

Fall Vegetable Gardening

Getting Started

- What do you like to eat?
- How much space do you have?
- How much time do you have?
- Observe your surroundings:
 - where is sun/shade?
 - do you need a fence?
 - do you have good drainnage?
- Start small

Seek Local Advice

Central Texas Horticulture

<http://aggie-horticulture.tamu.edu/travis>

Master Gardener Help Desk

Regional Books

- The Southern Kitchen Garden
by Bill Adams and Tom LeRoy
- The Vegetable Book
by Dr. Sam Cotner
- Texas Organic Vegetable Gardening
by Howard Garrett and Malcolm Beck

Aggie Website

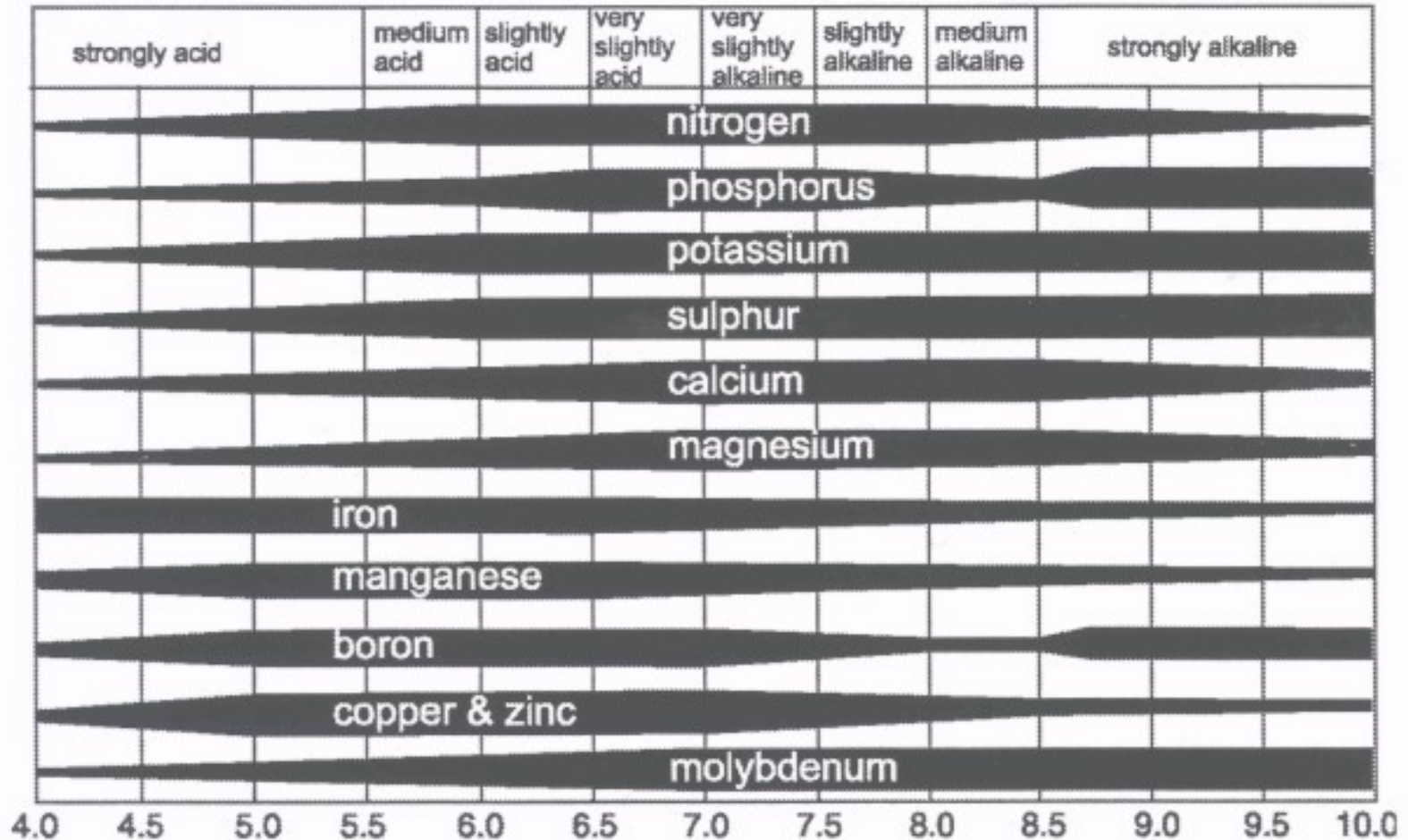
<http://aggie-horticulture.tamu.edu>

Good Soil - A Healthy Foundation

- Remove weeds, rocks, debris
- Amend with organic matter on a regular basis
- 8-12" loose, friable soil (sandy loam is ideal)
- Do not compact soil – roots need oxygen
- Ideal pH is 6.0 – 7.5
- Do not work soil when wet
- May take 3-5 years to build good organic soil



