Paul Vossen

University of California Cooperative Extension 133 Aviation Blvd. Santa Rosa, CA 95403 (707) 565-2621 pmvossen@ucdavis.edu

http://cesonoma.ucdavis.edu



Specialty Crops for Sonoma County



Marketing

Satisfy Customer Needs



Listen to Your Customers

Keys to Success Know:

- Who Your Customer Is
- How Your Customer Thinks of Product
- Who Customer Defines as Competition
- What Your Customer Perceives as Reality
- How Your Customer Defines Values
- How to Reach Your Customer
- How to Change Your Customer's Perceptions

Why Direct Marketing?

- Large number of small farms more than 5,000 farms in county, with 65% under 5 acres
- Consumer awareness local consumers are familiar with and use a variety of direct marketing methods
- Well developed infrastructure supports production and distribution
- Strong and diverse local economy
- Way to get more \$\$\$

Advantages of Direct Marketing

- Increased profits farmers take over role of middlemen and capture bigger share of food dollar
- Improved cash flow transactions are mostly cash
- Marketing diversity due to less strict grading and packing requirements
- Small Farmer Friendly better suited for small volumes and variable quality
- Improved control over marketing helps farmers attain more control over prices
- Flexibility and diversity re: product mix

Advantages of Direct Marketing

- Helps introduction and test-marketing of new products
- Improved customer contact helps personalize business and develop customer loyalty
- Improved public relations allows farmers to tell their story to consumers
- It may be fun...for the right people!

Disadvantages of Direct Marketing

- Saturation and intense competition
- Requires special skills and abilities
- Requires special location re: land resources & local markets
- Volume is limited local market, resources and location
- Time requirement dealing with small stream of sales
- Personality requires patience & friendly, outgoing personality

Disadvantages of Direct Marketing

- Requires marketing skills farmer must deal with displays, pricing, quality control, packaging, etc.
- Legal restrictions may require a variety of licenses, permits and inspections
- Production Changes may require changes in production to extend season and to supply diversity of high value crops
- Additional costs re: insurance, advertising and promotion, sales, etc.

Direct Marketing Options

- U-Pick Operations
- Rent a Tree or Row
- Community Supported Agriculture (CSA)
- Mail Order
- Certified Farmer's Markets
- Roadside or Farm Stands
- Delivery Service (Restaurants, direct wholesale)
- Internet marketing

Farm Trails



Pick Your Own (PYO)







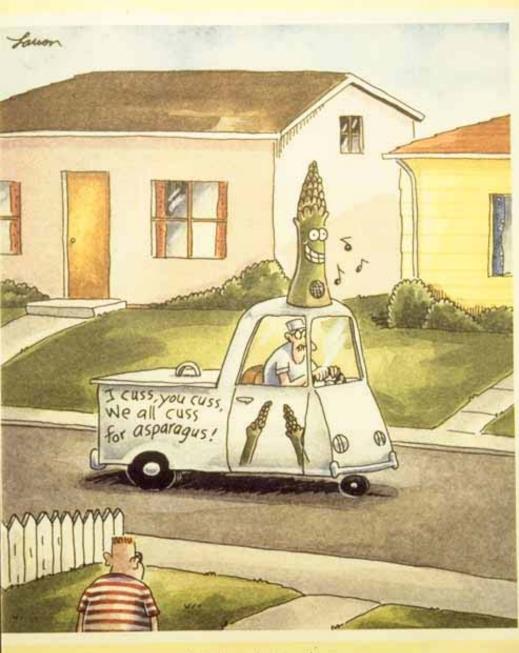


PYO Berries



Kid Attraction





Failed marketing ploys

Peddler



CSA Community Supported Agriculture

Subscription Membership Farm







· Para france

· Fill an Workle CA

* years that the safety

Bio-Fuels

· United States of the

· Santa Petition Control

CSA's

If you would like to be on a waiting list for a drop site in Santa Rosa or Petaluna, please exail

info@lagmafarm.com and we will add you to per drop abe waiting lim.

