

PURDUE
EXTENSION

LOCAL FACES
COUNTLESS CONNECTIONS

Small Scale Commercial Vegetable Production

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Southwest Purdue Agriculture Center





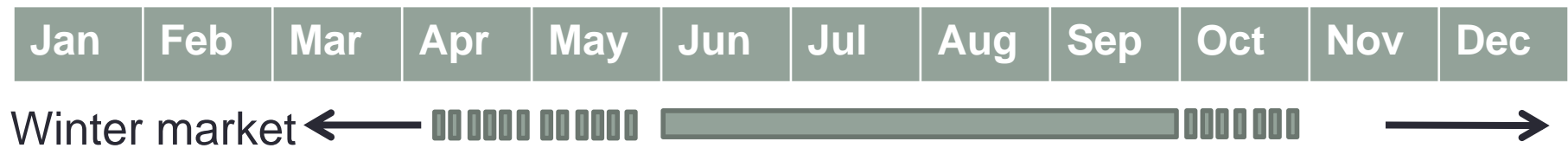
http://ucanr.edu/sites/CESonomaAgOmbuds/Produce_Farming/Farm_Stands/



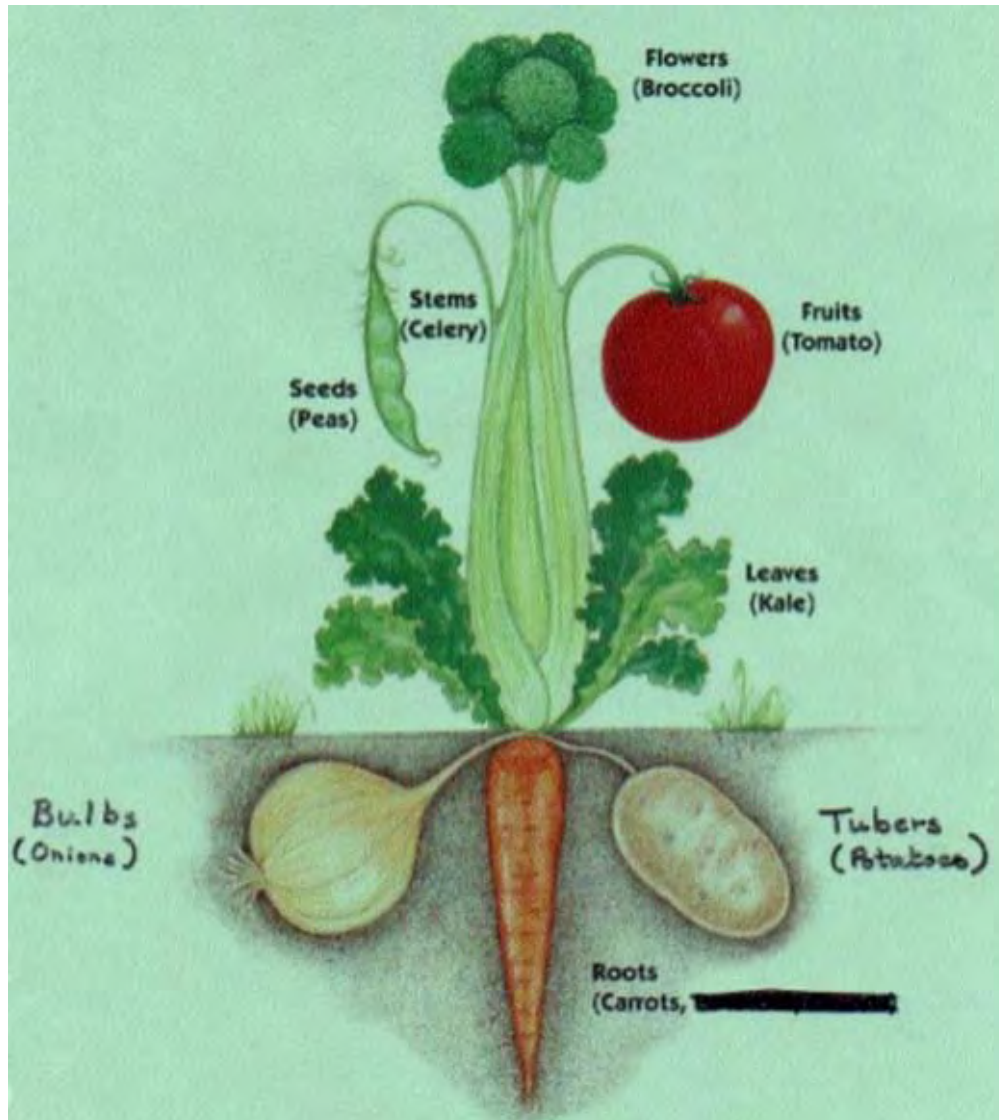
<http://miami.happeningmag.com/miami-farmers-market-guide/>



- **Target market**



- **Primary crops**



<http://www.slideshare.net/griff1815/vegetables2-55342860>

Warm-season Crops

- **Tomato**
- **Eggplant**
- **Pepper**
- **Cucumber**
- **Squash**
- **Cantaloupe**
- **Watermelon**
- **Beans**

