu
Southeast District Office, Tidewater AREC	6321 Holland Road	Suffolk, VA 23437	Janet Spencer	District Director	757-807-6532	jaashle2@vt.edu
Southwest District Office, Southwest Virginia Higher Education Center	One Partnership Circle, Suite 12	Abingdon, VA 24210	Danny Peek	District Director	276-619-4330	dpeek@vt.edu



Virginia Cooperative Extension
Virginia Tech • Virginia State University

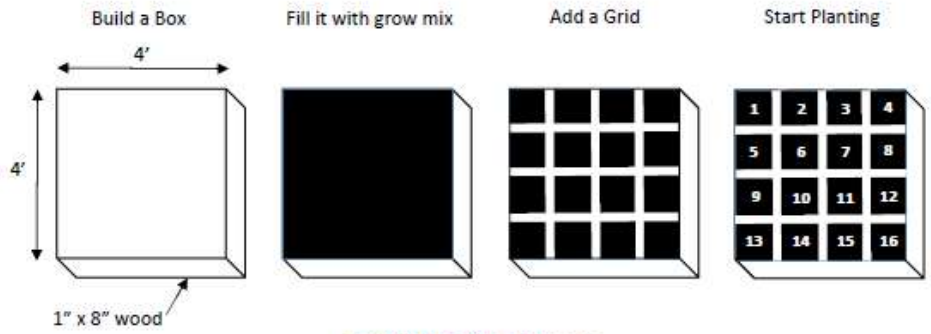
Appendix H: Rodale Institute Organic Consultants



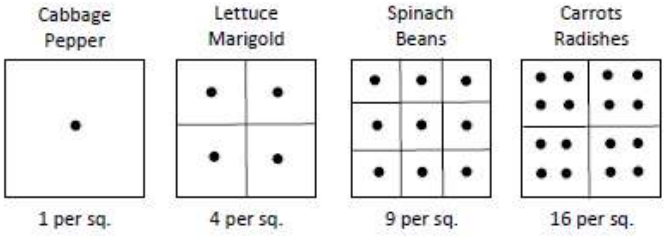
Appendix I: Planting guides – Square Foot Gardening

(Seed catalogs and packets typically contain more specific recommendations for your selected varieties.)

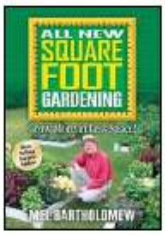
HOW TO: SQUARE FOOT GARDEN



Plant Spacing in Each Square



Square Foot Gardening



FG takes only: 20% of the space
15% of the water
10% of the labor
5% of the seeds
0% of the fertilizer
Yet produces: 100% of the harvest

- Most plants grow in only 6 to 8 inches of growing medium.
- Growing medium: 1/3 blended compost, 1/3 peat moss, 1/3 course vermiculite.
- As you harvest, add a trowel full of blended compost to the empty square and plant your next crop.
- SFG needs no fertilizer (compost does it all).
- LITTLE TO NO WEEDS
- NO DIGGING
- NO ROTO-TILLING

Square Foot Gardening Plant & Seed Spacing

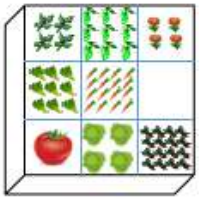
Looking at the back of the seed packet...if instructions indicate "thin to"

12" spacing = 1 plant / square foot (tomato)

6" spacing = 4 plants / square foot (lettuce)

4" spacing = 9 plants / square foot (spinach, onions)

3" spacing = 16 plants / square foot (radish, carrot)



XL *1 plant per 2 square feet*	**L** *1 plant*	**M** *4 plants*	**S** *9 plants*	**XS** *16 plants*
Watermelon	Tomato	Lettuce	Bush bean	Radish
Zucchini squash	Eggplant	Basil	Beet	Carrot
Pumpkin	Broccoli	Marigold	Spinach	Onions
Melon Winter squash Summer squash	Cabbage Cauliflower Cucumber Okra Pepper	Corn Parsley Potato Strawberry Turnip		

TEN BASICS

1. Layout	Arrange garden in squares, not rows. Layout 4' x 4' planting areas. For higher yield production, try some 4' x 8' or 12' boxes.
2. Boxes	Build bottomless boxes to hold new soil mix. Add plywood bottoms for tabletop gardens.
3. Aisles	Space boxes 3' apart to form walking aisles.
4. Soil	Fill boxes with special "Soil" mix: 1/3 blended compost, 1/3 peat moss, and 1/3 course vermiculite.
5. Grid	Make a square foot grid for the top of each box. **A MUST!**
6. Care	NEVER WALK ON YOUR GROWING SOIL. Tend your garden from the aisles.
7. Select	Plant a different flower, vegetable, or herb crop in each square foot; using 1, 4, 9, or 16 plants per square foot.
8. Plant	Conserve seeds. Plant only a pinch (2 or 3 seeds) per hole. Transplants are planted in a slight saucer-shaped depression.
9. Water	Water by hand or drip irrigation system.
10.Harvest	When you finish harvesting a square foot, add compost and replant it with a new different crop.

LOCATION

Pick an area that gets 6 – 8 hours of sunshine daily. (Most plants need this.)

Be sure it is not near trees and shrubs. (Watch for roots and shade.)

Have it as close as possible to the house. (For convenience, and protection.)

Existing soil is not really important. (Since you won't be using it.)

Area has no puddles after a heavy rain. (Drainage is important.)

What could be easier than this? **And start planting!**

Build a box

Fill with "Soil" Mix

Add a grid

Planting guides – WVU and Rutgers Planting Guide for Row Crops

Table 1. Suggested plant spacing, number of seeds or plants required, and average yield of common vegetables. Table modified from Stoner and Smith (1978) to include square foot conversion.

