

Workshop 2

Planning and Planting



Instructor Guide

Lesson Overview

1. Introducing the concepts of:
 - a. Timely planning
 - b. Planning for your North Texas Garden
 - c. Raised Beds
 - d. Soil preparation before planting
 - e. Seeds vs. Seedlings (transplants)
 - f. Importance of proper spacing for a square-foot garden
2. Equipping the participants with materials and knowledge necessary to plant according to square-foot garden methods.

Learning Objectives

At the end of Workshop 2: Planning and Planting, participants will be able to

- Utilize planting guide to determine which vegetables to plant each season
- Identify varieties of crops to plant in North Texas
- Amend soil for planting
- Identify which seeds grow best when planted directly into the ground vs transplanting seedlings.
- Build and maintain a square-foot garden using proper spacing within the bed

Learner Outcomes for Activities:

1. At the end of the workshop, participants will be able to determine which plants flourish in North Texas area during the each season.
2. At the end of the soil working and square-foot spacing activity, participants will be able to prepare soil for planting and plan spacing to promote growth.

Before Workshop Begins

- Read through entire workshop to understand activities and learning objectives before participants arrive.
- Assemble folder for participants
 - Seasonal/regional worksheet
 - Seasonal planting guide
 - Regional planting guide

- Handout: What plants grow best in your garden by direct seeding and what grows best by starting indoors/purchasing seedlings.
- Square-foot garden template
- Assemble materials for construction of square-foot garden
 - Wood, drill, washers and screws, tape measure (Alternative is using 36 cement blocks)

Workshop Outline

Time	Lesson Component	Key Messages & Discussion	Instructor
10	Introduction	Introduce instructors, talk about the importance and benefit of planning and planting a garden.	
20	Lesson Content	<p>Discuss timely planting of vegetables.</p> <p>Discuss planting for North Texas, for example plants that grow best in North Texas.</p> <p>Discuss and review soil preparation before planting.</p> <p>Discuss and show seeds vs. seedlings (transplants)</p> <p>Discuss importance of proper spacing for a square-foot garden</p>	
50	Activity	Instructor will review handouts and discuss the plants that grow in North Texas. Students will practice planning and planting a square foot garden as a group then each do a design for their own 4x10 bed and present to the class.	
10	Evaluation	Instructor will ask pertinent questions to participants on the basic concepts and techniques that were taught.	
10	Conclusion	<p>Participants will leave with a general knowledge of:</p> <p>Proper planning and planting a garden, maintenance, and the difference between seeds and seedlings.</p>	

Introductions (10 minutes)

- Welcome participants. Provide an overview of the class, including the length and content of the course and requirements.
- Introduce the volunteer instructors.
 - Introduce yourself briefly. Turn attention to learning about class participants and have them introduce themselves.
 - Encourage discussion and sharing.
 - **ASK: Have all participants share their favorite vegetables that they would like to learn to plant.**

Teaching Tip: If participants seem reluctant to share, suggest what vegetables you enjoy eating fresh from a garden.

Part A: Timely planting

- Growing your own plants may be the best way to obtain the varieties of vegetable that you like best.
- **ASK: Why is timely planting important?**
 - Ensures proper growth and development of plants
 - Allows time for the plant to mature, before “hot” season
 - Planting seedlings gives you a head start on the growing season
 - Staggered planting allows for successive harvesting and a constant flow of ripe produce
- For a sustained harvest, plant a little bit of a particular produce plant every two weeks during the planting season. This process will allow for a continual supply during harvesting.
- Study Vegetable Varieties for North Central Texas Handout
 - Discuss what vegetables fit into the class schedule, and what the class would like to plant this season

Vegetable Varieties for North Central Texas Handout

- = start seeds inside to grow seedlings (transplants)
- = plant seeds for cold hardy crops directly in the ground
- = plant cold hardy seedlings outside
- = plant seeds for warm weather crops directly in ground
- = plant warm weather seedlings outside

Crop <small>(days to germination, days to harvest from seeding)</small>	February	March	April	May	June	July	August
Beans, Lima (7-12, 70-100)							
Bean, Snap (7-10, 50-60)							
Beets (5-8, 50-70)							
Broccoli (5, 55-65)							
Brussels sprouts (5-8, 80-100)							
Cabbage (5, 70-100)							
Cabbage, Chinese (7, 70-100)							
Cantaloupes (3-5, 100-128)							
Carrots (6, 65-75)							
Cauliflower (6, 85-120)							
Chard (5-7, 50-70)							
Collards (5-7, 50-60)							
Cucumbers (3-4, 50-65)							
Eggplants (7, 110-150)							
Endive (5-7, 40-50)							
Garlic (250-270)*							
Kale (5-7, 50-60)							

Crop <small>(days to germination, days to harvest from seeding)</small>	February	March	April	May	June	July	August
Kohlrabi (5-7, 40-45)							
Leeks (5-7, 70-120)							
Lettuce, Head (7-14, 40-80)							
Lettuce, Leaf (7-14, 40-80)							
Lettuce, Romaine (7-14, 40-80)							
Mustards (4-6, 40-45)							
Okra (5-14, 50-60)							
Onions (4-5, 85-120)							
Parsley (14-28, 70-90)							
Parsnips (14-21, 110-120)							
Peas (14, 50-70)							
Peas, Black-eye (7-10, 60-90)							
Peppers (6-8, 110-155)							
Potatoes (90-120)							
Pumpkins (6-10, 70-90)							
Radishes (4-12, 25-35)							
Rutabagas (3-5, 90-95)							
Salsify (10-20, 100-120)							
Shallots (5-7, 80-100)							
Soybeans (7-10, 100-110)							
Spinach (7-14, 37-55)							
Squash, Summer (6-10, 45-55)							
Squash, Winter (6-10, 70-90)							
Sweet Corn (4, 63-100)							
Sweet Potatoes (90-120)							
Tomatoes (6-8, 90-130)							
Turnips (2-5, 40-50)							
Watermelon (7-14, 100-128)							

Part B: Planting for North Texas

- **ASK: What plants do you know of that grow best in North Texas?**
- Planting for the Central North Texas region is different than planting for any other region. Texas is known to have serious heat waves with temperatures above 100°F and staying above 80°F.
- For fall planting, the plants will show greater harvest if they are in the ground long before the first chill. Once they are ready to germinate and flower, they are already mature enough to withstand the cold temperatures.