Decreed in CSA Reserve - 198 Tourisments is

A CROSS SHOWS

Mail Order Shipment



Farmers Market





Roadside Stand Attraction



Fruit Stand



Farm Store

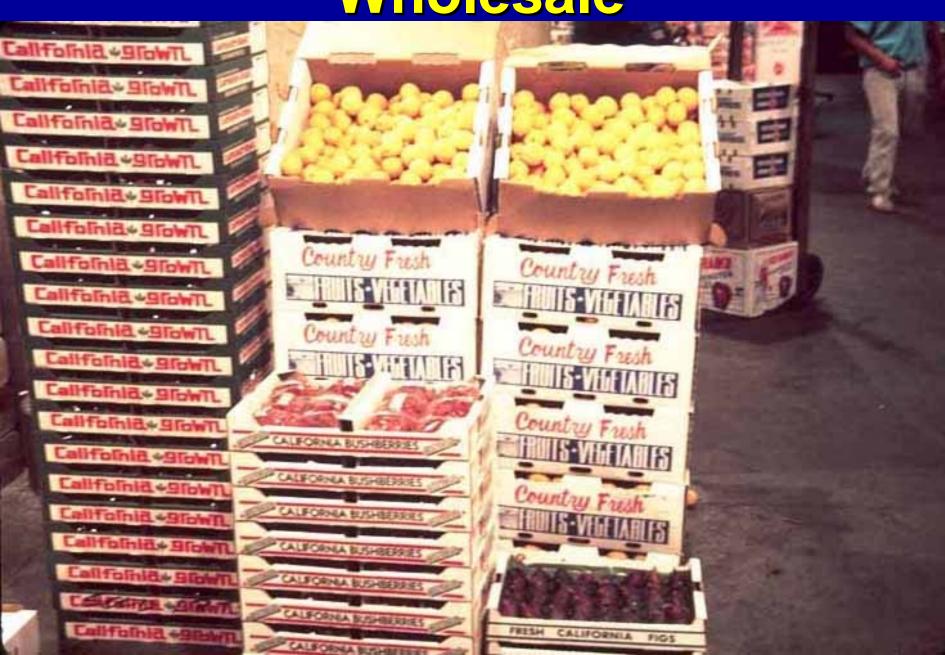




Tasting Room



Wholesale



Standard Pack



Specialty Markets







Meat Buying Club







University of California Cooperative Extension

Home

Delivery Spes

Local Meat Producers

B-----

Range to Plate

Schoma Direct

Hagemann Meat

Company

Join our mailing list!

Sonoma County Meat Buying Club



Have you heard of Community Supported
Agriculture and their wonderful vegetable boxes
filled with fresh local produce? Now you'll be able
to make the meal complete by also ordering locally
grown meats.

The University of California Cooperative Extension in Sonoma County is partnering with local meat producers to begin a program that will allow you to have a variety of locally grown meats delivered right to a central pick-up point. Members will receive a monthly delivery of Sonoma grown chicken, beef, ports, and lamb, plus much more...

- · recipes from Chef Steven May
- details about the ranches that raised your meats.
- We are starting to feature a local Agricultural Comipany each month through our club! There products will be available for members to purchase at the pick up locations that month-desander Valley Goornet is our featured producer of the month. We will be offering their home made pickets for purchase this month. For more information please eath bitpc//www.alvalgourmet.com/
- Last Morth's Featured Producer Peters' Chacolates is a couple specializing in home made shotolate truffels in Sebastopol. For more information please visit little (insters checolates, com/).
- June's order will include Grass Fed Beef from "Brand Cattle Company, pasture raised lamb from Don Gillardi of Red Hill Farm, and humanely raised pork raised from the Gleason Ranch, We will have pasture raised chickens from Gleason Ranch.

"Some sixhanger of equal value will be allowed (te exchange post to: lamb in the small orders)! We will have selected out skallable for exchange

	Calendar	
06/21/10	San Francisco Meat Pick op tor June	
00/22/10	Canvas Ranch Meat Pick up for June	
06/22/10	Tiena Vegetables kleaf Pick up fordune	
06/25/10	Relish Culmary Adventures Meat Pick up for Jane	
06/24/10	Laguna Farms June Meat Pick Up	
	Show All Events	

What's New?!

June is almost Here!