Optimum Nutrient Availability pH 6.0 – 7.5



Soil Test

Routine soil test at A&M = \$10-\$20

<http://soiltesting.tamu.edu>

- Test recommended every 3-4 years
- General fertilizer recommendation:
1 cup high N fertilizer (21-0-0 or 15-5-10) per 25' of row
OR
2-3 cups organic (like 8-2-4 or 6-2-2) per 25' of row

Raised Beds

- No more than 4' across, 8-12" high
- Rot resistant wood - cedar, redwood
- Stone, cinder blocks
- Fill with quality garden soil and compost



Square Foot Gardening



Location, Location, Location

6-8 hours of sun, close and convenient



Adequate Moisture & Drainage



- Locate garden near a source of water
- Raised beds for rocky or heavy clay soils
- Liberal amounts of compost - holds moisture
 - improves drainage
- Avoid wetting leaves
- Let it soak in, then water again
- Monitor your equipment regularly for leaks

Make Your Own Compost



- Layers of green and brown with a shovelful of soil/compost

Green = Nitrogen
grass clippings,
kitchen waste, coffee
grounds, N fertilizer

Brown = Carbon
leaves, newspaper,
straw

- Make it big – at least 3'x3'

Mulch

- Helps retain moisture
- Regulates soil temperature
- Controls weeds
- Use compost, leaves, pine needles, grass clippings, alfalfa hay, straw



The Right Plant . . .

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News

Late summer-blooming lilies take you by surprise | Charla Anthony - The Eagle:
<http://t.co/iPi11iq>

AgriLife Extension to offer hope for West Texas gardeners at Aug. 30 workshop
<http://goo.gl/fb/JoVri>

Looking for Texas **#drought** information?

Upcoming Events

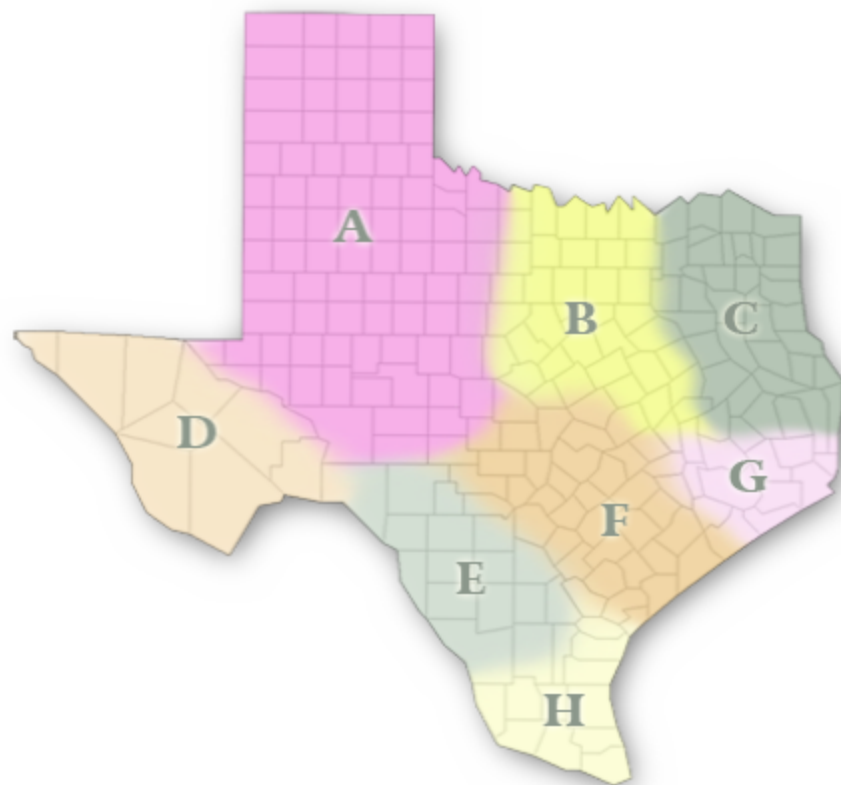
- **Prospective Wine Grower Workshop**
Aug 26, 2011
- **2011 National JMG® Specialist Training**
Sep 15, 2011
- **Prospective Wine Grower Workshop**

Featured Sites

- **Drought Management for the Commercial Horticulture**
- **Drought Preparedness for the Urban Landscape**
- **Agricultural Drought Task Force**
- **Texas AgrAbility Project**
- **Vegetable Variety Selector**
- **Food Processing Entrepreneurs**

Vegetable Variety Selector

Select your county or select a general region from the list. If varietal data is not available for your specific county, then regional data will be returned instead.