Vegetable	Spacing (inches) Rows	Plants	Plants or seed per 100 feet	Average yield expected 100 feet	Average Yield Expected/ft²
Asparagus	36-48	18	66 plants or 1 oz	30 lb	0.08-0.1 lb
Beans, snap bush	24-36	3-4	½ lb	120 lb	0.4-0.6 lb
Beans, snap pole	36-48	4-6	½ lb	150 lb	0.38-0.5 lb
Beans, lima bush	30-36	3-4	½ lb	25 lb shelled	0.08-0.1 lb
Beans, lima pole	36-48	12-18	¼ lb	50 lb shelled	0.13-0.17 lb
Beets	15-24	2	1 oz	150 lb	0.75-1.2 lb
Broccoli	24-36	14-24	50-60 plts or ¼ oz	100 lb	0.33-0.5 lb
Brussels Sprouts	24-36	14-24	50-60 plts or ¼ oz	75 lb	0.25-0.38 lb
Cabbage	24-36	14-24	50-60 plts or ¼ oz	150 lb	0.5-0.75 lb
Cabbage, Chinese	18-30	8-12	60-70 plts or ¼ oz	80 heads	n/a
Carrots	15-24	2	½ oz	100 lb	0.5-0.8 lb
Cauliflower	24-36	14-24	50-60 plts or ¼ oz	100 lb	0.33-0.5 lb
Celery	30-36	6	200 plants	180 stalks	n/a
Collards & Kale	18-36	8-16	¼ oz	100 lb	0.33-0.67 lb
Corn, sweet	24-36	12-18	3-4 oz	10 doz	n/a
Cucumbers	48-72	24-48	½ oz	120 lb	0.2-0.3 lb
Eggplant	24-36	18-24	50 plts or 1/8 oz	100 lb	0.33-0.5 lb
Kohlrabi	15-24	4-6	½ oz	75 lb	0.38-0.6 lb
Lettuce, head	18-24	6-10	¼ oz	100 heads	n/a
Lettuce, leaf	15-18	2-3	¼ oz	50 lb	0.33-0.4 lb
Muskmelon, cantaloupe	60-96	24-36	50 plts or ½ oz	100 fruit	n/a
Okra	36-42	12-24	2 oz	100 lb	0.29-0.33 lb
Onions	15-24	3-4	400-600 sets or 1 oz	100 lb	0.5-0.8 lb
Parsley	15-24	6-8	¼ oz	30 lb	0.15-0.24 lb
Parsnips	18-30	3-4	½ oz	100 lb	0.4-0.67 lb
Peas, English	18-36	1	1 lb	20 lb	0.07-0.13 lb
Peas, Southern	24-36	4-6	½ lb	40 lb	0.13-0.2 lb
Peppers	24-36	18-24	50 plts or 1/8 oz	60 lb	0.2-0.3 lb
Potatoes, Irish	30-36	10-15	6-10 lb of seed tubers	100 lb	0.33-0.4 lb
Potatoes, sweet	36-48	12-16	75-100 plts	100 lb	0.25-0.33 lb
Pumpkins	60-96	36-48	½ oz	100 lb	n/a
Radishes	14-24	1	1 oz	100 bunches	n/a
Spinach	14-24	3-4	1 oz	40-50 lb	0.23-0.36 lb
Squash, summer	36-60	18-36	1 oz	150 lb	0.3-0.5 lb
Squash, winter	60-96	24-48	½ oz	100 lb	0.13-0.2 lb
Tomatoes	24-48	18-36	50 plts or 1/8 oz	100 lb	0.25-0.5 lb
Turnip, greens	14-24	2-3	½ oz	50-100 lb	0.38-0.6 lb
Turnip, roots	14-24	2-3	½ oz	50-100 lb	0.38-0.6 lb
Watermelon	72-96	36-72	1 oz	40 fruit	n/a

Planting guides – Virginia Planting Guide for Row Crops

How Much to Plant

How much of each crop to plant is determined by many factors, including your vegetable preferences, the size of your garden, and the time and energy you can devote to maintaining it. The age, lifestyle, and cooking habits of your family influence how much of each vegetable you should grow. You may want to grow more of a certain crop if you plan on canning or freezing.