Cool-season Crops

- **Spinach**
- **Lettuce**
- **Cabbage**
- **Kale**
- **Broccoli**
- **Cauliflower**
- **Garlic**
- **Onion**
- **Collard**
- **Radish**
- **Carrot**



Production



Season extension



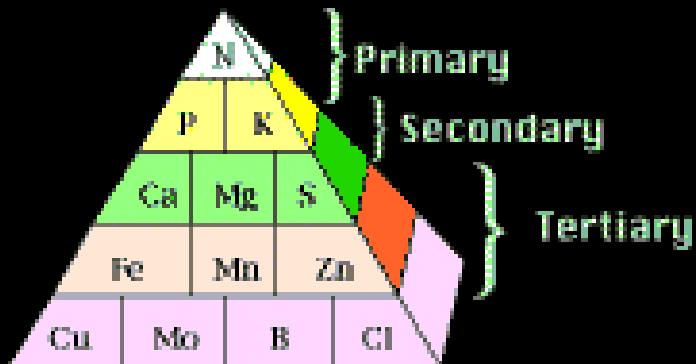
Vegetables as examples



Production

- **Plant nutrition and soil fertility**

Essential Plant Nutrients



• Soil test and fertilizer needs



To: SOUTHWEST PURDUE AG CTR
4669 NORTH PURDUE ROAD
VINCENNES, IN 47591-9806

For: WENJING GUAN
Farm: SWPAC
Field: HIGH TUNNELS

Report Number: F16061-0042
Account Number: 84511



Attn: WENJING GUAN

SOIL TEST REPORT

Date Received: 3/1/2016
Date Reported: 3/3/2016 Page: 1 of 1

Sample ID	Lab Number	Organic Matter %	Phosphorus		Potassium K ppm	Magnesium Mg ppm	Calcium Ca ppm	Sulfur S ppm	Soil pH	Buffer pH	CEC meq/100g	Percent Cation Saturation			
			Bray 1 ppm P	Bray P2 ppm P								% N	% Mg	% Ca	% K
1 HT1	30268	1.0	48 H		259 VH	115 H	650 M	35 L	7.1	7.0	5.0	13.2	19.1	64.7	3.0
2 HT2	30269	0.9	58 VH		171 H	80 H	450 M	14 VL	6.7		3.4	12.8	19.5	65.9	1.8
3 HT3	30270	0.8	39 H		282 VH	90 H	500 M	31 L	7.1		4.1	17.6	18.3	60.9	3.3

VL - Very Low L - Low M - Medium H - High VH - Very High

Sample ID	Sulfur S ppm	Zinc Zn ppm	Manganese Mn ppm	Iron Fe ppm	Copper Cu ppm	Boron B ppm	Soluble Salts (meq/L)	Nitrate NO3-N ppm	Ammonium NH4-N ppm	Bicarb P ppm					Comments
1 HT1	7 L	5.4 H	40 H	45 H	1.2 H	0.8 M	0.3 VL								
2 HT2	7 L	7.4 H	36 H	28 H	1.1 M	0.2 VL	0.1 VL								
3 HT3	9 M	3.9 M	35 H	22 H	0.9 M	0.5 L	0.2 VL								



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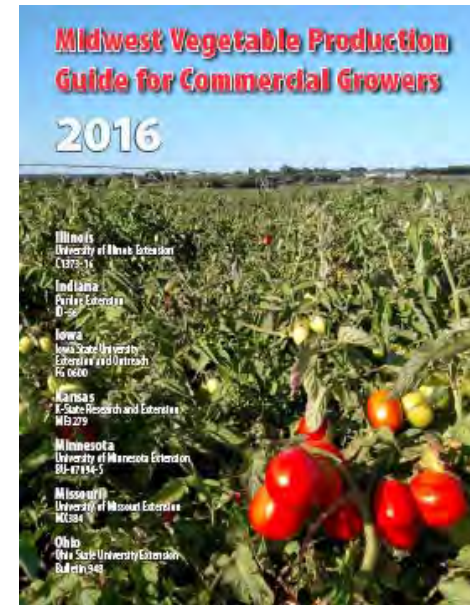
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SOIL FERTILITY RECOMMENDATIONS

Date Received: 3/1/2016
Date Reported: 3/3/2016 Page: 1 of 1

Sample ID	Intended Crop	Previous Crop	Yield Goal	Lime Tons/A	Nitrogen N lb/A	Phosphate P2O5 lb/A	Potash K2O lb/A	Magnesium Mg lb/A	Sulfur S lb/A	Zinc Zn lb/A	Manganese Mn lb/A	Iron Fe lb/A	Copper Cu lb/A	Boron B lb/A
1 HT1	Tomato-Fresh	Tomato-Fresh	25 tons	0.0	130	80	100	0	26	2.5	0	0	0	1.0
3 HT3	Cucumbers	Tomato-Fresh	200 cwt	0.0	115	95	0	0	17	2.5	0	0	0	0.0

Sample 1 HT1: TOMATOES - Nitrogen recommendations are for hand-harvested varieties. Subtract 30-40 lb N per acre for machine harvested varieties.
Sample 3 HT3: SOLUBLE SALTS - VERY LOW - Salinity effects mostly negligible.