The June Shipment will be available for pick up:

Monday June 21st from 4:30pm to 5:00pm in San Francisco Tuesday June 22st from 5:30pm to 7:00pm at Tierra Vegetables and Canves Ranch Tuesday June 22st from 4:30pm to 5:00pm at Canvas Ranch Wednesday June 23st from 5:30pm to 7:00 pm at Reliah Culinary Center Thursday June 24st from 5:30pm to 7:00 pm at Laguna Farms

Please feel free to stop by the Tierra Vegetables (Tuesday), Relish Cullnary Adventures

Cullnary Adven

Davero



Our Farm

Olive Oil Wine

Pantry Our Club

Tours/Classes Trees

Recipes

Slideshow

Online Store

registered customer? email:

password:

(Not registered? No problem - you can register once you've completed your order.)

le b

Oil & Vinegar

Herbs & Jams

Cosmetics

Clothing

Click any tab

Welcome to the DaVero Storel

We think you'll find this store really easy to use.

Just click on any of the tabs above (such as 'Gifts'), and you'll see a list of all of our products in that category. Click on any product to see its details, which will show up in the green panel to the right.

The shopping cart is below (scroll down if you can't see it). It automatically calculates shipping cost and sales tax - once you've entered the shipping address, of course - along with any discounts.

How to save on shipping: Unlike many online merchants, we pass through shipping at our cost. The first pound costs us the most, so by ordering two or more items you'll pay much less freight per item.

To see these instructions at any time, just click on the 'Help' link, above. And if you have questions, feel free to give us a call at (707) 431-8000 - we're always happy to hear from you.

Thanks!

Note: Save on your whole order when you buy 6 or more bottles of any of our wines, olive oils, or vinegars!

Order 6-11 bottles and save 10%; 12-23 saves you 15%; and 24 or more saves you 20%!



If you have a promotion code, please enter it here:

Order Summary

Shipping Method: Ground

Shippina Information

Billina Information:

Web Sales



Many Choices

- Fruit Trees
- Grapes
- Christmas Trees
- Berries
- Vegetables
- Cut Flowers
- Herbs



Orchard Planning Puzzle

- Soil
- Rootstock
- Variety
- Climate
- Management



Keys to Successful Fruit Trees

- 1. Right Variety Right Rootstock
- 2. Plant high (mound)
- 3. Spacing ~ 12 ft. for 9' tall tree
- 4. 100% weed control (mulch)
- Zero drought stress (water every day)
- 6. Adequate fertilizer
- 7. Thin fruit
- 8. Control Pests
- 9. Pruning = head low, thin & spread branches to open trees at 45°-65° angles, manage vigor, (peaches & nect. cut out 50%, all others cut out 20%)

Types of Fruit Trees

- Nuts (Almond Prunus, Walnut & Pecan Juglans, Chestnut – Castanea, Filbert – Corylus, Pistachio Pistacia sp.)
- Stone Fruits (Peach and Nectarine Prunus persica, Apricot P. armeniaca, Plum P. salicina, Cherry P. cerasus, etc.)
- Pome Fruits (Apple Malus domestica, Pear Pyrus sp., Quince Cydonia)
- Fig (Ficus)
- Olive (Olea europaea)
- Citrus (Orange, lemon, grapefruit, mandarin, Citrus sp.)
- Persimmon (Diospyrus sp.)

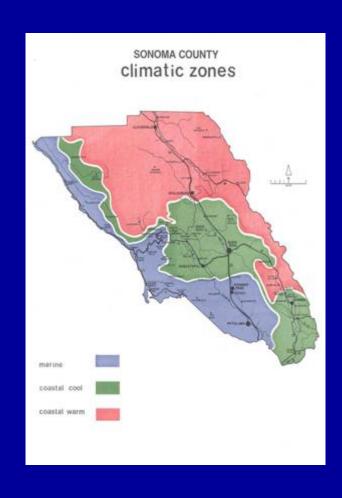
What Conditions Are Best For Fruit Trees?