How Much to Plant

Crop	Distance between plants in row	Distance between rows	Approximate amount of seed/ transplants for 10'row	Approximate yield per 10' row	Approximate number of plants per person per planting	Number of Plantings Spring/ Summer	Number of Plantings Fall
Asparagus	12-18"	36-48"	10 crowns	3-4 lbs	5-10	1	
Beans, bush	1-3"	24-36"	1 oz seed	3-5 lbs	10	4	
Beans, pole	4-12"	36-48"	1 oz seed	6-10 lbs	3-5	2	
Beans, lima	3-6"	24-36"	1 oz seed	4-6 lbs	4-8	1	
Beets	2-3"	12-18"	1/8 oz seed	8-10 lbs	10-20	2	2
Broccoli	12-24"	18-36"	10 transplants	4-6 lbs	3-5	2	3
Brussels Sprouts	18-24"	30-36"	7 transplants	3-5 lbs	2-5		1
Cabbage	12-18"	18-36"	10 transplants	10-25 lbs	4-8	1	2
Chinese Cabbage	4-30"	18-36"	10 transplants	20-30 lbs	6-8	1	2
Carrots	thin to 1.5-2"	6-12"	1/20 oz seed	7-10 lbs	10-30	1	2
Cauliflower	12-24"	24-36"	10 transplants	8-10 lbs	3-5	1	2
Chard, Swiss	6-12"	18-30"	1/5 oz seed	8-12 lbs	3-5	1	2
Collards, Kale	12-24"	18-36"	10 transplants	4-8 lbs	3-7	1	2
Cucumbers	12-18"	48-72"	10 transplants	8-10 lbs	2-4	2-3	
Eggplant	18-24"	30-42"	7 transplants	10-12 lbs	1-3	1	
Kohlrabi	4-6"	12-36"	30 transplants	4-8 lbs	3-6	1	2
Leeks	4-6"	12-30"	1/10 oz seed	5-10 lbs	10-12	1	1
Lettuce, head	6-10"	10-18"	20 transplants	2-4 lbs	5-10	3	3
Lettuce, baby salad	0.2-0.4"	6-12"	1/4 oz seed	2-4 lbs	10-15 feet of row	2	3
Muskmelons	24-36"	60-90"	5 transplants	15-25 lbs	2-3	2	
Mustard	1-2" thin to 6"	18-30"	1/10 oz seed	3-6 lbs	5-10	1	2
Okra	12-18"	36-48"	15 transplants	5-10 lbs	3-5	2	
Onions (bulbing)	2-4"	12-18"	60 transplants	7-10 lbs	20-30	1	
Peas, garden	2-3"	12-30"	1/2 oz seed	2-6 lbs	20-30	2	
Peppers	12-24"	30-36"	10 transplants	5-18 lbs	3-5	2	
Potatoes	10-18"	24-42"	1 lb	10-20 lbs	10	1	
Pumpkins	2-4'	5-8'	1/20 oz seed	10-20 lbs	1	1	
Radish	3/4-1"	6-12"	1/8 oz seed	3-5 lbs	2 feet of row	2	4
Rutabaga	3-6"	12-30"	1/8 oz seed	8-12 lbs	10-20		1
Southern Peas (Cowpeas)	3-4"	24-36"	1 oz seed	5-18 lbs	20-30	1	
Sweet Corn	6-12"	24-36"	1/2 oz seed	7-10 lbs	15-20	3-5	
Spinach	0.5-1" thin to 4"	6-12"	1/8 oz seed	4-6 lbs	15	2	2
Squash, summer	18-36"	36-60"	1/10 oz seed	20-80 lbs	1-2	3	
Squash, winter	2-4'	3-10'	1/10 oz seed	10-80 lbs	1-2	1	
Sweet Potato	9-12"	30-48"	15 slips	8-12 lbs	5	1	
Tomatoes	18-36"	36-50"	7 transplants	15-45 lbs	2-4	2	
Turnips	2-3"	12-24"	1/8 oz seed	8-12 lbs	10-20	1	1
Watermelons	3-4'	5-10'	3 transplants	8-40 lbs	2	2	

Planting guides – example: Roxbury Farm Weekly CSA share plan

- Work backwards from this plan to determine planting dates and quantities (add 30%) to provide this predicted harvest.

week of July 16, 2007	Quantity	Unit
Salad Mix	0.75	LB
Braising mix	0.75	LB
Cucumbers	1.3	LB
PepperGreen	1.5	LB
SummerSquash	0.5	LB
Zucchini	0.5	LB
Corn	6	EA
Carrot-baby	1	Bnch
Red Cabbage Early	1	Head
OnionGreen	1	Bnch
Culinairy Herbs	1	EA
BeansGreen	1	LB

week of July 23, 2007	Quantity	Unit
Salad Mix	0.75	LB
Braising mix	0.75	LB
Eggplant	1	LB
PepperGreen	1.5	LB
SummerSquash	0.5	LB
Zucchini	0.5	LB
OnionGreen	1	Bnch
BeetFresh	1	Bnch
Corn	6	EA
Cucumbers	1.5	LB
Culinairy Herbs	1	EA
BeansGreen	1	LB

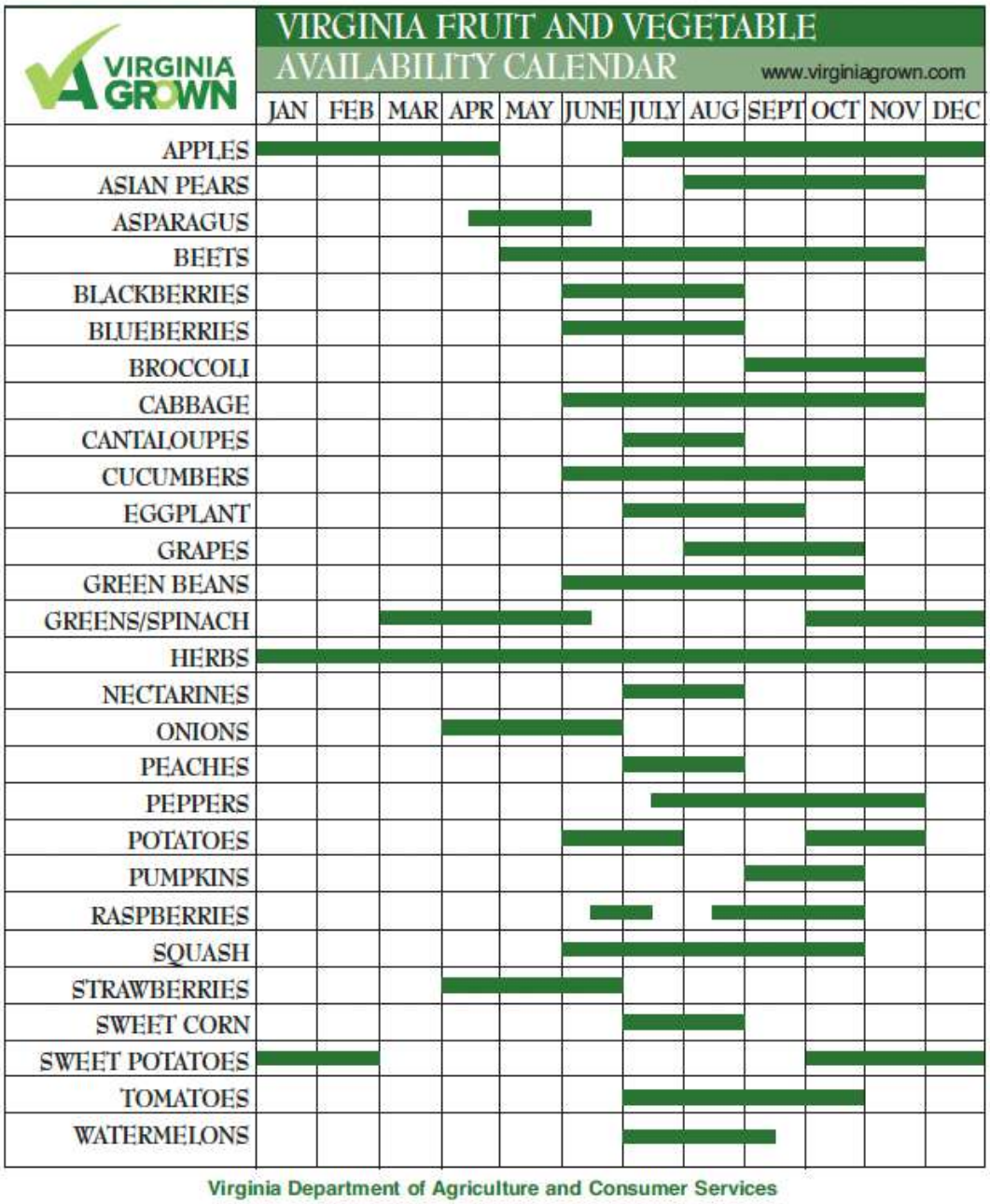
week of July 30, 2007	Quantity	Unit
Salad Mix	0.75	LB
Braising mix	0.75	LB
Eggplant	1	LB
PepperGreen	1.5	LB
Tomato	2	LB
Tomato Cherry	1	Pint
Corn	6	EA
Carrot-baby	1	Bnch
Cucumbers	1.5	LB
OnionGreen	1	Bnch
Culinairy Herbs	1	EA