Nitrogen: 100 to 120 lb/a

Preplant (30 lbs/a N), sidedressing or fertigation (1 lb/a N per day)

Phosphorus:

Preplant (0 to 240 lb/a P₂O₅)

Potassium

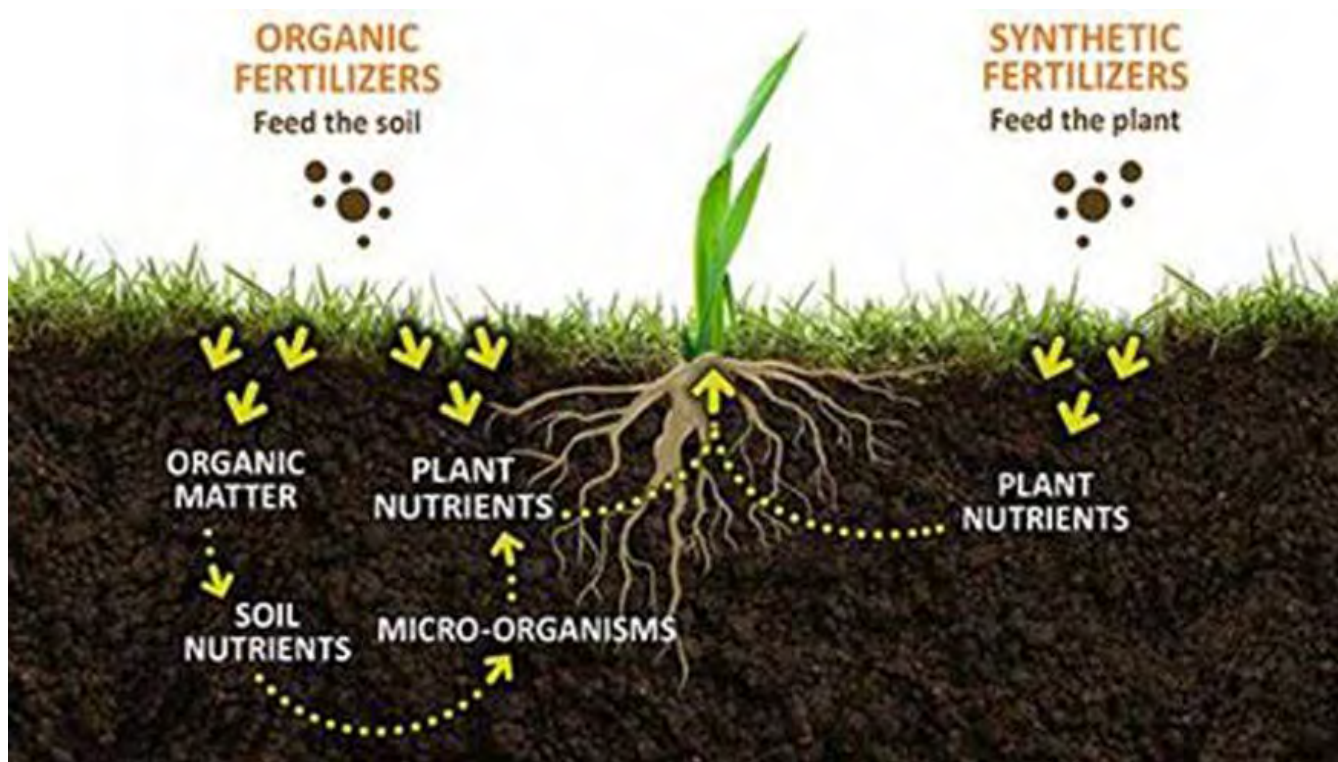
Preplant (0 to 300 lb/a K₂O), fertigation (1.5 to 2.5 lb/a K per day)