Money Saving Tip: In the long run, preparing seedlings from your own seeds could be a more cost effective way to grow the vegetables that you want!

Purchasing seedlings from a store could be more expensive, but some of the work has been done for you.

A complete list of “Vegetable Varieties for North Central Texas” is available from the Agri-life Extension Office. Just call 817-884-1944

- To name a few, North Central Texas has particular varieties that thrive in the environment. Look for these at your local plant and seed store!

Handouts: Planting Guide (REAL School Gardens), Vegetable Varieties in North Texas

Part C: Soil preparation before planting

Ask: What are things we can do to best prepare our soil?

- Work up your soil with hands/garden fork/shovel
- Enrich the soil with amendments from your compost pile or other sources

Enriching the Soil

Ask: Have you learned about compost and good soil?

- If this group has learned compost and soil enrichment, review the things that go into compost (green, brown, and water) and those that do not belong in compost. Also review why compost is important (that it can be done with materials and waste from home, that it allows nutrients to help plants grow better and faster)
- If participants have not learned compost and soil enrichment, introduce these concepts briefly and let them know that participants will learn more on this later.

- Adding organic material like composted horse, chicken or rabbit manure to your beds and mulching with things like leaves add organic material and nutrients to your garden each season, continually improving the soil so you get higher vegetable yield!

Money Saving Tip: Composting waste materials from home, such as leaves, fruit and vegetables peels/seeds/skins for compost can save money on purchasing amendments. Even waste from future garden plants can go into the next year's compost material. Mulching after the vegetable plants are growing or in the fall with wood chips will help conserve water, maintain the temperature and add Organic Matter over time

Part D: Seeds vs. Seedlings

Now that we've learned how to prepare your bed, let's discuss how to plant your garden!

Ask: Does anyone know the difference between a seed and a seedling?

Start Seeds in Jan/Feb, so they can be transplanted in late March or early April. Many plants will not set fruit after the temperature is over 93 degrees. Conversely tomato plants can be transplanted at a minimum of 55 degrees F, but growth will be slow. Use a rule of thumb of a night air temperature minimum of 55 degrees F. By then, the days are a lot warmer and the soil is warmer than the coolest night air. Below 55 degrees the roots are unable to absorb the nutrients needed for plant growth.

- Show examples of seeds and seedlings to allow a visual observation for the participants. Pass them around and invite the participants to identify noticeable differences.
- Go over learning how to read the back of seed packet to develop awareness about each plant's needs: sunlight, spacing, temperature/time of year to plant.
- Each participant gets a seed packet and identifies when and how seeds will be planted and shares with the group.
 - Be sure to look at planting time/temp, planting depth, special requirements, height at growth, etc.
- Go over the plant's needs together, sharing differences and ideas about what this means in terms of placement of plant varieties in your garden.
 - For example, you may plant something tall that needs more light, such as sunflowers or okra, toward the Western exposure so they can absorb what they need and shield more delicate crops from the harsh rays that aren't ideal for their growth.

- Another example is choosing to plant root crops next to tall or vining plants. This way you can plant more intensively in one area whereas if you planted carrots, beets, and onions in one area, you would have less/sq foot because they all require fruit space under ground.
- Plant indoors 5-6 weeks prior to transplanting outdoors. This gives you a jump on the season by allowing you to control that ideal growing temperature you read on the back of the seed packet.
- 3 important things to note:
 1. Seeds are just seeds while seedlings are seeds that have just sprouted and grown to several inches high indoors before the outdoor growing season starts.
 2. Planting from seed takes longer for maturation compared to starting with seedlings.
 3. Seeds are far less expensive than seedlings. (You pay to have the plant started & nurtured for you.)

Handout: List of Seeds vs. Seedling Part

How to Plant:

When you begin to design your garden, it's important to remember that specific plants have specific needs as we discussed earlier. One need we discussed is space.



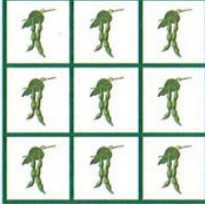
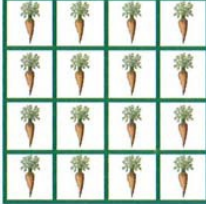






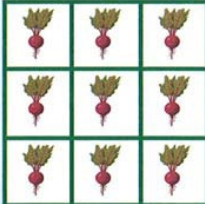
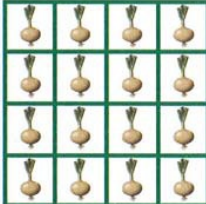
Different plants require different amounts of room to grow based on water and nutrient needs.

Handout: Importance of proper spacing for a square-foot garden

Ask: What do you think is the importance of proper spacing for square foot garden?

- Most importantly: It allows each plant the ideal space it needs to grow and maximizes garden space so you get the highest yield possible!
- Looks neat & tidy
- Establishes limits for plant growth
- Grids = formula for success
- Simplifies garden chores
- Holds special soil mix above ground
- No compaction, erosion, or puddles
- Less maintenance in less space

PLANT SPACING

Extra Large 1 Plant Placed 12 inches apart:	Large 4 Plants Placed 6 inches apart:	Medium 9 Plants Placed 4 inches apart:	Small 16 Plants Placed 3 inches apart:
Broccoli 	Leaf Lettuce 	Bush Bean 	Carrot 
Cabbage 	Swiss Chard 	Spinach 	Radish 
Pepper 	Marigold 	Beet 	Onion 

Number of Plants per Square Foot

Vegetables:

- Asparagus: 1
- Bean, Bush: 9
- Bean, Pole: 8
- Beet, Large: 9
- Beet, Small: 16
- Broccoli: 1
- Cabbage: 1
- Carrot: 16
- Cauliflower: 1
- Chard, Swiss: 4
- Corn: 4
- Cucumber: 2
- Eggplant: 1
- Lettuce: 4
- Melon: 1 per 2 sf
- Okra: 1
- Onion: 16
- Pea, Sugar Snap: 8
- Pepper: 1
- Potato: 4
- Radish: 16
- Spinach: 9
- Strawberry: 4
- Summer Squash (bush): 1 per 9 sf

Vegetables (continued)

- Summer Squash (vine): 1 per 2 sf
- Winter Squash: 1 per 2 sf
- Tomato (bush): 1 per 9 sf
- Tomato (vine): 1

Flowers:

- Dahlia (small): 4
- Dahlia (medium): 1
- Dusty Miller: 4
- Marigold (dwarf): 4
- Marigold (large): 1
- Pansy: 4
- Petunia: 4
- Salvia: 4

Herbs:

- Basil (small): 4
- Basil (large): 1
- Chives: 16
- Cilantro: 1
- Mint: 1
- Oregano: 1
- Parsley: 4

Part F: Activities

Handout Review

- Seasonal/regional (North Central Texas) worksheet
- Seasonal planting guide
- North Central Texas planting guide
- What plants grow best by direct seeding and what plants grow best by starting indoors/purchasing seedlings

Square-Foot Garden Planting

Activity: Design Your Garden Bed

- **Activity 1:** Design a 4x4 raised bed planting as a class using the information from the planting guide and seed packet to determine time of planting, plant spacing, plant placement according to estimated plant height and water needs etc., and a succession plan (optional.)
- **Activity 2:** Have students do a design for their own garden bed. Limit to a 4x4 space due to time constraints. Have them present their designs and rationale to the class.