week of Aug 6, 2007	Quantity	Unit
Braising mix	0.75	LB
Salad Mix	0.75	LB
BeetFresh	1	Bnch
Eggplant	1	LB
PepperGreen	1.5	LB
Tomato	2	LB
Tomato Cherry	1	Pint
Corn	6	EA
Cucumbers	1.5	LB
Culinairy Herbs	1	EA
Tomato small round	1	Pint

week of Aug 13, 2007	Quantity	Unit
Salad Mix	0.75	LB
Braising mix	0.75	LB
PepperGreen	1.5	LB
Tomato	2	LB
Tomato Cherry	1	Pint
Tomato-Heirloom	1	LB
Corn	6	EA
OnionStorage	1	LB
Cucumbers	1	LB
Culinairy Herbs	1	EA
BeansGreen	1	LB
Pickling	1	LB

week of Aug 20, 2007	Quantity	Unit
Braising mix	0.75	LB
Fennel	1	EA
Salad Mix	0.75	LB
PepperGreen	1.5	LB
Eggplant	1	LB
Broccoli	1	Bnch
Tomato	3	LB
Tomato Cherry	1	Pint
Corn	6	EA
Cucumbers	1	LB
Culinairy Herbs	1	EA
BeansGreen	1	LB

Planting guides – VA Grown fruit and vegetable availability calendar



Appendix J: WVU and Rutgers Yield Chart

Table 2. Yield of selected vegetable and small fruit high tunnel crops. Lewis Jett. Personal Communication.

Crop	Average yield/sq ft (no. or lb)	Estimated Total Yield per High Tunnel (no. or lb)
Beans, snap bush	0.5 lb	1,000 lb
Beets	5 beets	1,600 bunches
Broccoli	0.4 lb	670 bunches
Carrots	16 carrots	2,600 bunches
Cucumbers	3.5 lb	7,000 lb
Eggplant	1.6 lb	3,200 lb
Kale (full size)	3 bunches	6,500 bunches
Kale (as baby salad greens)	0.5 lb	1,000 lb
Lettuce (as baby salad greens)	0.5 lb	1,000 lb
Lettuce (full size head)	1.2 lb	2,400 lb
Muskmelon, cantaloupe	1.5 lb	3,000 lb
Onions	0.6 lb	1,200 lb
Onions (green bunching scallions)	15 scallions	4,200 bunches
Potatoes (Irish)	1.5 lb	3,000 lb
Peas (Sugar snap)	0.5 lb	1,000 lb
Raspberries (primocane)	0.4 lb	800 lb
Spinach (full size leaves)	0.5 lb	1,000 lb
Strawberries (June-bearer)	0.8 lb	1,600 lb
Squash (summer, early)	1.3 lb	2,600 lb
Squash (summer, full season)	4.5 lb	9,000 lb
Swiss Chard	2.9 bunches	5,800 bunches
Tomatoes (red round, slicing)	1.8 lb	3,600 lb
Tomatoes (grape, cherry, salad)	1.2 lb	2,400 lb
Peppers, sweet bell	2.0 lb	4,000 lb
Turnips	4 turnips	1,300 bunches

As a General Guideline,
a Yield Expectation of
0.5 lb/square foot*
is a realistic value for
Mixed Stand, Small-Scale Agriculture

*Fifty-three yield values were encountered in preparing this report. Fifty were individual crop yield reports and three were yields reported from 2,608 mixed stand community or home food gardens under a variety of settings and reporting methods. For example, some reports included non-cropped alleyways in measurements while others excluded them; some were self reported by gardeners, while others weighed yield samples. Across this wide range of settings, 0.5 lb/ft^2 was the mode (most frequently occurring yield value), occurring 13/53 times. While an extreme range of yields from 0.09 to 4.50 lb/ft^2 were encountered in these reports, the most common yield range was 0.20 to 1.3 lbs./ft^2.