https://ag.purdue.edu/agry/extension/Pages/soil_testing.aspx



Production

- *Fertilizers and organic soil amendments*



<http://www.milorganite.com/lawn-care/organic-lawn-care/organic-vs-synthetic>

- *Compost and cover crops*



- *Compost and cover crops*



■ Diseases, insects and weeds

- *Fungi, bacteria, viruses*



Disease Identification

Purdue Plant & Pest Diagnostic Laboratory

<https://www.ppd.l.purdue.edu/PPDL/index.html>

- *Insects*



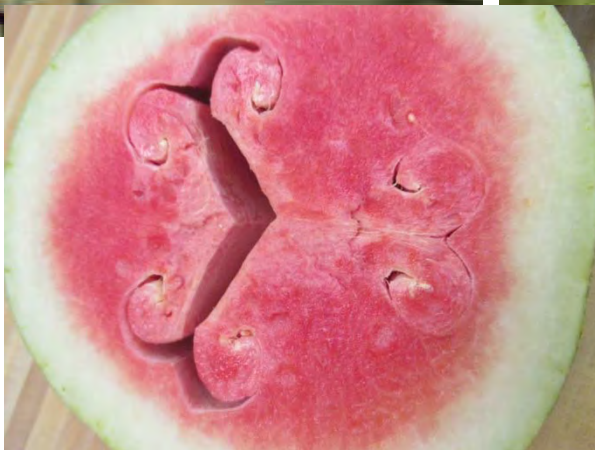
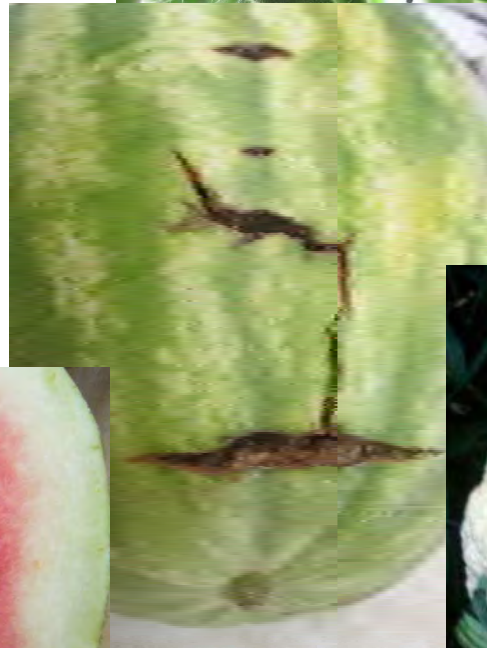
- *Nematode*



- *Weeds*



Other problems

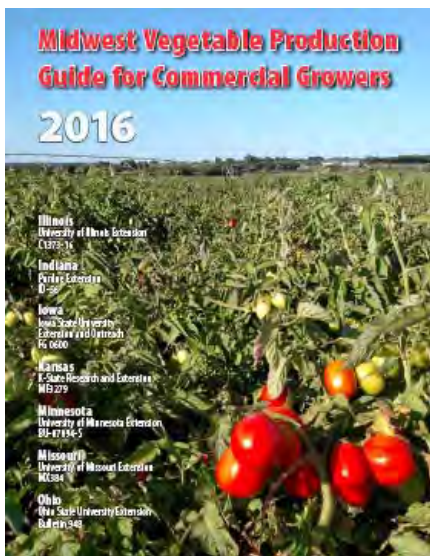


<http://www.extension.umn.edu/garden/yard-garden/vegetables/growing-broccoli-cabbage-and-c>

Production



■ Resources



<https://ag.purdue.edu/hla/Extension/Pages/Vegetable-Crops.aspx>

FACTS FOR *Fancy Fruit*

A newsletter for commercial and advanced amateur fruit growers



PURDUE
AGRICULTURE | Horticulture Extension

Horticulture Extension Home Horticulture and LA Department Home Purdue Extension Website

Personnel Areas of Expertise Events News Publications and Newsletters Resources



Production



Season extension



Vegetables as examples



Season extension

- ❑ Succession planting
- ❑ Early maturing varieties
- ❑ Protected culture



Scheduling Vegetable Plantings for Continuous Harvest

A Publication of ATTRA - National Sustainable Agriculture Information Service • 1-800-346-9140 • www.attra.ncat.org

By Janet Bachmann
NCAT Agriculture
Specialist
© 2008 NCAT

Market gardeners try to schedule their planting so they can offer customers a continuous supply of fresh flowers, herbs, and vegetables throughout the growing season. This publication helps growers plan planting times and succession planting.





Photo by Sanjun Gu





<http://smallfarms.cornell.edu/2011/04/02/experimenting-with-caterpillars-another-option-for-season-extension/>

















Vegetable as examples

Tomatoes

❖ Choose varieties

- Fruit characteristics: Beefsteak, cherry and grape tomato, plum, different color