Activity: Plant a Square-Foot Garden

- Practice actually planting the bed you designed as a class. While planting, discuss the rationale of crop placement and plant spacing again as a group, having students provide the discussion for the decisions made for this activity.
- Divide the square into 16 one-foot sections, using string or small strips of board. (If you have pre-drilled square foot garden templates, use these instead.)
- Plant one kind of vegetable in each of the 16 squares, based on design.

Remember: Refer to your square foot gardening spacing guide!

Part G: Evaluation

- Ask participants topic-specific questions to evaluate their understanding of the lesson. (In workshop 1, specific questions were listed)
- Make sure participants know where to go for other resources regarding class material and information.

Part H: Conclusion

- Summarize key points:

- Timely planting
- Planting for North Central Texas
- Soil preparation before planting
- Seeds vs. Seedlings
- Importance of proper spacing for a square-foot garden
- Answer any questions-Remember to refer advanced topics to the following training dates.
- Hand out evaluation piece

Planting Seeds vs. Seedlings

Some seeds germinate much more effectively when planted directly in the garden soil outside. They are prone to shock and weakening when transplanted so starting them in pots indoors can actually decrease your yield.

Vegetables Best to Direct Seed:

- Carrots
- Beets
- Lettuces
- Spinach
- Cucumbers
- Squash
- Beans
- Peas
- Corn
- Turnips
- Potatoes
- Melon
- Sunflowers
- Okra

Some seeds are difficult to germinate directly in the soil. They are very sensitive to cold and disease and need intensive care and a jumpstart on the season to obtain their highest yield. These are best to start indoors or buy as seedlings from your local nursery.

Vegetables Best to Plant as a Seedling:

- Tomatoes
- Peppers
- Eggplant
- Broccoli
- Cauliflower
- Cabbage
- Artichoke
- Herbs
- Swiss Chard
- Fruit Trees

Optional Activity: Building a Raised Square Foot Garden Bed**Activity: *Build a Square-Foot Garden***

- Lead the group to build a square foot garden and implement proper spacing for each seed.

Supplies:Materials:

- 36 Cement Blocks or
- wood (two 16' 2x10 boards, two 8' 2x10 boards)
- 16 corner brackets
- wood stain
- screws
- miscellaneous parts
- weed mat
- kite string
- 1 bale peat moss

- 1 bag perlite
- 3 bags chicken compost
- 1 bags steer compost
- 6 gallon bucket of coffee grounds

Tools and Equipment:

- electric drill
- scissors
- shovel
- gloves
- paintbrush

Building the Garden:

- To build a square foot garden, you will need some 2x6 or 2x8 boards.
- Cut the boards, and nail them together to form a four-foot square.
- Remove existing grass from square foot garden area. Aerate soil with garden fork and place frame over it. Fill with listed soil amendment ingredients and mix with existing, native soil.
- Divide the square into 16 one-foot section, using string or small strips of board.
- Plant one kind of vegetable in each of the 16 squares.
- Some medium-sized vegetables should be planted one per square.
- Others, such as green beans, can be planted four per square.
- Carrots and onions can be planted 9 or 12 per square.

Acknowledgments:

Lance Jepson (Tarrant County Master Gardener) and Katey Rudd (Community Gardens Coordinator, Tarrant Area Food Bank) co-authored this backyard gardening curriculum. Members of the Tarrant County Food Policy Council's Community Gardens & Urban Agriculture Working Group contributed developmental editing on multiple drafts.

Caryn Hutchinson and Mike Warren (both Tarrant County Master Gardeners) summarized each lesson plan. Marty Otero (Texas Hunger Initiative) translated these lesson plan summaries into Spanish.

The following organizations contributed handouts or otherwise assisted in the preparation of this curriculum: Botanical Research Institute of Texas (www.brit.org), Feed by Grace (www.feedbygrace.org), Northside Inter-Community Agency (www.nicaagency.org), REAL School Gardens (www.realschoolgardens.org), Tarrant Area Food Bank (www.tafb.org), Tarrant County Food Policy Council (www.tarrantcountyfoodpolicycouncil.org), Tarrant County Master Gardener Association (tarrantmg.org), Texas Agrilife Extension (agrilifeextension.tamu.edu), Texas Christian University (www.tcu.edu), Texas Hunger Initiative (www.baylor.edu/texashunger), and University of Nevada Cooperative Extension (www.unce.unr.edu).

Disclaimer of Liability:

This curriculum is intended solely for informational purposes. Instructors and students use it at their own risk. None of the individuals or organizations named above bear any liability, financial or personal (or otherwise), for injuries, property damage, or other perceived harms that occur during the use of this curriculum.