Regional Conditions

- Mild to cold winter (400 to 1,000 hours chilling)
- Dry spring and summer
- No frost at bloom (April)

Local Conditions

- Deep, well drained soils
- Lack of weed competition



Apple Variety Selection

- Traditional varieties
- New specialty varieties
- Antique varieties
- Disease resistant varieties
- Early mid season late varieties

Traditional Varieties

- GoldenDelicious
- Red Delicious
- Fuji
- Gala

- Granny Smith
- YellowNewtown
- Rome Beauty
- Gravenstein















New Specialty Varieties

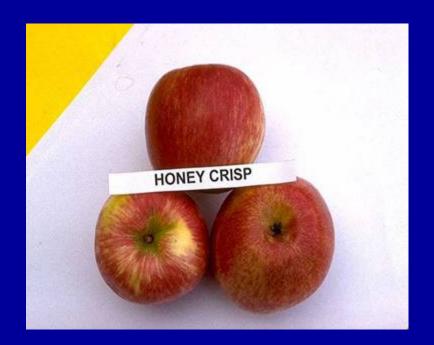
- Braeburn
- Pink Lady
- Jonagold
- Pink Pearl
- Pacific Rose
- Tsugaru
- Arlet
- Cameo

- Empire
- Ginger Gold
- Golden Supreme
- Honeycrisp
- Kinsei
- Orin
- Pinova
- Ambrosia











Antique Varieties

- Jonathan
- Sierra Beauty
- Arkansas Black
- Northern Spy
- Spitzenburg
- MacIntosh
- Hawkeye (original Red-Del)

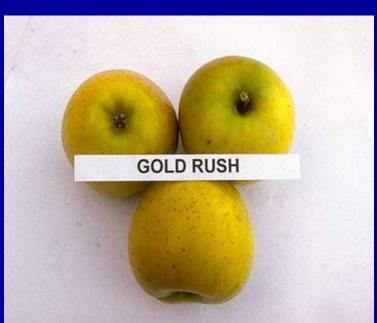


Disease Resistant Varieties

- Coop 25
- Coop 29
- Coop 37
- Empire
- Enterprise (Coop 30)

- Florina-Querina
- Goldrush
- Liberty
- Pristine
- Williams Pride









Early Varieties

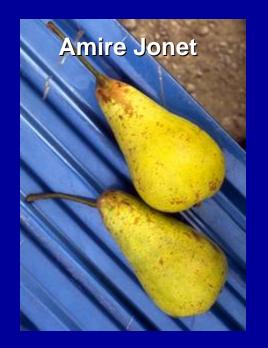
- Vista Bell
- Jerseymac
- Paulared
- Akane
- Mollygold
- Sunrise
- Williams Pride
- Primgold
- Pristine

- Sansa
- Ginger Gold
- Jonamac
- Summerred
- Arlet
- Earligold
- Gala
- Gravenstein

Pear Varieties

- Amire Joanett
- Bartlett
- Seckel
- Berre' Hardy
- Tarusa Crimson
- D'Anjou
- Bosc
- Red Clapp
- Comice
- Winter Nellis

- Shinseiki
- 20th Century
- Chojuro
- Hosui
- Shinko
- Tarusa Crimson
- Kikusui
- Niataka
- Yali
- Suli









D'Anjou



Seckel







ASIAN PEARS









Asian Pear Set







Apricot Varieties

Autumn Royal
Blenheim (Royal)
Flora Gold
Harcot
Katy
Moorpark
Royal Rosa
Tilton

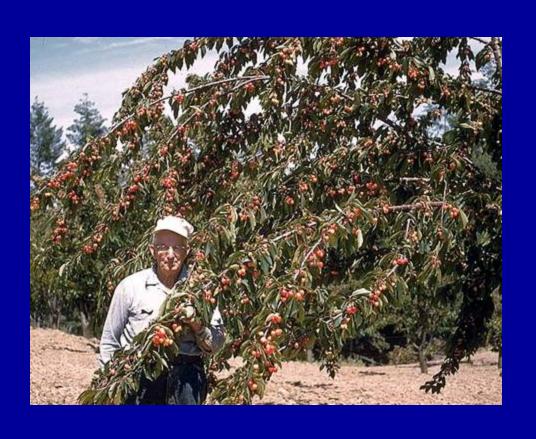


Wenatchee Moorpark



Cherry Rootstocks

- Colt
- Giesla series
- Maheleb
- Mazzard
- Stockton Morello
- Vladamir



Standard Size Cherry Tree



Smaller Cherry Trees (rootstock – training)





Space 8 to 12 ft. apart

Cherry Varieties

- Early Burlat
- Bing
- Black Tartarian
- Brooks
- Lambert
- Rainier
- Royal Ann
- Stella
- Montmorency
- North Star Meteor
- Utah Giant