RUTGERS
New Jersey Agricultural Experiment Station
88 Lipman Drive, New Brunswick, NJ 08901-8525 848.932.3610

Appendix K: Recommended Planting and Harvesting Dates

Recommended Planting and Harvest Dates

Hardiness Zone 6a

Recommended Planting and Harvest Dates

Refer to the legend at the bottom of the chart to determine when it is appropriate to plant and harvest each vegetable, based on the last and first killing frost date for your region. Actual last and first killing frost dates will vary due to local conditions and yearly temperature fluctuations. Planting and harvest periods are represented as a 10-day range. You may wish to favor earlier or later planting dates within the given range based on local data or experience.

Note: The use of row cover fabric and cold frames may extend the expected planting and harvest window by two to four weeks in the spring and fall.

	Last Spring Frost: 5/5 - 5/15																		First Fall Frost: 10/5 - 10/15																					
Crop	2/5	2/15	2/25	3/5	3/15	3/25	4/5	4/15	4/25	5/5	5/15	5/25	6/5	6/15	6/25	7/5	7/15	7/25	8/5	8/15	8/25	9/5	9/15	9/25	10/5	10/15	10/25	11/5	11/15	11/25	12/5	12/15	12/25	1/5	1/15	1/25	2/5	2/15	2/25	
Asparagus***							x	x	x	x	0	0	0	0	0	0	0																							
Beans, bush											x	x	x	x	x	#	#	#	#	0	0	0	0	0	0	0														
Beans, pole											x	x	x	x	x	x	0	0	0	0	0	0	0	0	0	0														
Beans, lima												x	x	x	x	x	x			0	0	0	0	0	0	0														
Beets							x	x	x	x	x			0	0	0	0	0	x	x	x	x		0	0	0	0	0	0											
Broccoli*								x	x	x	x	x			0	0	0	#	#	x	x				0	0	0	0	0											
Brussels Sprouts*																	x	x	x								0	0	0	0										
Cabbage*								x	x	x	x	x	0	0	0	0	0	#	x	x	x				0	0	0	0	0											
Chinese Cabbage*								x	x	x	x	x			0	0	0	#	x	x	x				0	0	0	0	0											
Carrots							x	x	x	x	x		0	0	0	0	#	#	#	0				0	0	0	0	0	0	0	0	0								
Cauliflower*								x	x	x					0	0	#	x	x	x					0	0	0	0	0											
Chard, Swiss							x	x	x	x	x	#	0	0	0	0	0	0	#	#	#	#	0	0	0	0	0	0	0											
Collards, Kale						x	x	x	x	x	#	0	0	0	0	0		x	x	x	x	x		0	0	0	0	0	0											
Cucumbers											x	x	x	x	x	#	#	0	0	0	0	0	0	0	0	0														
Eggplant*											x	x	x	x	x	x	x	0	0	0	0	0	0	0	0	0														
Kohlrabi							x	x	x	x	x		0	0	0				x	x	x	x	0	0	0	0	0	0	0	0										
Leeks*								x	x	x	x					0	0	#	#	x	x							0	0	0	0	0	0							
Lettuce, head*								x	x	x	x	x	#	0	0	0	0		x	x	x	x	#	0	0	0	0	0												
Lettuce, baby salad								x	x	x	x	#	#	0	0	0	0			x	x	x	#	#	0	0	0	0												
Muskmelons											x	x	x	x	x	x		0	0	0	0	0	0	0	0	0														
Mustard						x	x	x	x	#	#	0	0	0	0	0			x	x	x	x	#	#	0	0	0	0	0	0										
Okra												x	x	x	x	x	x			0	0	0	0	0	0	0														
Onion (bulbing)**						x	x	x	x	x	x					0	0	0	0	0	0																			
Peas, garden						x	x	x	x			0	0	0	0	0																								
Peppers*											x	x	x	x	x	x	x	0	0	0	0	0	0	0	0	0	0													
Potatoes							x	x	x	x	x	x	x		0	0	0	0	0	0	0	0	0	0	0	0														
Pumpkins												x	x	x	x	x				0	0	0	0	0	0	0	0													
Radish						x	x	x	x	#	#	0	0	0	0					x	x	x	#	#	0	0	0	0	0											
Rutabega																		x	x	x						0	0	0	0	0	0	0	0							
Southern Pea													x	x	x	x	x			0	0	0	0	0	0	0	0													
Spinach						x	x	x	x	#	0	0	0	0	0						x	x	x	#	#	0	0	0	0	0	0	0	0	0						
Squash, summer											x	x	x	x	x	#	#	#	#	#	0	0	0	0	0	0														
Squash, winter											x	x	x	x	x	x			0	0	0	0	0	0	0	0														
Sweet Corn										x	x	x	x	x	x	x	#	0	0	0	0	0	0	0	0	0														
Sweet Potato												x	x	x	x	x							0	0	0	0														
Tomatoes*											x	x	x	x	x	x	#	0	0	0	0	0	0	0	0	0														
Turnips							x	x	x	x	x		0	0	0				x	x	x	x	0	0	0	0	0	0	0	0	0									
Watermelon												x	x	x	x	x			0	0	0	0	0	0	0	0														

x = Planting Period; 0 = Harvest Period; # = Plant and Harvest Period
* = Transplant; ** = Set or Seed; *** = Do not harvest asparagus in first year

Appendix L: Rimol quote for 22x48 NorthPoint high tunnel (09/2024)

Harry Edwards
Rimol Greenhouse Systems
40 Londonderry Turnpike
Hooksett, NH 03106
(717) 606-8021
hedwards@rimol.com