Backyard Gardening, Lesson 2: Planning and Planting

1. **What is timely planting?** Plant at the time for the specific vegetable to grow and mature in the correct season. See handout papers for each vegetable you plan to plant. Example: tomatoes and peppers and squash like warm weather to grow, but carrots, cilantro and lettuce like cool weather to grow.
2. **When are the frosts?** Be conscious of the last frost of the winter, usually about March 15, and the first frost of the winter, usually about Nov. 21. Only cool season vegetables may be planted before the last frost date. Warm season vegetables are planted after the last frost date.
3. **What are our planting seasons?**
 - a. We have a cool season planting time in the spring, and in the fall: February 11-15, and September 10-21.
 - b. We have a warm season planting time in spring: March 18-29.
4. **What are the cool season vegetables?** See Vegetable Planting Schedule (Real School Gardens) or see Marshall Grain Planting Guide. If you are planting a cool season vegetable in the fall, notice the time to harvest and count backwards on the calendar. Example: carrots need 70-80 days to harvest (maturity). If the carrots do not have enough time to mature, eat them as baby carrots.
5. **What are the warm season vegetables?** See Vegetable Planting Schedule (Real School Gardens) or see Marshall Grain Planting Guide.
6. **What about the soil?** Remember to prepare the soil with compost and manure BEFORE planting.
7. **Where do we situate the garden?** Remember we need 6-8 hours of sun a day to grow the vegetables. Observe where the sun shines and where there is shade. Plan your garden for the sun area. Next, remember that we need water for those plants, 1 inch per week. Be sure you have the sun, prepared soil and the water for the garden.
8. **What do we plant?** Seeds or Seedlings (young plants): Plant seedlings or transplants of tomato, pepper, broccoli, cabbage, eggplant, cauliflower. Plant seeds directly in the soil of most other vegetables.
9. **What depth do you plant?** See the seed packet for directions. A very small seed like carrots or lettuce may be easier to plant when seed is mixed with used coffee grounds to disperse the seeds better.
10. **What spacing between plants?** See Marshall Grain Planting Guide or see the Square Foot Garden pictures. The spacing/distance between the plants allows the room for the roots to grow, and for the plant to grow. Example: Carrots grow only 1 foot tall, but tomatoes grow 4-5 feet tall, like a bush. See Plant Spacing handout.

11. In square foot gardening in box beds, some plants are small and you can plant two or more in one square foot. Example: radishes or onions can be planted 16 in one square foot, but a broccoli needs the entire square foot alone. See Plant Spacing sheet.
12. Square Foot Box Beds are easier to weed, to water. Note the position of the sun so that you plant tall plants toward the west. The tall plants give protection to the other plants.
13. Read seed packets for growing information. Burpee Seeds and Ferry Morse Seeds (Home Depot and Lowe's) have bilingual information on the packets. They tell season to plant, planting depth, plant distance, days to harvest.
14. See Vegetable Varieties for North Central Texas from Agri-life Extension (Handout) for the varieties that are known to do well in this area. But you can also experiment—seed is inexpensive.

Trabajando en el Jardín: Unidad Dos Resumen –

Planificación y Siembra

1. **¿Cuándo es el mejor tiempo para plantar?** Siembre las semillas durante el tiempo indicado para que la planta crezca bien y saludable. Revise las fechas indicadas en las lista que recibió. Por ejemplo: A los tomates, los pimientos y calabazas les gusta el clima cálido para crecer, pero a las zanahorias, cilantro y lechuga les gusta el clima frío para crecer.

2. **¿Cuándo son las heladas?** Sea consciente de la última helada del invierno, por lo general alrededor del 15 de marzo y la primera helada del invierno, por lo general alrededor del 21 de noviembre. Sólo las verduras de clima fresco pueden ser plantadas antes de la última helada. Verduras de temporada cálida se plantan después de la última helada.

3. **¿Cuáles son nuestras temporadas de siembra?**

- Nosotros tenemos una temporada para plantar en la primavera y una en el otoño. Febrero 11-15 y Septiembre 10-21.
- Tenemos una temporada poco cálida para sembrar que es del 18 a 29 marzo?

4. **¿Cuáles son las verduras para la temporada fresca?** Vea la Lista de Cultivo de Hortalizas (**Real School Gardens**) o consulte la Guía de Plantación de Marshall Grain. Si usted está sembrando un vegetal de temporada fresca en el otoño, observe el tiempo para cosechar y contar hacia atrás en el calendario. Ejemplo: las zanahorias necesitan 70-80 días para cosechar (madurez). Si las zanahorias no tienen suficiente tiempo para madurar, cómaselas pequeñas.

5. **¿Cuáles son las verduras de temporada cálida?** Vea la Lista de Cultivo de Hortalizas (**Real School Gardens**) o consulte la Guía de Plantación de Marshall Grain.

6. **¿Qué pasa con la tierra?** Recuerde que debe preparar la tierra con abono antes de sembrar.

7. **¿Dónde ponemos el jardín?** Recuerde que necesitamos de 6 a 8 horas de sol al día para crecer las verduras. Observe donde el sol brilla y donde hay sombra. Planifique su jardín para el área de sol. A continuación, recuerde que necesitamos agua para esas plantas, 1 pulgada por semana. Asegúrese de que tienen el sol, la tierra está preparada y tiene agua para el jardín.

8. **¿Qué plantamos?** Semillas o plantas chicas (plantas jóvenes): trasplantes de tomate, pimiento, brócoli, repollo, berenjena, coliflor. Plante semillas directamente en la tierra.

9. **¿A qué profundidad sembramos?** Vea las instrucciones en el paquete de semillas para las direcciones. Una semilla muy pequeña, como las zanahorias o lechuga puede ser más fácil de plantar cuando la semilla se mezcla con café molido para dispersar mejor las semillas.

10. **¿Qué espacio dejamos entre las plantas?** Consulte el Guía de Plantación de Marshall Grain o vea las fotografías sobre como sembrar por pie cuadrado. El espacio / distancia entre las plantas le permite a las raíces de las plantas que tengan espacio para crecer. Ejemplo: Las zanahorias crecen sólo 1 pie de alto, pero los tomates crecen 4-5 pies de altura, como un arbusto. Vea la hoja de distancia entre plantas.

11. Usando el plan de pie cuadrado, algunas plantas son chicas y se pueden plantar más, Ejemplo: rábanos o cebollas se pueden plantar 16 en un pie cuadrado, pero un brócoli necesita todo el pie cuadrado solo. Vea la hoja de distancia entre plantas.

12. El sistema de "Square Foot Box" es más fácil de mantener, y regar. Tome en cuenta el sol para que plante las plantas altas hacia el oeste. Las plantas altas le dan protección a las demás plantas.

13. Lea los paquetes de semillas para la información sobre cuando cultivar. Las semillas Burpee y Ferry Morse (Home Depot y Lowe) tienen información bilingüe en los paquetes. Le dicen la temporada para plantar, la profundidad para sembrar, distancia entre las plantas, y días para cosechar.

14. Vea la lista de Variedades de Vegetales para el Norte Central de Texas disponible a través del Servicio de Extensión Agro-vida (Volante). Este indica las variedades que crecen bien en esta área. Pero también se puede experimentar – las semillas son muy baratas.