Pictures were from Johnny's Selected Seeds

- Plant growth habits

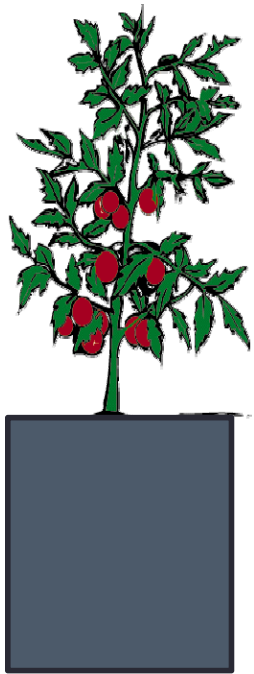
Determinate vs. Indeterminate



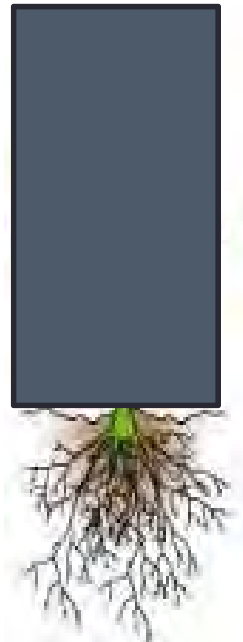
❖ Cultural practices



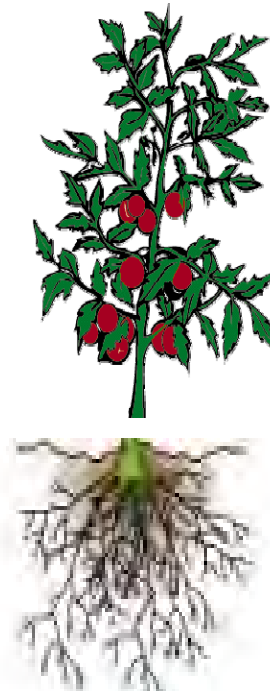
Scion



Rootstock