22x48 Northpoint NRCS Package

Structure – Hoops Groundposts and Bracing	
22' X 48' Northpoint frame	$3,834
Extended groundposts	$546
High Wind Area Kit	$190
*2 x 8 or wider lumber for Baseboards supplied by owner	
Roof – Double Poly Covering, Inflation, Wirelock	
40' x 100' IRAC 6-mil greenhouse poly	$643
Inflation Blower	$137
Double wirelock kit for aluminum hip boards	$400
End walls – Covering, Framing materials and Wirelock	
Metal End Wall Kit	$1,405
Woven Poly Panels for end walls	$306
End Wall Wirelock Kit	$440
Ventilation – Rollup Curtains and Gearboxes, Shutters and Controls	
Roll up sides kit	$550
Manual Gearbox operators	$350
Wind Panel Kit for 4 corners	$175
Shutters	$320
Shutter Motors	$260
Thermostat	$82
Doors	
Two 42" x 7' Single Sliding High Tunnel Doors	$1486

Subtotal	$11,141
Discount	$-850
Freight Charges	$1,700
Total	**$11,991**

Best of all, It's a Rimol!

Appendix M: Sample budget, 22x48 NP for Homesteader CSA

HIGH TUNNEL 22x48 1056 SQ FT $11,991.00 NEW COST
UTILIZATION 3' WIDE BEDS ON 5' CENTERS (4 EA 44' LONG BEDS)
GROWING SEASON MARCH – SEPT
DATA IS FROM IOWA STATE UNIVERSITY, CRAIG CHASE'S PUBLICATION "Vegetable Production Budgets for a High Tunnel" 2013, converted from 30x72 NE to 22x48 NP
CROP PRICING IS BASED ON WEEKLY REPORTS FROM http://www.vdacs.virginia.gov/markets-and-finance-market-news.shtml
*** BUDGET DOES NOT INCLUDE POST HARVEST COSTS INCLUDING TRANSPORTATION, NOR MARKETING COSTS.**

CROP	YIELD	SQ FT	$/LB	TOTAL	YIELD PSF	GROSS PSF
CUCUMBERS	244.59	195.84	$2.00	$489.18	1.25	$2.50
EGGPLANT	88.04	19.41	$3.00	$264.13	4.54	$13.61
GREENS	72.00	156.59	$8.00	$575.97	0.46	$3.68
HERBS	6.25	3.88	$16.00	$100.08	1.61	$25.78
LETTUCE	90.03	78.08	$5.00	$450.14	1.15	$5.77
PEPPERS – BELL	125.23	78.08	$3.00	$375.68	1.60	$4.81
TOMATOES – SLICERS	567.43	195.84	$4.00	$2,269.71	2.90	$11.59
TOMATOES – GRAPE	147.92	54.78	$4.50	$665.63	2.70	$12.15
TOTALS	1341.48	782.51		$5,190.51		$6.63
			$4.21			

ANNUAL EXPENSES	TOTAL
SEEDS / TRANSPLANTS	$302.60
FERTILIZERS	$516.00
MISC. SUPPLIES	$125.00
WATER	$63.36
WATER TESTS	$50.00
IRRIGATION SUPPLIES	$134.00
TOTAL ANNUAL EXPENSES	###

FERTILIZERS	RATE	PER	REQUIRED	PACKAGE SIZE	TOTAL
FERTRELL SUPER N 4-2-4	10 LBS	100' ROW	20 LBS	20 LBS	$112.75
FERTRELL #3 FOLIAR FEED 2-3-1	1 OZ.	GAL OF WATER	24 OZ	32 OZ	$30.25
FERTRELL SUPER K – AT PLANTING	10 LBS	100' ROW	20 LBS	50 LBS	$116.50
FERTRELL SUPER K – SIDE DRESS	5 LBS	100' ROW	20 LBS	50 LBS	$116.50
COMPOST	1 YARD	100' ROW	4 YARDS	YARD	$140.00
TOTAL					**$516.00**

CROP – SEEDS AND TRANSPLANTS	PLANTS PER ROW	SPACING	# OF PACKS REQ	SEED PACK	COST EA.	TOTAL
CUCUMBERS	44	12" APART, 6" BTW	1	5000 SEEDS	$23.05	$23.05
EGGPLANT	30	16" APART, 2' BTW	1	250 SEEDS	24.95	$24.95
GREENS	528	4 ROWS, 6" APART, 4" BTW	1	5000 SEEDS	$59.50	$59.50
HERBS	400 FOR 3' OF ROW	3 ROWS, 8" APART, 3 PER IN	1	50K SEEDS	$10.00	$10.00
LETTUCE	44	16" APART, 2' BTW	1	250 SEEDS	$24.95	$24.95
PEPPERS – BELL	44	24" APART, 2' BTW	1	250 SEEDS	$49.50	$49.50
TOMATOES – SLICERS	22	1 ROW, 2' BTW	1	250 SEEDS	$65.50	$65.50
TOMATOES – GRAPE	22	1 ROW, 2' BTW	1	1000 SEEDS	$45.15	$45.15
						$302.60

LABOR COSTS (MAR-SEPT)	HOURS	$ / HOUR	TOTAL
BED PREPARATION	7.33	$20.00	$146.67
GENERAL MAINTENANCE	9.92	$20.00	$198.43
PLANTING	4.53	$20.00	$90.59
PEST MANAGEMENT	0.00	$20.00	$0.00
HARVEST	21.05	$20.00	$421.02
TOTAL HOURS	42.84	$20.00	$856.71

OWNERSHIP EXPENSES	ANNUAL	COST NEW
TUNNEL (EQUIPMENT 7 YEARS)	$1,713.00	$11,991.00
DEPRECIATION – PLASTIC COVER	$128.60	$643.00
TOTAL OWNERSHIP	$1,841.60	