Workshop 2: Special Considerations for Crop Rotation

Heavy Feeders need lots of soil nutrients. Add extra manure in the planting hole.

Heavy Feeders: celery, melons, tomatoes, corn, peppers, cucumbers, pumpkins, eggplant, squash.

Moderate Feeders: broccoli, chinese cabbage, spinach, brussels sprouts, kale, swiss chard, cabbage, lettuce, cauliflower, parsley, lettuce.

Light Feeders (not demanding): beets, onions, carrots, potatoes, garlic, radishes, leeks, turnips

Do not plant the same vegetable in the same place every year. Rotate vegetables each year.

Special Considerations for Planting Times

Origin of our vegetables, grains, fruits:

- Ethiopia—coffee, okra, onions, wheat
- Afghanistan, Turkestan—cantaloupe, carrots, chick peas (garbanzos), grapes, peas, spinach, turnips, wheat
- Mediterranean—asparagus, beets, cabbage, lettuce, oats, wheat, parsley
- Asia Minor—barley, cabbage, carrots, lentils, oats, peas, rye, wheat
- United States—blueberries, cranberries, sunflowers
- Mexico, Guatemala—amaranth, beans, cashews, corn, red pepper, squash, tomatoes
- Peru, Ecuador, Bolivia—beans, potatoes, squash, tomatoes, peppers
- China—adzuki beans, Chinese cabbage, radishes, soybeans
- India, Burma—cucumbers, eggplant, lemons, oranges, black pepper, rice, sugar cane
- Thailand, Java—bananas, coconut, grapefruit, sugar cane
- Southern Chile—potatoes, strawberries
- Greece—oregano
- Sicily--Chard
- Brazil, Paraguay—cacao, cashews, peanuts, pineapples

What climate does it like? We cannot grow cashews, cranberries or bananas in Texas, but if we plant at the *right time* for the vegetable, we can grow many things.

Cool Weather Vegetables, Late Winter, Late Fall (Plant outside in cool weather, before frost): Peas, lettuce, cilantro, radishes, potatoes, cabbage, broccoli, Brussels sprouts, Chinese cabbage, swiss chard, beets, carrots, spinach, onions, cauliflower, asparagus, strawberries, parsley, garlic, turnips, leeks, kale, bok choy

Warm Weather Vegetables: (Plant outside after last spring frost): Tomatoes, peppers, okra, melons/cantaloupes, beans, corn, cucumbers, squash, tomatillos, black eyed peas, eggplant, basil, oregano, dill, thyme, rosemary, pumpkin, strawberries, sweet potatoes

Special Considerations for Seed Storage:

Store Seed in constant cool, dry, dark conditions in paper packages. Put the paper packages inside glass jars or plastic boxes. Heat kills the seed, water makes the seed germinate.

Seed Life data below from Texas A & M, Aggie Horticulture.

Asparagus: 3yrs

Beet: 4 yrs

Bean, Lima: 3 yrs

Bean, Snap: 3 yrs

Bean, Fava: 3yrs

Broccoli: 5 yrs

Brussels Sprouts: 4 yrs

Carrot: 3 yrs

Cabbage: 5 yrs

Cantaloupe: 5 yrs

Cauliflower: 4 yrs

Celery: 5 yrs

Chard, Swiss: 4 yrs

Chinese Cabbage: 5 yrs

Collards: 5 yrs

Cowpea: 3 yrs

Cucumber: 5 yrs

Eggplant: 5 yrs

Kale: 5 yrs

Kohlrabi: 5 yrs

Lettuce: 5 yrs

Muskmelon: 5 yrs

Mustard: 4 yrs

Unidad dos: Consideraciones especiales para la rotación de cultivos

Plantas que consumen mucho fertilizante necesitan muchos nutrientes en la tierra. Le puede añadir extra estiércol en el hoyo cuando plante la mata.

Plantas que consumen mucho fertilizante: el apio, melones, tomates, maíz, pimientos, pepinos, calabazas, berenjenas, calabaza.

Plantas que consumen un poco menos de fertilizante: brócoli, col china, espinacas, coles de Bruselas, col rizada, acelga, col, lechuga, coliflor, perejil, lechuga.

Plantas que se alimentan del sol: remolachas, cebollas, zanahorias, patatas, ajos, rábanos, puerros, nabos

No siembre la misma verdura en el mismo lugar todos los años. Alterne los vegetales cada año.

Consideraciones especiales para saber cuándo plantar

El origen de nuestros vegetales, granos, frutas:

- Ethiopia - café, okra, cebollas, trigo
- Afganistán, Turquestán - melón, zanahorias, garbanzos, uvas, chicharos espinacas, nabos, trigo
- Mediterráneo - espárragos, remolacha, repollo, lechuga, avena, trigo, perejil
- Asia Menor - cebada, col, zanahorias, lentejas, avena, chicharos, el centeno, el trigo
- Estados Unidos – blueberries, cranberries, los girasoles
- México, Guatemala - amaranto, frijoles, nueces, maíz, pimienta roja, calabaza, tomates
- Perú, Ecuador, Bolivia - frijol, papa, calabaza, tomates, pimientos
- China – frijoles adzuki, col china, rábano, soja
- India, Birmania - pepinos, berenjenas, los limones, las naranjas, pimienta negro, el arroz, la caña de azúcar
- Tailandia, Java - plátanos, coco, toronja, caña de azúcar
- Sur de Chile - papas, fresas
- Grecia - orégano
- Sicilia - Chard
- Brasil, Paraguay - cacao, anacardos, cacahuetes, piñas

¿Qué clima le gusta? No podemos crecer anacardos, arándanos o bananas en Texas, pero si plantamos las verduras al tiempo apropiado podemos plantar muchas cosas.

Verduras de clima fresco, Invierno, y Otoño (Plante afuera durante el clima fresco, antes de las heladas): chicharos, lechuga, cilantro, rábanos, papas, repollo, brócoli, coles de Bruselas, col china, acelga, remolacha, zanahorias, espinacas, cebollas, coliflor, espárragos, fresas, perejil, ajo, nabos, puerros, col rizada, y bok choy

Verduras de clima cálido: (Plántelas afuera después de la última helada): tomates, pimientos, okra, melones / melones, frijoles, maíz, pepino, calabaza, tomatillos, chicharos de ojo negro, berenjena, albahaca, orégano, eneldo, tomillo, romero, calabaza, fresas, patatas dulces

Consideraciones especiales para el almacenamiento de semillas

Guarde las semillas en un lugar fresco, seco y oscuro y en bolsas de papel. Ponga las bolsas dentro de frascos de vidrio o cajas de plástico. El calor mata las semillas y el agua hace que las semillas comiencen a crecer.