Packing Cherries



Yellow Flesh Peaches

- Suncrest
- Springcrest
- June Crest
- Fay Elberta
- Red Haven
- O'Henry
- Veteran
- Loring
- Fair Time
- J-H Hale
- Indian Blood
- Frost



White Flesh Peaches

- Arctic Supreme
- Arctic Gem
- Babcock
- Giant Babcock
- Sugar Lady
- Nectar
- Strawberry
- White Lady



Nectarine Varieties

- Arctic Glow
- Heavenly White
- May Glow
- May Grand
- Summer Grand
- June Glow
- Double Delight
- Fantasia
- Flamekist
- Flavortop
- Goldmine
- Late LeGrand

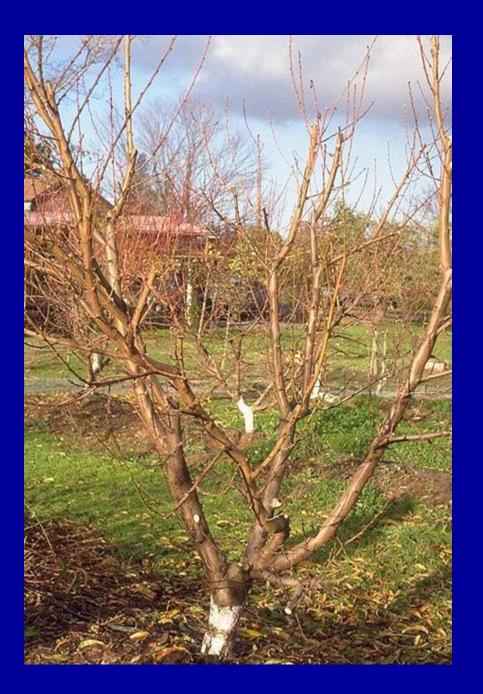




Indian Blood Peach

Lovell and Citation Rootstocks







Plum & Prune Varieties

- Beauty
- Burgundy
- Catalina
- Elephant Heart
- El Dorado
- Friar
- French Prune
- Green Gage
- Stanley
- Santa Rosa
- Satsuma
- Shiro
- Golden Nectar
- Howard Miracle





bear on shoots and spurs









Dried Fruits & Nuts





Why Olive Oil?

- Lower grade soils
- Easy to grow
- Few pests
- Low water use
- Lower quality water

- Mechanized
- Healthy tastes good
- Big market
- Vertical integration
- Sales all year





Condiment Oil

- Olive oil is not just a FAT
- Spice to Flavor Food



Н

Ε

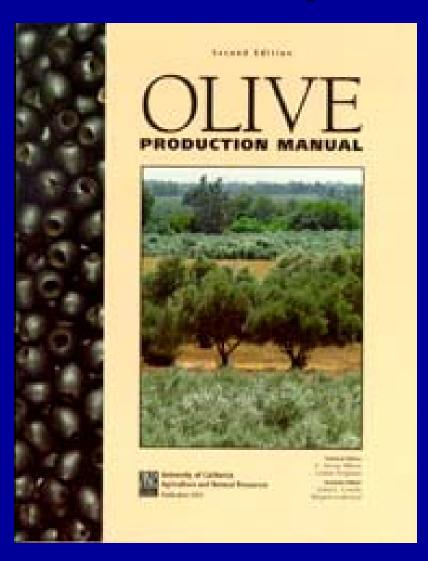
A

L

Ţ

Н

Revised Olive Production Manual University of California # 3353



- Climate & Site Selection
- Botany Cultivars
- Physiology
- Pruning
- Irrigation
- Nutrition
- Pests
- Harvest

Organic Olive Production Manual

information for growers on production issues, economics, pest control, the conversion process, and organic certification and registration.

This manual provides detailed sing this manual you'll learn about orchard site selection

considerations, irrigation needs, terrain, temperature, soil, damage from the olive fruit fly, and how these may vary for table fruit versus fruit for oil production. You'll also learn how to evaluate harvest methods-an important consideration as

harvest costs typically amount to half the total production cost for olives.