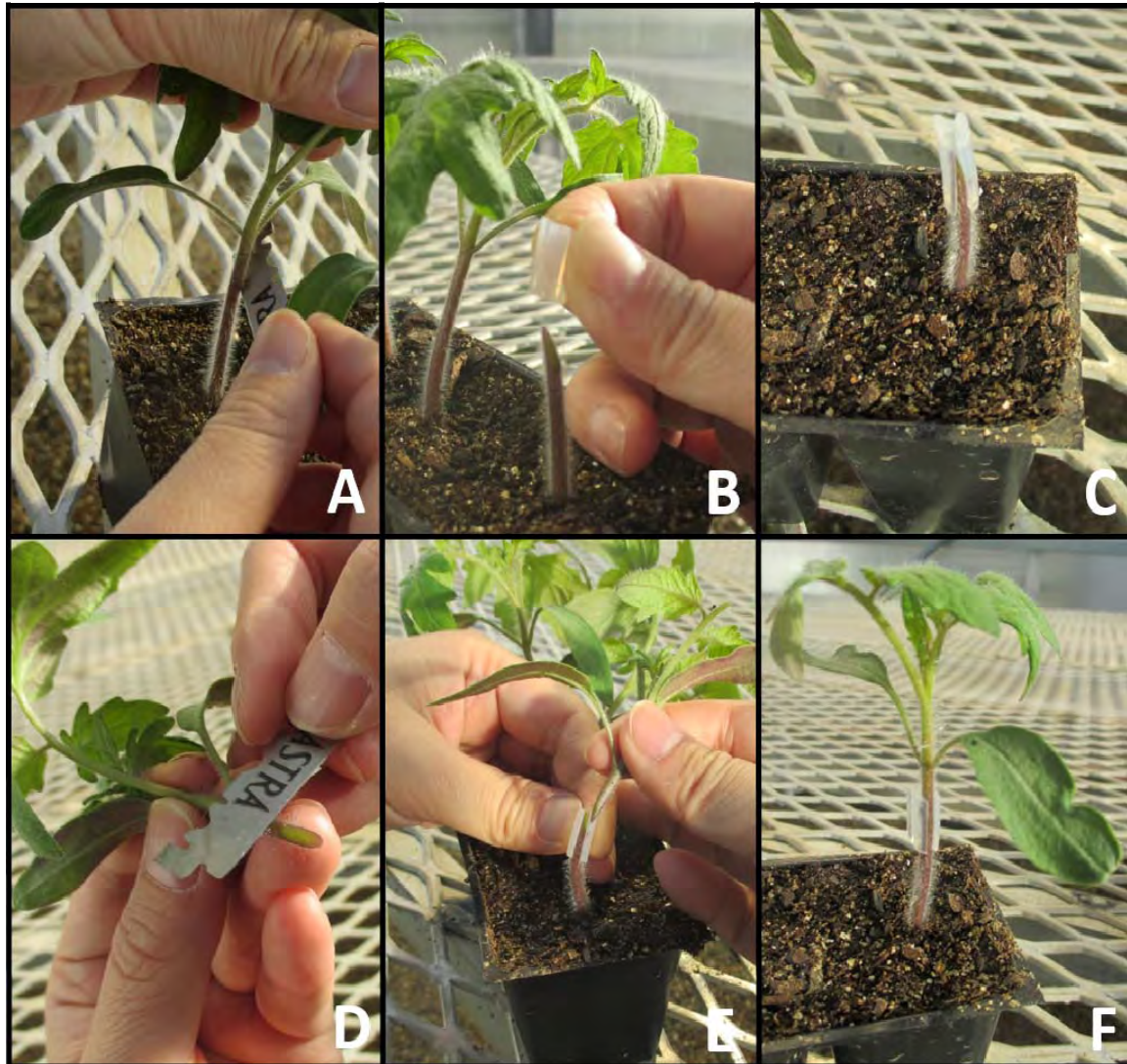
Grafted plants



Tomato, Eggplant, Pepper
Watermelon, Cucumber, Melon,



Tomato grafting





Vegetable as examples

Cucumbers

❖ Choose varieties

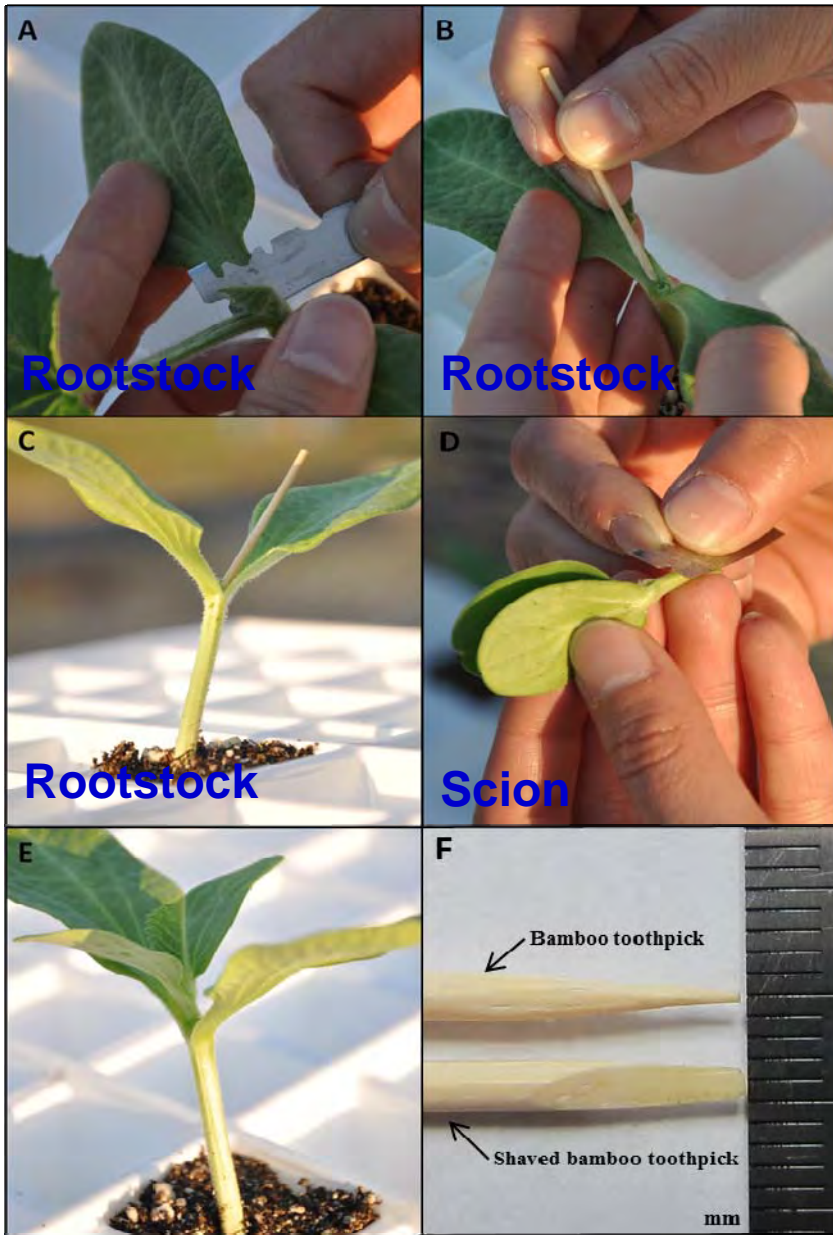
Slicer, Picklers, English (long), Beit Alpha