Datos sobre la vida de la semilla, del departamento de Texas A & M, Aggie Horticulture.

Espárragos: 3 años

Remolacha: 4 años

Bean, Lima: 3 años, Bean, Snap: 3 años, Bean, Fava: 3 años

Brócoli: 5 años

Coles de Bruselas: 4 años

Zanahoria: 3 años

Repollo: 5 años

Melón: 5 años

Coliflor: 4 años

Apio: 5 años

Chard, suizos: 4 años

Col china: 5 años

Berzas: 5 años

Caupí: 3 años

Pepino: 5 años

Berenjena: 5 años

Kale: 5 años

Colinabo: 5 años

Lechuga: 5 años

Melón: 5 años

Mostaza: 4 años

Vegetable Planting Schedule

September

Cool Season Fall

Plant September 10-21

- Cabbage transplants
- Broccoli transplants
- Garlic pods

Seeds

- Beets
- Carrot
- Cilantro
- Collard
- Lettuce
- Parsley
- Pea
- Spinach
- Swiss Chard
- Radish
- Turnip

February

Cool Season Early Spring

Turn and fertilize beds

Plant February 11-15

- 40 lb. bag of organic fertilizer
- Onion plants
- Potato seed pieces
- Cabbage transplants
- Broccoli transplants
- Garlic pods

Seeds

- Beets
- Carrot
- Cilantro
- Collard
- Lettuce
- Parsley
- Pea
- Spinach
- Swiss Chard
- Radish
- Turnip

March

Warm Season Spring

Plant March 18-29

- Pepper transplants
- Strawberry transplants
- Tomato transplants

Seeds

- Basil
- Beans (Pole and Bush)
- Corn
- Cucumber
- Dill
- Gourds
- Melon
- Okra
- Pumpkin
- Squash
- Sunflower

Planting Calendar for Organic Edible Gardening

VEGETABLE	Seed, Thin, Plant to:	Seeding (I=Indoors)		Transplanting		Days To Harvest
		Spring	Fall	Spring	Fall	
Broccoli	12"	1-1/15-1/25	8/8-9/1	2/15 - 2/25	8/25 - 9/15	55-80
Brussels Sprouts	18"	1-1/15-1/25	8/1-8/15	2/15 - 2/25	8/25 - 9/15	85-110
Cabbage	24"	1-1/15-2/1	8/1-8/15	2/15 - 3/1	8/25 - 9/15	60-120
Bok Choy	8-12"	1/15-1/25	8/10-9/1	2/15 - 3/1	8/25 - 9/15	30-90
Cilantro	5-10"	1/15-1/25	9/1-11/1	x	x	30-60
Radishes	1-2"	2/5-4/15	9/1-11/1	x	x	25-30
Parsley	8-12"	2/10-2/25	9/1-11/1	x	x	90
Potatoes-seed eyes	24"	2/1-2/25	7/25-8/15	x	x	85-110
Onion (plants)	4-6"	x	x	2/1-3/5	x	95-160
Beets	3-5"	2/10-3/1	9/1-9/15	x	x	50-65
Carrots	1-2"	2/10-3/1	8/1-8/20	x	x	70-80
Kohlrabi	12"	2/10-3/1	8/1-8/25	x	9/1-9/30	50-75
Leeks	4-6"	2/10-3/1	x	2/1-3/5	x	95-160
Peas-sugar snap	2-3"	2/10-3/1	9/1-10/1	x	x	50-70
Kale	8-12"	2/10-3/10	8/25-10/11	3/1-3/30	9/15-10/1	50-75
Swiss Chard	6-8"	2/10-3/10	8/1-9/1	3/1-3/30	x	50-60
Turnips	3-4"	2/10-3/10	8/25-10/15	x	x	30-55
Lettuce (Leaf)	8-12"	2/10-3/15	8/15-9/1	3/1-3/30	9/1-9/30	40-90
Spinach	3-5"	2/10-3/15	9/15-10/15	3/1-3/15	9/15-10/15	45-60
Beans (Bush)	4-6"	3/20-4/20	8/1-9/15	x	x	45-60
Beans (Pole)	6"	3/20-4/20	8/1-8/15	x	x	50-60
Cucumbers	12-18"	3/20-5/1	8/1-8/15	x	x	50-70
Mustard Greens	3-4"	3/20-5/1	8/1-9/10	x	x	30-55
Sweet Corn	8-12"	3/20-5/1	8/1-8/15	x	x	75-90
Watermelon	24"	3/20-5/1	x	x	x	65-90
Squash (Summer)	18-24"	3/25-7/15	8/1-8/25	x	x	45-120
Squash (Winter)	12-24"	3/25-4/15	7/1-8/10	x	x	45-120
Pumpkins	24-36"	3/25-4/20	7/15-8/15	x	x	45-120
Melons	8-24"	4/5-7/1	x	x	x	60-90
Peas (Southern)	4-6"	4/1-7/20	7/1-7/20	x	x	50-80
Okra	24"	4/5-6/1	7/15-8/15	x	x	48-60
Sweet Potatoes, slips	12-14"	4/5-6/15	x	x	x	120-140
Garlic Cloves	4-6"	x	10/1-10/31	x	x	150-200
Transplant only						
Tomatoes	24-36"	1-1/20-2/10	1-6/20-7/1	3/25-4/15	7/1-8/10	65-90
Eggplant	18-24"	1-2/20-3/1	x	4/5-5/1	x	90-120
Peppers	12-24"	1-2/20-3/1	1-6/1-7/15	3/25-5/1	7/1-8/10	60-100

Coppell Community Garden Organic Planting Guide

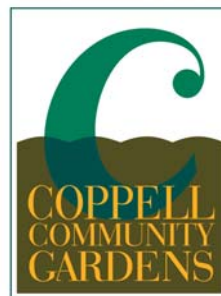
Soil Preparation for Planting: Spread a 1/2" to 1" layer of compost. Gently break up the soil with a garden fork and level surface. Remember soil is alive with bacteria, fungi, insects, spiders, earthworms and other critters, so caring for the soil must be foremost. Plant roots are working with bacteria and fungi and worms and organic matter to create a crumbly soil structure that allows air and water to penetrate into the soil. We disturb this each time we dig or till the soil, or allow the soil to be exposed to the sun and wind. Soil amendments can be added such as organic fertilizer, diluted fish emulsion, molasses, and/or seaweed extract (2 oz to 1 gal. water) sprinkled from a water can. Water well and protect the surface with a light layer of mulch, if not planting in the next week.