County

Please select the Texas County in which you reside.

Select a county... ▼

Search by County

Region

Please select the Texas region you reside in below.

Please select a region... ▼

Search by Region

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Vegetable Variety Selector

Select Vegetable Varieties for San Jacinto County

Select a specific vegetable or you can find all the recommended vegetable varieties for your county.

Varieties by Vegetable

All Vegetable Varieties

Select a different county or region

Vegetable Variety Selector

Recommended Vegetable Varieties for San Jacinto County

[Download PDF](#)

Variety	Days to Harvest	Variety	Days to Harvest	Variety	Days to Harvest
Asparagus		Leek		Rutabaga	
Jersey Gem	300	American Flag	130	American Purple Top	90
Jersey Giant	300	Lettuce		Squash	
UC-157	300	Butterhead/Bibb		Summer	
UC-72	300	Bibb	60	Aristocrat (Zucchini)	53
Bean		Buttercrunch	70	Bennings Green Tint (Scallop)	63
Bush		Tom Thumb	45	Blondie (Zucchini)	50
Blue Lake	60	Crisphead/Iceberg		Burpee's™s Butterstick (Yellow, Straightneck)	50
Early Contender	55	Classic	85	Butterbar (Yellow, Straightneck)	49
Goldcrop Wax	55	Mission	75	Dixie (Yellow, Cookneck)	45
Greencrop	50	Looseleaf		Earl's™s White Bush (Scallop)	47
Improved Golden Wax	52	Black Seeded Simpson	45	Early Prolific (Yellow, Straightneck)	40
Jumbo	55	Oakleaf	50	GoIdfinger (Zucchini)	51
Long Tendergreen	50	Red Sails	52	Gold Rush (Zucchini)	52
Pencil Pod Black Wax	53	Ruby Red	50	Hybrid (Zucchini)	50
Roma II	60	Salad Bowl (green)	49	Hyrific (Yellow, Straightneck)	49
Tendercrop	54	Simpson Elite	45		
Topcrop	50	Melon			
Lima		Cantaloupe			
Dixie White	70	Ambrosia	86		
		Caravelle	80		

The Garden Planting Guide

Time to plant seeds unless noted otherwise

[illegible]

Wrap cages with row cover



- Gives a few degrees of frost protection
- Protects young plants from wind damage
- Protects from insects
- Remove when plants begin to flower

Crop Rotation

Cool Season

- Composite
(artichoke, lettuce)
- Crucifer
(broccoli, Brussels sprouts, cabbage, cauliflower, collards, kale, kohlrabi, mustard, radish, turnip)
- Goosefoot
(beets, chard, spinach)
- Legumes
(peas)
- Lily
(asparagus, garlic, onions)
- Parsley
(carrots, cilantro, dill)

Raised Bed Trials

Joe Masabni

Texas A&M
College Station

Construction





Expenses	
Lumber, rebar, hooks	\$27
Soil	\$13
Mulch	\$10
Irrigation	\$13
Cages	\$17
Total Expenses per Bed	\$80

2009 Fall Exp't

4 Celebrity tomato plants per bed

Transplanted on 8-28-09

9-16-09



Fertilization

9/1/2009	5 oz per bed with 15-5-10
9/17/2009	0.6 oz per bed with 18-18-21
9/24/2009	3 tbsp per bed with 18-18-21
10/9/2009	1 cup per bed with 15-5-10

Pesticide

9/10/2009	Sevin at 50ml per gallon
9/16/2009	Sevin at 50ml per gallon
9/17/2009	Hi Yield Fungicide at 1 oz per gallon
9/24/2009	Hydrogen peroxide and neem oil at 1 tbsp per gallon
10/2/2009	Hydrogen peroxide, neem oil at 1 oz per gallon, and Bt at 0.5 oz per gallon
10/6/2009	Sevin at 1.5 oz per gallon
11/3/2009	Marathon II at 2 Oz. Per 1000 sq. ft

2009

Totals

No.