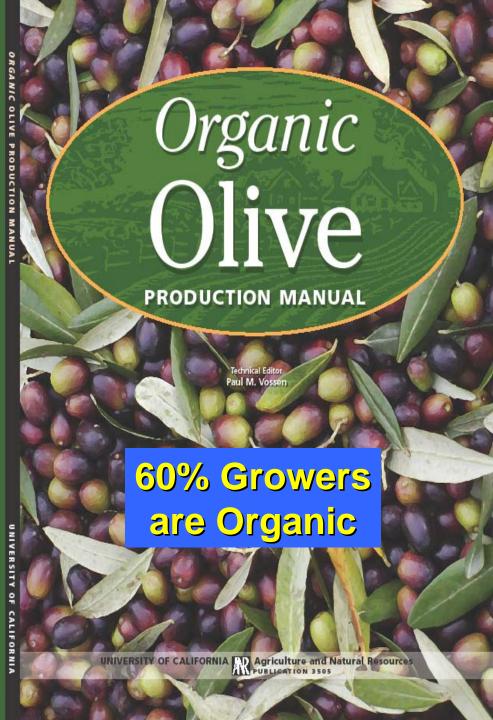
This manual has been developed as a supplement to the Olive Production Manual, 2nd Edition, (3353). Organic growers are advised to consult both publications as they develop and refine their production systems.

Also from the University of California, two companion publications for olive growers:





Printed in Canada



Old Large Olive Trees







Boutique Industry

- Coastal & Foothill areas
- Small acreage
- Specialty varieties
- Vertical integration (fruit-oil-marketing)
- Attractive bottles
- Specialty marketing
- Prestige
- High prices low volume high costs
- Creates a good market for everyone



Acres planted in CA in

the last 15 years ~ 3,000

Boutique Production - CA

Cultural Operations

~ \$1,000

Harvest & Transport (\$350/ton)

~ \$1,000

Processing, Storage, Marketing, Overhead, Capital Recovery

Yield of 2.5 tons per acre @ 45 gallons per ton

Cost \$ 80 per gallon and 500-ml bottle is \$11.15





Retail \$ 175-300/gallon



Paul Vosser

Oil Varieties

- Any variety will work
 - Big or Small
 - Oil content, flavor style, cold & disease resistance
- Well known with potential
 - Frantoio
 - Leccino
 - Coratina
 - Taggiasca
 - Ascolana

- Arbequina
- Picual
- Hojiblanca
- Picudo
- Mission

Best Oil Varieties













Best Oil Varieties













Style Generalities

<u>Mild</u>

- Arbequina
- Ascolana
- Empeltre
- Kalamon
- Leccino
- Pendolino
- Maurino
- Picudo
- Sevillano
- Taggiasca