TOTAL GROSS EXPENSES	
EXPENSES PER TUNNEL	$3,889.27
PER SQ FT	$7.37

NET ANNUAL RETURNS	
NET INCOME PER TUNNEL	$1,301.25
PER SQ FT	$1.66
RETURN OF SELF LABOR	$856.71
RETURN PER HOUR	$50.38

Appendix N: VA Farmers Market Report (https://www.vdacs.virginia.gov/markets-and-finance-market-news-fruits-and-vegetables-virginia-retail-farmers-markets.shtml)

VIRGINIA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES
DIVISION OF MARKETING

804.786.3947
Voice Reports 800.552.5521
www.vdacs.virginia.gov/markets-and-finance-market-news.shtml

RETAIL FARMERS' MARKETS

OCTOBER 25, 2024 VOL. 32 NO. 05 ISSN 1078—6848

VIRGINIA MARKET NEWS SERVICE

Prices listed in this publication are submitted monthly by participating farmers' market managers and are subject to change.
Virginia Market News Service welcomes any city, county or state-sanctioned farmers' markets in Virginia to participate in the Retail Farmers' Market Publication. Market managers are encouraged to contact Market News at 804.786.3947 or market.news@vdacs.virginia.gov.

Virginia Market News Service is a division of the Virginia Department of Agriculture and Consumer Services. Virginia Market News Service collects and disseminates daily agriculture market prices and analyses for Virginia buyers, sellers, and the media.

Annandale Farmers Market
6621 Columbia Pike
Annandale, VA 22003
703.642.0128
Thursdays 8 a.m.-noon (May-November)
www.fairfaxcounty.gov/parks/farmersmarkets

Vegetables	
Broccoli	4.00 lb
Cabbage	4.00 head
Carrots	3.00 bunch
Cucumbers	3.00 lb
Eggplant	3.50 lb
Green Beans	6.00 qt
Greens	4.00 bunch
Lettuce	5.00 head
Mushrooms	8.00 pt
Onions	3.00 lb
Peppers (bell)	4.50 lb
Peppers (specialty)	5.00 pt
Potatoes	6.00 5 lbs
Radishes	4.00 bunch
Squash	3.00 lb
Sweet Potatoes	3.00 lb
Tomatoes	4.00 lb
Tomatoes (cherry)	5.00 pt
Fruits & Berries	
Apples	3.50 lb
Figs	8.00 pt
Raspberries	6.00 1/2 pt
Meat	
Beef	
Steaks	22.00 lb
Chicken	
Whole	7.00 lb
Thigh/Leg	8.00 lb
Breast	12.00 lb
Pork	
Ground	11.00 lb
Chops	13.00 lb
Sausage	12.00 lb
Other Cuts	15.00 lb
Other	
Cider	8.75 gal
Eggs	6.00 dz
Garlic	3.00 head
Herbs	4.00 bunch
Honey	12.00 lb

Danville Market
629 Craghead Street
Community Market Building
Danville, VA 24541
434.797.8961
Saturdays 7:30 a.m.-noon (May-Oct)
Wednesdays 1-6 p.m. (July-Aug)
www.danvilleva.gov/2197/Danville-Farmers-Market

Vegetables	
Carrots	5.00 organic bunch
Corn (sweet)	8.00 dz
Cucumbers	1.50 lb
Eggplant	1.50 each
Green Beans	3.00 lb
Greens	3.00 lb
Kale	5.00 organic qt
Lettuce	4.00 bag; 5.00 organic qt
Microgreens	7.50 organic pt
Okra	2.00 lb
Onions	3.00 lb; 5.00 organic lb
Peas	3.00 lb
Peppers (bell)	5.00 each
Peppers (specialty)	3.00 lb
Radishes	5.00 organic bunch
Squash	1.50 lb
Sweet Potatoes	1.00 lb
Tomatoes	3.00 lb
Tomatoes (cherry)	4.00 pt; 5.00 organic pt
Fruits & Berries	
Apples	1.00 lb
Honey Dews	8.00 each
Pears	1.00 lb
Watermelons	3.00 each
Meat	
Beef	
Ground	7.00-8.00 lb
Roast Cuts	7.00 lb
Steaks	16.50-17.00 lb
Chicken	
Whole	5.00 lb
Thigh/Leg	6.00 lb
Breast	10.50 lb
Lamb	
Chops	12.00 lb
Leg	12.00 lb
Pork	
Ground	8.50
Chops	12.50-18.00 lb
Sausage	10.00-10.50 lb
Other	
Eggs	4.00 dz; 5.00 organic dz
Garlic	5.00 lb
Herbs	5.00 1/2 cup
Honey	9.00 lb

Birdhouse Market
1507 Grayland Avenue
Richmond, VA 23220
804.393.9405
Tuesdays 3 to 6:30 p.m. (May-Nov)
www.birdhousefarmersmarket.org/