lb

1

368

47.5

2

254

28

3

276

34.3

4

332

32.1

5

200

31.5

6

97

18.6

7

94

17

8

114

17.4

9

216

30.1

10

293

36.4

11

288

33.1

12

268

30.3

Total

2800

356

Average

233

29.7

2010

2 Celebrity tomato plants and 2
Rutgers plants per bed

Transplanted on 3-31-10

2-18-2010



4-28-2010 – 33 days after transplanting



2010 Season Long: 5 man- hours

Date	Activity	Man-Hours	Notes
4/23/2010	Suckering plants	1	
4/23/2010	Fertilize	0.5	18-18-21 (1.5 tbsp per 3 gal covered 3 beds or 12 plants)
4/29/2010	Cages	1	
5/4/2010	Leaf tucking	1	
5/6/2010	Fertilize	1	13 oz. 10 30 20 (~1 oz. per plot)
6/16/2010	Fertilize	0.5	18-18-21 (1 tbsp per 3 gal covered 3 beds or 12 plants)

2010	Celebrity		Rutgers	
	No.	lb	No.	lb
1	79	42	74	30
2	61	33	83	31
3	79	37	30	12
4	70	37	62	12
5	75	39	56	26
6	67	32	57	29
7	83	33	86	36
8	85	44	59	24
9	51	27	61	27
10	50	22	62	25
11	49	17	60	22
12	59	28	47	16
Total	808	392	737	291
Average	67	33	61	24

Raised Bed Plot	Doug Welsh	Hort Farm Raised Bed (One unit)
Design	Raised garden - pine frame 2"x10"	Raised 2"x12" pine frame
Square feet	160	16
Cu.ft. soil	130	16
Number of Plots	1	12
Expenses		
Lumber	\$65.00	\$27.00
Soil	\$200.00	\$13.00
Mulch	-	\$10.00
Irrigation	\$75.00	\$13.00
Raised bed covers	-	\$70.00
<i>Other Supplies</i>		
Cages	\$60.00	\$17.00
Fertilizer	\$12.00	\$5.00
Plants, sets, seeds	\$40.00	\$8.00
Total Expenses	\$452.00	\$163.00
Total Expenses per sq. ft.	\$2.83	\$10.19

Harvest Data	Value per unit	Yields	Total Value	Value per unit	Yields	Total Value
Bell peppers (lbs)		4.0	\$0.00		0	\$0.00
Carrots (lbs)	\$2.00	4.5	\$9.00	\$2.00	0	\$0.00
Collard greens (lbs)	\$2.00	4.0	\$8.00	\$2.00	0	\$0.00
Elephant garlic (lbs)		0.0	\$0.00		0	\$0.00
Green beans (lbs)		2.5	\$0.00		0	\$0.00
Jalapeno peppers (lbs)		5.5	\$0.00		0	\$0.00
Leaf and bibb lettuce (bunches)	\$3.00	15.0	\$45.00	\$3.00	0	\$0.00
Multiplying green onions (bunches)	\$1.00	10.0	\$10.00	\$1.00	0	\$0.00
Onions (lbs)	\$1.50	1.0	\$1.50	\$1.50	0	\$0.00
Potatoes (lbs)		14.0	\$0.00		0	\$0.00
Shallots (bunches)		0.0	\$0.00		0	\$0.00
Tomatoes (lbs)	\$3.00	57.0	\$171.00	\$3.00	56.9	\$170.70
Total Value			\$244.50			\$170.70
Total value per sq. ft.			\$1.53			\$10.67
Return/Cost			0.54			1.05

Visit TAMU Hort Gardens









Photo Album

by Joe Masabni





















Expand N Gro Experiment, 2011

by Joe Masabni



9-23-11



Native



GM



ENG

10-20-11



Native



GM



ENG



Cool Season Crops



Asparagus



- Plant crowns in early spring, 18" apart
- Don't harvest till 3rd year
- Use well drained, organic soil
- Feed with high N fertilizer in late winter and after harvest
- Cut foliage down after first freeze and mulch

Beets

- Like cool soil
- Plant in October and again in December
- Soak seeds overnight
- Cold hardy
- Thin 4-6" apart
- Harvest small for best quality
- Eat your greens!