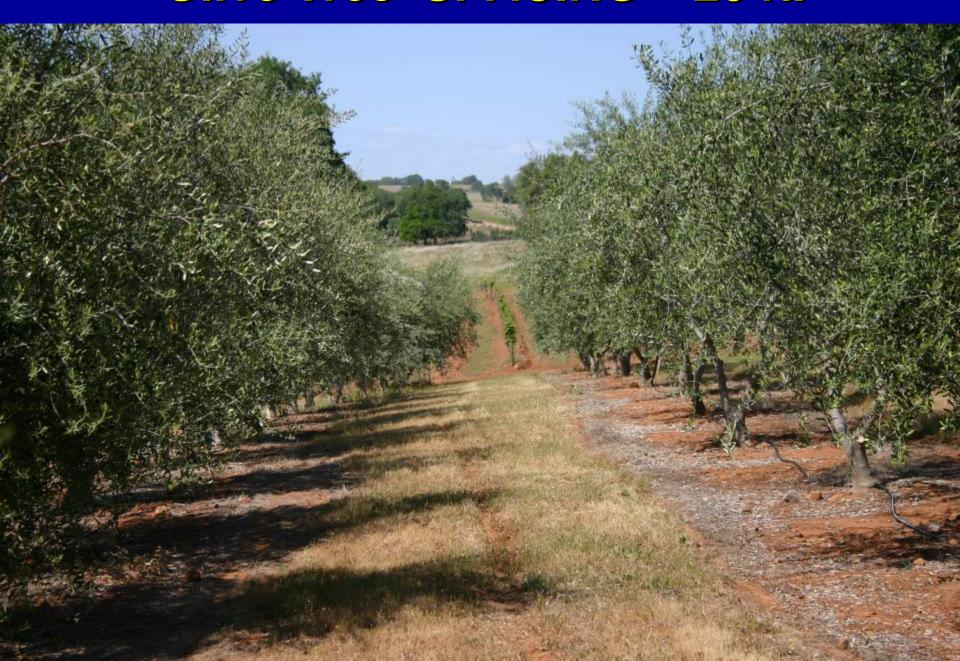
<u>Medium</u>

- Aglandau
- Barnea
- Bosana
- Bouteillan
- Farga
- Hojiblanca
- Manzanillo
- Mission

Strong

- Arbosana
- Chemlali
- Coratina
- Cornicabra
- Frantoio
- Koroneiki
- Moraiolo
- Picual
- Picholine

Olive Tree SPACING - 20 ft.