Planting by Seeding: Check the seed packet for planting depth and spacing. Moisten garden bed and plant seeds. Water gently, like rain, keeping the bed evenly moist until the plant emerges. Most greens, like lettuces, can be easily transplanted when they are young to get spaced evenly. Do not move root crops but pull out young plants between to get the space needed to grow. Water gently and mulch between the plants with unfinished compost, leaves, straw.

Planting by Transplants: Best to plant in the cool part of the day. Moisten garden bed thoroughly and water transplant pots with seaweed extract diluted in water. Make a hole in bed the size of the pot and remove the plant from pot. Gently set plant in hole and push soil back around plant. Water gently, like rain, and mulch around the transplants, but keep mulch away from stems.

Seeds and New Plants Need Good Soil: Soil with good drainage, organic matter, and microbial activity. Focusing on soil health will grow a healthy plant that will produce well, resist pests and diseases, and endure weather changes. Continually adding compost and mulch throughout the growing season will help maintain good soil health. Learn more about organic gardening and composting through the Coppell Community Garden Environmental Education programs.



coppellcommunitygarden.org



Vegetable Varieties for North Central Texas

Asparagus

Jersey Giant, Jersey Knight
Plant-crowns Feb 15-March 1

Basil

Sweet, Spicy Globe

Beans, Snap Bush

Blue Lake 274, Top Crop, Tendercrop,
Contender, Tender green, Derby
Kentucky Wonder Bush
Plant-Spring March 20-May 1
Plant-Fall August 1-September 1

Beans, Yellow Bush

Goldcrop, Improved Golden Wax
Plant-Spring March 20-May 1
Plant-Fall August 1-September 1

Beans, Pinto

Improved Pinto
Plant-Spring March 20-May 1
Plant-Fall August 1-September 1

Beans, Snap Pole

Blue Lake, Kentucky Wonder
Plant-Spring March 20-April 20
Plant-Fall August 1-August 15

Beans, Lima Bush

Henderson Baby Bush, Jackson Wonder
Plant-Spring March 20-April 20

Beans, Lima Pole

Florida Speckled, King of the Garden
Plant March 20-April 20

Beets

Detroit Park Red
Pacemaker III
Plant-Spring February 10-March 1
Plant-Fall Sep1-Sep 15

Broccoli

Spring only: Premium Crop, Emperor
Spring or Fall: Green Comet, Galaxy, Packman
Plant – Spring Transplants Feb 15-March 1
Plant-Fall Transplants Aug 20-Sep 15
Plant-Fall Seed Aug 1-Aug15

Brussels Sprouts

Prince Marvel, Royal Marvel
Plant-seed
Plant-transplants Aug 1-Aug 15
Aug 20-Sep 15

Cabbage

Early Jersey Wakefield
Ace (wrinkled leaves)
Plant-Spring transplants Feb-March 1
Plant-Fall seed Aug 1 – Aug 15
Plant-Fall transplants Aug 20-Sep 15

Cabbage, Chinese

Jade Pagoda, Michihli, China Pride
China Flash (napa type)
Plant-Spring Feb 15-March 1
Plant-Fall Aug 10-Sep 1

Cantaloupe

Hybrids: Magnum 45, Ambrosia
Sugar Queen, Mission
Explorer, Caravelle
Non-Hybrids: Uvalde, Perlita
Plant-Spring April 5-May 1
Plant-Fall June 15-July 1

Carrot

Royal Chantenay, Burpee's Toudo, Parks Nandor
Danver's 126, Red Cored
Chantenay
Plant-Spring Feb 10-March 1
Plant-Fall Aug 15-Sep 5

Chard, Swiss

Rhubard (red color), Lucullus, Fordhook
 Plant-Spring Feb 10-March 10
 Plant-Fall Aug 1-Sep 1

Collards

Blue Max, Georgia
 Plant-Spring Feb 10-March 10
 Plant-Fall Aug 1-Sep 1

Corn, Sweet

Yellow: Golden Queen, Guadalupe Gold Bi-
 color: Sweet G-90, Honey & Pearls white:
 Silver Queen Frontier
 Plant-Spring March 20-May 1
 Plant-Fall Aug 1-Aug 15

Cucumber, Pickling

Plant-Spring March 20-May 1
 Plant-Fall Aug 1-Aug 15

Cucumber, Slicing

Sweet Success, Sweet Slice
 Plant-Spring March 20-May 1
 Plant-Fall Aug 1-Aug 15

Cauliflower

Snow Crown
 Plant-Spring transplants Feb 15-March 1
 Plant-Fall seed Aug 1-Aug 15
 Plant-Fall transplants Aug 20-Sep 15

Eggplant

Plant-Spring Transplants April 5-May 1
 Plant-Fall June 15-July 1
 Transplants July 1-July 25

Garlic

Texas White
 Plant-Fall only: cloves, Sep 15-Oct 15

**Greens (hybrid of Chinese cabbage x
 stubble turnip)**

Plant-Spring Feb 10-March 10
 Plant-Fall Aug 25-Oct 1

Kale

Dwarf Blue Curled, Blue Knight
 Plant-Spring Feb 10-March 10
 Plant-Fall Aug 25-Oct 1

Kohlrabi

Grand Duke
 Plant-Spring
 Seed: Feb 10-March 1
 Transplants Feb 15-March 1
 Plant Fall Seed Aug 1-Aug 25

Leeks

Plant-Spring: Seed Feb 10-Feb 25
 Plant-Fall: Seed Sep 10-Oct 1

Lettuce, Butterhead

Spring or Fall: Buttercrunch
 Fall only: Tom Thumb
 Plant-Spring Feb 10-March 15
 Plant-Fall Aug 15-Sep 10

Lettuce, Head

Classic, Park's Mission
 Plant-Spring Feb 10-March 1
 Plant-Fall Aug 15-Sep 1

Lettuce, Leaf

Salad Bowl, Black Seeded Simpson, Red Sails
 (red color)
 Plant Spring: Feb 10-March 15
 Plant Fall: Aug 15-Sep 15