Vegetables	
Cabbage	2.00 organic lb-4.00-5.00 head
Carrots	4.50 organic bunch
Cucumbers	1.00 each
Eggplant	2.00 lb; 3.00-5.00 organic lb
Green Beans	4.00 qt; 5.00 organic qt-6.00 lb
Greens	4.00 bunch
Mushrooms	18.00 lb
Okra	4.00-6.00 organic qt-10.00 lb
Peppers (bell)	3.00 lb; 5.00 organic lb
Peppers (specialty)	4.00 lb; 4.00 organic pt-5.00-10.00 lb
Potatoes	2.00 lb
Radishes	3.00 organic bunch
Spinach	6.00 organic 1/2 lb
Squash	2.00 lb; 3.50 organic lb
Sweet Potatoes	3.00 organic lb
Tomatoes	3.00 lb; 3.50-4.00 organic lb
Tomatoes (cherry)	5.00 organic pt-8.00 qt
Turnips	4.00 organic bunch
Fruits & Berries	
Apples	3.50 lb
Blackberries	7.00 pt
Cantaloupes	4.00 each
Grapes	7.00 qt
Peaches	3.50 lb
Plums	7.00 pt; 3.00 organic lb
Raspberries	7.00 1/2 pt
Watermelons	5.00-8.00 each; 4.00-8.00 organic each
Meat	
Beef	
Ground	11.50 lb
Steaks	16.00-26.00 lb
Chicken	
Whole	4.00-6.00 lb
Thigh/Leg	6.50 lb
Breast	14.50 lb
Lamb	
Ground	16.00 lb
Chops	24.00 lb
Leg	16.00 lb
Pork	
Ground	11.00 lb
Chops	13.00-15.50 lb
Sausage	10.00-10.50 lb
Other	
Garlic	1.00-3.00 head
Herbs	2.50-3.00 organic bunch
Honey	13.50 lb
Pumpkins (m)	8.00 each
Pumpkins (l)	12.00 each

VIRGINIA GROWN

Central Virginia Produce Auction **October 15, 2024**

18440 E James Anderson Hwy, Dillwyn, VA 23926

434.394.3940

Sales on Tuesdays and Fridays 10:00 AM

Data compiled by Central Virginia Produce Auction

Other commodities are available but not included in this report

	Volume	Prices Low	Prices High	Prices Average
Vegetables				
Beans-Green (1/2 bushel)	42	16.00	20.00	18.05
Brocolli (head)	285	1.45	1.75	1.56
Cabbage (head)	147	1.35	1.75	1.45
Greens-Collards (bunch)	24	1.00	1.00	1.00
Squash-Butternut/Spaghetti (each)	132	1.40	1.50	1.44
Squash-Winter (1/2 bushel)	11	7.50	15.00	9.55
Sweet Potatoes (1/2 bushel)	10	10.00	19.00	13.60
Tomatoes-Canner (25 lbs)	10	11.00	21.00	13.00
Tomatoes-Heirloom (10 lbs)	6	12.00	18.00	15.00
Tomatoes-Medium (10 lbs)	5	15.00	15.00	15.00
Tomatoes-Small/Canner (10 lbs)	30	13.00	25.00	17.64
Fruits, Berries & Melons				
Apples (bushel)	30	9.00	18.00	12.44
Other				
Eggs (dozen)	177	2.25	3.00	2.90
Gourds (1/2 bushel)	49	4.50	13.00	7.78
Pumpkins (each)	128	3.25	8.00	4.60
Pumpkins-Pie Type (each)	50	1.50	1.50	1.50
Pumpkins-Specialty Mix (each)	88	1.75	4.25	2.66

Southside Produce Auction **September 27, 2024**

137 Vincent Store Road, Charlotte Court House, VA 23923

Sales on Tuesdays and Fridays 10:00 AM

Data compiled by Southside Produce Auction LLC

Other commodities are available but not included in this report

	Volume	Prices Low	Prices High	Prices Average
Vegetables				
Beans-Green (1/2 bushel)	6	10.00	31.00	17.00
Cucumbers-Picklers (1/2 bushel)	23	5.00	11.00	7.87
Peppers (1/2 bushel)	15	2.00	8.00	6.40
Squash-Acorn (1/2 bushel)	14	8.00	10.00	9.00
Squash-Butternut (bushel)	14	5.00	9.00	5.86
Squash-Yellow (1/2 bushel)	5	9.00	10.00	9.50
Sweet Potatoes (1/2 bushel)	5	10.00	10.00	10.00
Tomatoes-Cherry (pint)	6	1.75	1.75	1.75
Tomatoes-Misc (10 lbs)	18	7.00	12.00	9.17
Other				
Gourds (each)	228	0.25	1.00	0.52
Indian Corn (bunch)	10	2.25	2.25	2.25
Pumpkins (each)	1683	1.00	6.50	2.10

Appendix O: Regulation Organizations and Local Farm Support Agency Contacts

Virginia:

Organization	Contact	Purpose
Virginia Cooperative Extension (VCE)	ext.vsu.edu	Offers educational resources and assistance in agricultural practices and regulations.
Virginia Department of Agriculture and Consumer Services (VDACS)	vdacs.virginia.gov/	Provides regulatory guidance, marketing services, and agricultural development support.
Virginia Farm Bureau (VAFB)	vafb.com	Offers insurance services, advocacy, and agricultural education.
Virginia Association for Biological Farming	vabf.org	Supports organic and biological farming practices through education and advocacy.

West Virginia:

Organization	Contact	Purpose
West Virginia University (WVU) Extension	extension.wvu.edu	Provides support and resources for agricultural education and practices.
West Virginia State University (WVSU) Extension	vstateu.edu	Offers various agricultural, educational, and community support services.
West Virginia Farmers Market Association	wvfarmers.org	Supports and promotes the interests of farmers markets across the state.
West Virginia Department of Agriculture (WVDA)	agriculture.wv.gov	Manages agricultural policy, marketing, and development within the state.
West Virginia Food & Farm Coalition	wvfoodandfarm.org	Works on strengthening the food and farm landscape in West Virginia.

Regional and National Organizations:

Organization	Contact	Purpose
Appalachian Sustainable Agriculture Project (ASAP)	asapconnections.org	Focuses on local food networks and sustainable agriculture practices.
National Young Farmers Coalition (NYFC)	youngfarmers.org	Supports young and beginning farmers with resources, advocacy, and networking opportunities.
Rodale Institute	Rodaleinstitute.org	Technical Organic crop consultants for commercial growers.

Permitting and Licensing

Organization	Purpose
Local Township Offices, EPA, Health Departments	Manage local zoning, environmental, and health-related permits and licenses required for farm operations.