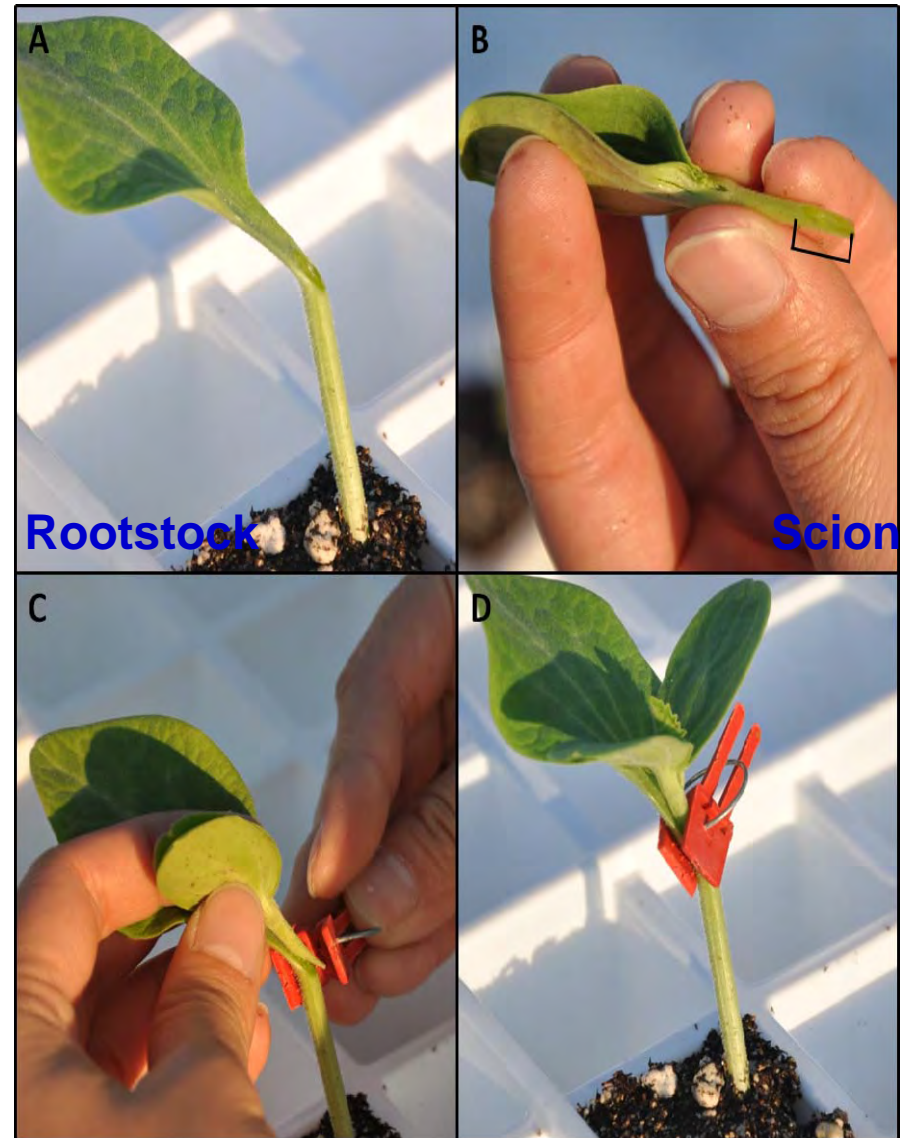
Parthenocarpic: do not need pollination

Gynoecious: all female flowers





Hole insertion

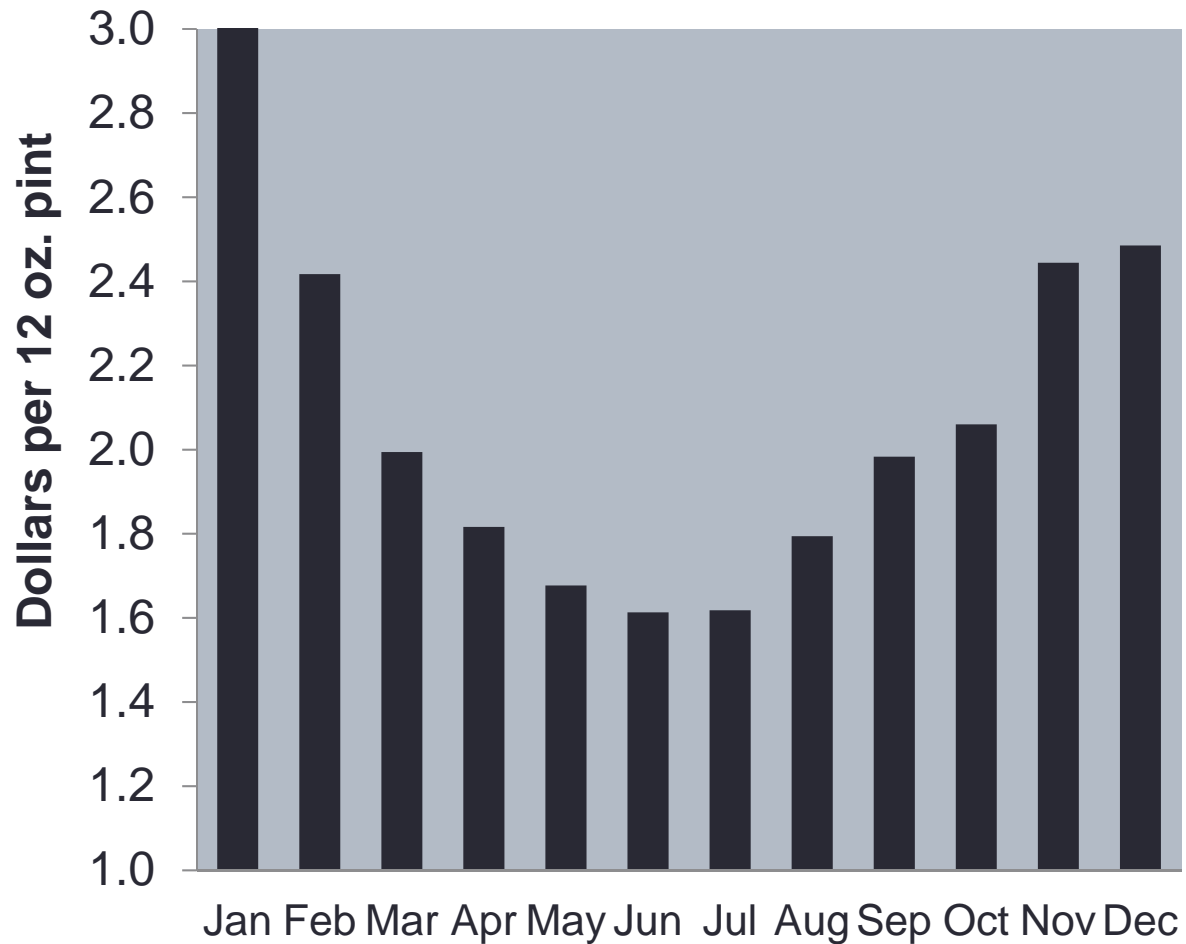


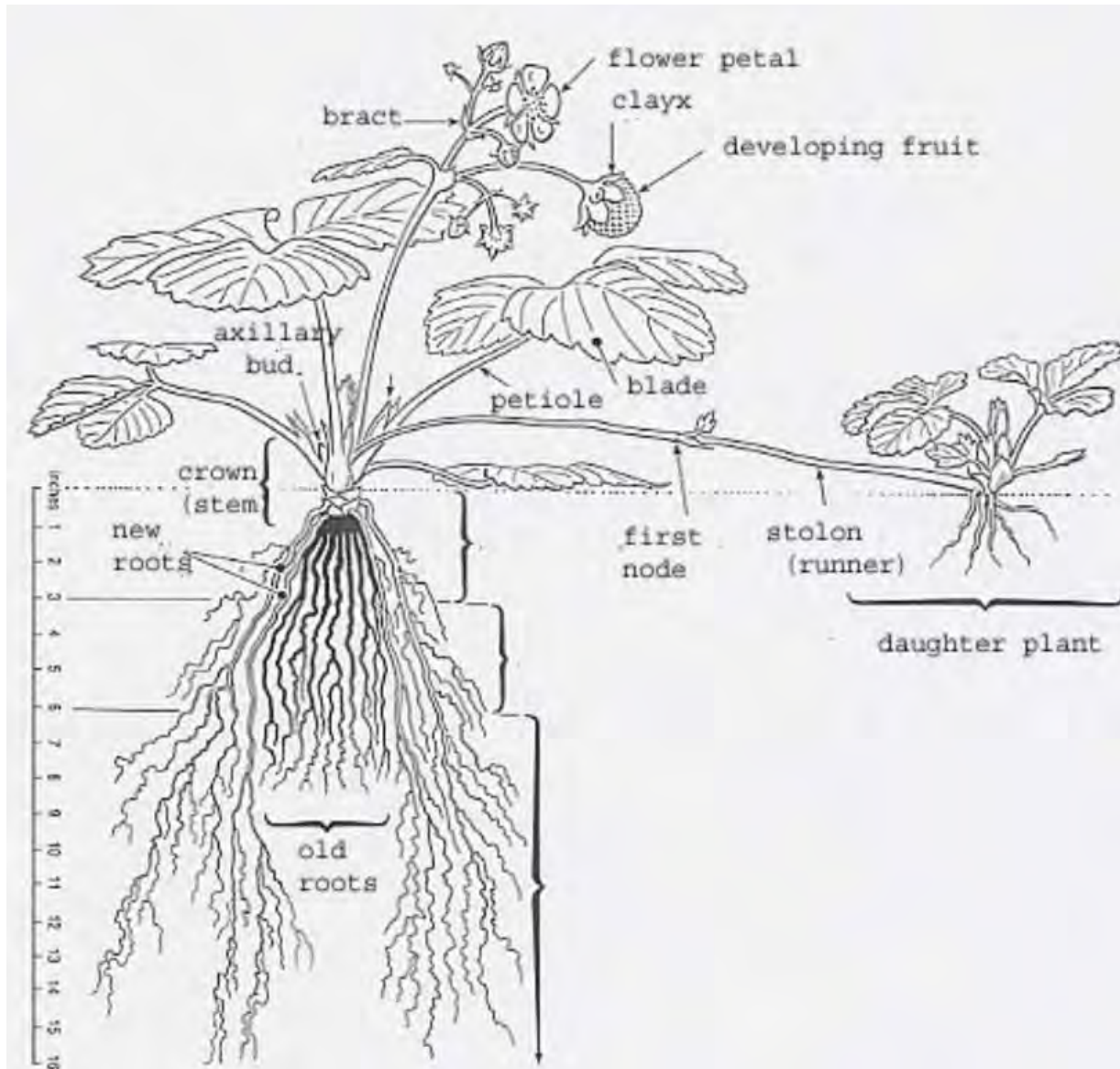
One-cotyledon



Vegetable as examples

Retail prices for fresh strawberries (2011)





June-bearer:
 require short day
 to initiate flower
 buds

Day-neutral:
 Insensitive to day
 length

Everbearing:
 initiate flowering
 under long days

(Integrated Pest Management for Strawberries, 1994)



Varieties	Marketable yield (lb/plant)	Average fruit weight (oz.)
Albion	1.70	0.87
Benicia	2.08	0.70
Camarosa	1.42	0.56
Camino Real	1.89	0.76
Chandler	2.17	0.54
Festival	1.88	0.72
Radiance	2.86	0.86
San Andreas	2.37	0.72
Sweet Ann	1.62	0.97
Sweet Charlie	1.69	0.59