Lettuce, Cos or Romaine

Romaine
 Plant-Spring Feb 10-March 15
 Plant-Fall Aug 15-Sep 15

Mustard

Plant-Spring Feb 15-April 1
 Plant-Fall Aug 1-Sep 10

Okra

Blondy, Lee, Emerald, Clemson Spineless
 Plant-Spring April 5-June 1
 Plant-Fall July 15-Aug 15

Onion, Bulbing

Yellow: Texas Supersweet (Grano 1015Y),
Yellow Granex
Red: Red Granex, Burgundy
White: Crystal Wax, White Granex
Seed: sow previous year Sep 10-Oct 1
Transplants: plant current year Feb 10-March 5

Onion, Bunching (Scallions)

Beltsville Bunching
Plant-Spring Feb 10-March 1

Parsley

Moss Curled, Plain (Italian)
Plant-Spring Feb 10-March 5
Plant-Fall Aug 1-Oct 1

Peas, English

Little Marvel, Wando
Plant-Spring Feb 10-March 1
Plant-Fall Sep 1-Oct 1

Peas, Edible-Podded

Spring only: Sugar Snap (bush)
Spring or Fall: Sugar Ann (bush)
Sugar Pop (bush), SuperMel (vine)
Sugar Sprint
Plant-Spring Feb 10-March 1
Plant-Fall Sep 1-Oct 1

Peas, Southern

Blackeye #5, Mississippi Silver, Purple
Hull, Zipper Cream Crowder, Colossus Crowder
Plant-Spring April 1-May 20
Plant-Fall July 1-August 1

Pepper, Hot

Long Red or Slim Cayenne, Hidalgo
Serrano Jalapeno, TAM Mild Jalapeno
Mucho Nacho, Super Cayenne
Plant-Spring April 1-May 1
Plant-Fall July 1-July 25

Pepper, Sweet Bell

Green: Big Bertha, Jupiter (mature color: red)
Summer Sweet 860 (mature color: yellow)
Plant-Spring April 1-May 1
Plant-Fall July 1-July 25

Pepper, Sweet Salad

Gypsy, Sweet Pickle, Cubanelle
Sweet Spot (sweet banana)
Plant-Spring April 1-May 1
Plant-Fall July 1-July 25

Potato, Irish

Red: Norland (early season)
Red LaSoda (midseason)
White: Kennebec (late season)
Yukon Gold
Plant-Spring seed pieces Feb 15-March 1
Plant-Fall seed pieces July 25-Aug 10

Potato, Sweet

Jewell, Centennial, Vardaman
Plant – Spring slips April 15-May 15

Pumpkin

Connecticut Field, Spirit , Small Sugar
Autumn Gold, Jack Be Little (ornamental)
Plant-Spring April 1 – April 20
Plant-Fall Small July 15-August 15
Plant-Fall Large June 15 – July 15

Radish

Red: Inca, Champion, Cherry Belle
White: White Icicle, Snow Belle
Plant-Spring Feb 5 – May 1
Plant-Fall Sep 1-Nov 1

Rutabaga

American Purple Top
Plant-Spring Feb 1 – April 1
Plant-Fall Aug 1 – Oct 15

Spinach

Melody, Coho, Fall Green, Tyee
Plant-Spring Feb 10-March 15
Plant-Fall Aug 1-Oct 15

Squash, Summer

Multipik, Dixie, Sun Drops, Burpee's
Butterstick, Straight Neck, Butternut
Prelude II, Lyonesse, Conqueror III
Plant-Spring March 25-May 1
Plant-Fall August 1-August 25

Squash, Summer Pan-Type

Yellow: Sunburst
White: Patty Pan
Green: Peter Pan
Plant-Spring March 25-May 1
Plant-Fall August 1-August 25

Squash, Winter

Early butternut, Sweet Mama, Table Ace
Table King Bush Acorn, Cream of the Crop
Plant-Spring March 25-May 1
Plant-Fall July 1-August 10

Squash, Zucchini

Green: Senator, President, Eight Ball Tigress
Yellow: Goldrush
Plant-Spring March 25-May 1
Plant-Fall August 1-August 25

Note Regarding Tomatoes:

Cultivars listed as determinate are the bush type whereas those listed as indeterminate are the vining type. "A" indicates genetic resistance to Alternaria, "F1" to Fusarium wilt race 1, "F2" to Fusarium wilt race 2, "N" to root knot nematodes, "S" to Stemphylium (gray leaf spot), "T" to tobacco mosaic virus, "V" to Verticillium wilt.

Tomatoes, Large-Fruited

Spring: Determinate: Celebrity VFNT
Carnival VFNT, Surefire VF1, President
VFNT, Merced VF1F2ST, heat wave

VF1F2SA Indeterminate: Champion VFNT, Quick
Pick VFNT, Simba VFNT, First Lady
VFNT, Superfantastic VFN
Fall: Determinate: Surefire VF1
Heatwave VF1F2SA
Plant-Spring transplants March 15-April 15
Plant-Fall transplants July 1-July 15

Tomatoes, Paste

Indeterminate: Roma VF, San Marzano
Plant-Spring transplants March 15-April 15
Plant-Fall July 1- July 25

Tomatoes, Small Fruited

Indeterminate: Porter, Cherry Grande
Sweet 100, 4th of July
Plant-Spring transplants March 25-April 15
Plant-Fall July 1-July 25

Turnip

Spring or Fall Tokyo Cross, Royal Globe II
White Lady, Fall only: Just right
Plant-Spring Feb 10 - March 10
Plant-Fall August 25 - Oct 15

Watermelon

Regular: Crimson Sweet, Sugar Baby
Legacy 800's
Royal Sweet, Orange Golden, Star Brite,
Tendersweet (orange meat), Desert King
(yellow meat), Black Diamond,
Jubilee Tripod or seedless (transplants only)
Jack of Hearts, Supersweet 503.2
Tiffany Plant-Spring March 25-May 1
Plant-Fall June 15-July 1

This list was developed to inform the gardener of some of the better varieties of vegetables in this area. These varieties were selected for their productivity, their resistance to common diseases and for their adaptability to Tarrant County. Using recommended varieties will not necessarily produce the desired results. Proper watering, fertilization, weed control, etc...are also important aspects of successful gardening. Varieties are listed at random and not in order of preference.

3 Year Crop Rotation

Root
& Bulb



Fruit
& Seed



Leaf
& Stem