Broccoli

- Transplants in October
- 12"-15" spacing
- Side-dress with 2-4 tbsp of fertilizer when heads begin to form
- Grow fast and strong – *bigger plant = bigger head*
- Harvest side shoots after main head



Brussels Sprouts

- Cold tolerant
- Takes 3-4 months
- 2' spacing
- Remove tip to stimulate side buds



Cabbage

- Space 1 ½ - 2 feet apart
- Likes high fertility – small does of fertilizer (2-4 Tbsp/plant) every 3-4 weeks
- Tolerates temperatures in the 20's
- Can take up to 5 months to form a large head



Carrots

- Plant seed Oct-Dec
- Seed needs light to germinate - barely cover with compost or potting mix
- Require regular water and fertilizer for best flavor



Cauliflower

- Space 2' apart
- One head per plant
- 2-4 Tbsp N fertilizer every 3 weeks
- Stress = small heads
- Pull up leaves to blanch heads when 2-3" in diameter



Collards and Kale

- Quick growing
- Seed or transplant
- Space 1 - 1 ½ apart
- Use young, tender leaves for salads, older tougher leaves for greens and stews
- Harvest leaves all winter



Garlic

- Plant individual cloves in October
- 4-6" apart, 1" deep
- Small amounts of N fertilizer every 3 weeks
- Harvest in May or June, when lower leaves turn yellow



Kohlrabi

- Space 1 ½ -2 feet apart
- Quick growing
- Seed or transplant
- Harvest bulbs when young and tender
- Use raw or cooked



Purple Vienna

Lettuce

- Plant October - March
- Seeds or transplants
- Barely cover seed (needs light to germinate)
- Keep soil moist for germination
- Harvest regularly
- Cold hardy



Onions

- Plant in January - pencil size transplants 6" apart
- Fertilize every 3-4 weeks with small amounts of nitrogen (blood meal, cottonseed meal)
- Avoid high sulfur fertilizer (high sulfur=hot onions)
- Harvest in May when tops fall over



Peas

- Plant late September and again in January
- Moderately fertile soil
- Most varieties need support
- Cold does not kill plant but knocks off blooms
- Garden peas, sugar snap peas, snow peas



Radishes

- Plant seed Oct-Feb
- THIN!
- Harvest in 28-30 days



Spinach

- Plant October – March in cool soil
- Soak seeds before planting
- Space 4-6" apart
- Mulch well to keep leaves off ground
- Use row cover to prevent insect damage



Swiss Chard

- Can take the heat but appreciates afternoon shade
- Soak seeds before planting
- Thin 8-12" apart
- Sauté just like spinach



Turnips and Mustard

- Plant in October
- Space 6" apart
- Harvest turnips when small and tender or grow for tops
- Harvest young mustard leaves for salads and larger leaves for greens



Asian Greens

great for stir-fries and salads

- Bok choy/Pak choi
Mei Qing Choi, Joi Choi, Toy Choy
- Tatsoi
- Chinese cabbage
Blues, Monument, Michihili
- Chinese celery
Kintsai, White Queen
- Komatsuna (spinach mustard)



Cool Season Pests



Harvest at the right time

- Harvest in the morning
- Quick rinse before storing
- Harvest at peak for best flavor, nutrients
- Pick frequently to encourage more blooms
- If you use pesticide read the label for 'Days to Harvest'

Controlling Disease in the Vegetable Garden

- Resistant varieties
- Rotate crop families
- Proper watering techniques
- Proper spacing – air circulation
- Remove diseased plant material
- Do not work garden when foliage is wet

Reducing Pesticide Use

- Sanitation
- Row cover
- Crop rotation
- Diverse plantings
- Resistant varieties
- Plant at the right time
- Read the label (and follow it)
- Tolerate some insect damage

Low Toxicity Controls for Pests and Disease

- Insecticidal Soap – aphids, spider mites, stink bugs
- Copper Soap Fungicide - downy mildew, powdery mildew
- Potassium bicarbonate – powdery mildew
- Serenade – downy mildew, powdery mildew, early blight
- Spinosad – stink bugs, spider mites, beetles
- Neem oil – aphids, beetles, squash bugs
- Bt – caterpillars

Floating Row Cover

keeps the bugs out, offers cold protection



Spider Mites and Aphids



Nematodes



- Plant resistant varieties
- Discard infected plants
- Solarize soil in summer
- Plant Elbon rye in fall and till under in spring
- Incorporate organic matter
- Do not spread through tools



Get to know the Good Guys



Bonus Tips

- Start small
- Think ahead/plan ahead
 - will you be on vacation at harvest time?
 - will you be around to water?
- Be realistic
 - expect phenomenal success and dismal failures
- Keep records, make notes
 - favorite varieties, good production