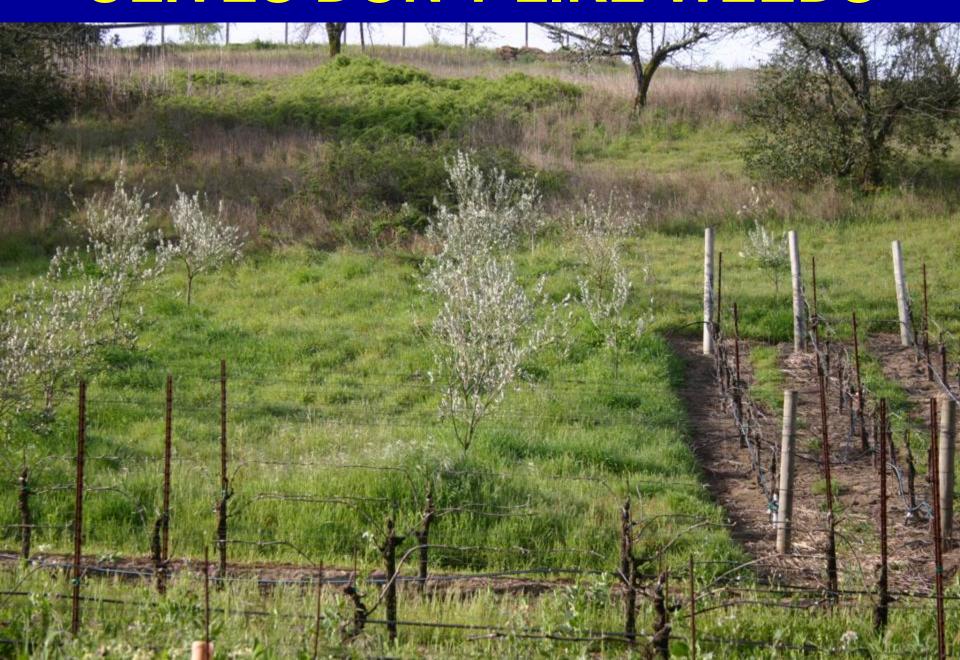




Copper After Harvest



OLIVES DON'T LIKE WEEDS









Trunk shaker and inverted umbrella WRAP **AROUND**





Continuous Flow System









Paul Vosser

Locally produced, fresh, great flavor



Olive Oil Positive Characteristics

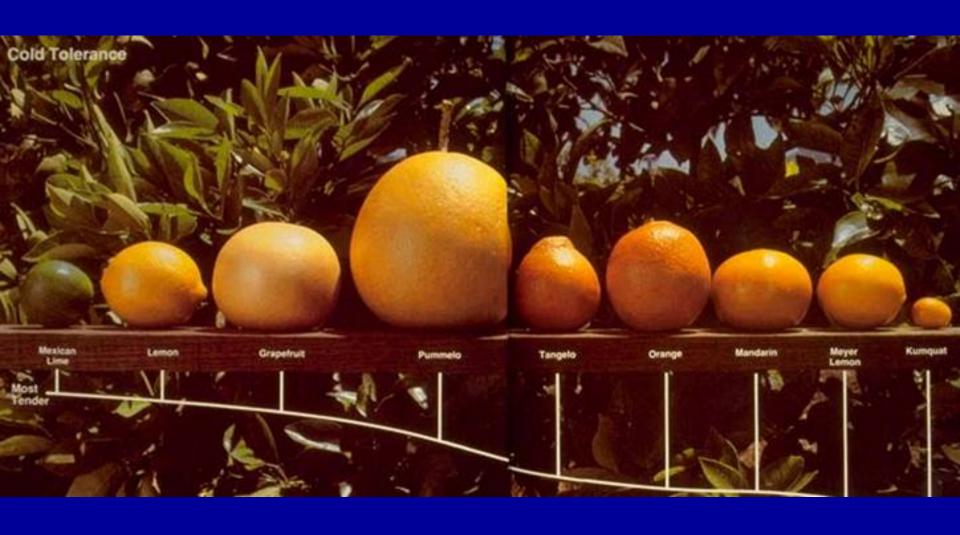


Growing Citrus

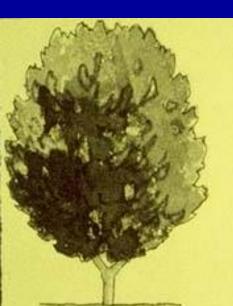




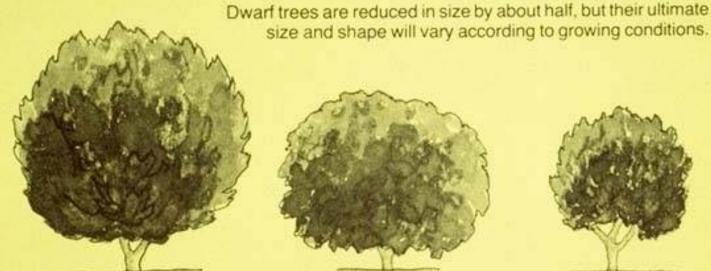
Citrus Cold Tolerance



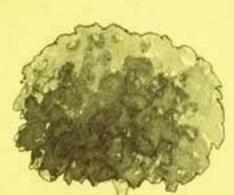
Citrus Size Control Variety and Rootstock



8 to 10 feet: 'Eureka' lemon 'Lisbon' lemon 'Ponderosa' lemon



8 to 10 feet: 'Valencia' orange Grapefruits Navel oranges



6 to 8 feet: Mandarins **Blood oranges** Tangelos (varieties may differ)



3 to 6 feet: 'Calamondin' Kumquats Limequats Orangequats







Cold Protection for Citrus





Mandarins are cold hardy

Seedless if only Clementine and Satsuma are present

Berger on bubbly Tips for choosing the right sparkling wine - and for avoiding a hangover

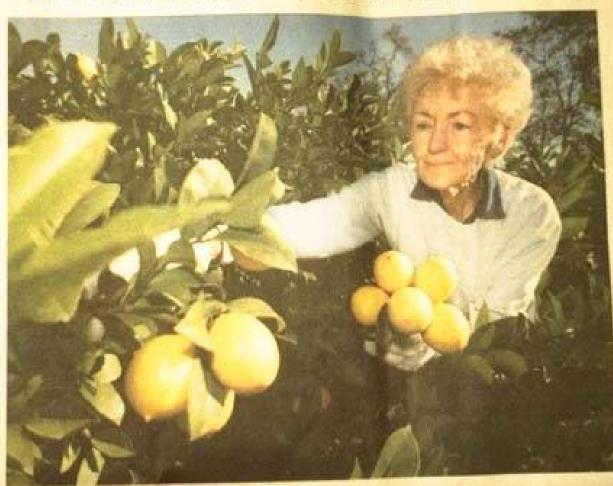


Quick su Make quick of holiday se dinner with Tin Mentloo

Santa Rosa, California, Wednesday, December 30, 1998

02

With a wonderful floral fragrance and a taste that's owester and not as sharp, the Meyer is not your ordinary lemon, as chefs from such places as Chez Panisse and French Laundry will attest



A resty branchister with Marge Feshen kommitt Meyer tement. thought to be al course Autories either a lemon and STREET, ST. Leaven and mandarin, in the back yard of her Napa home. The Fesketts" September, Napa Falley Mayor Lemons, supplied searly 35,000 Semont to contaments and stores fair MARKET.

PERSONAL PROPERTY.

Growing Feijoa





Growing Figs

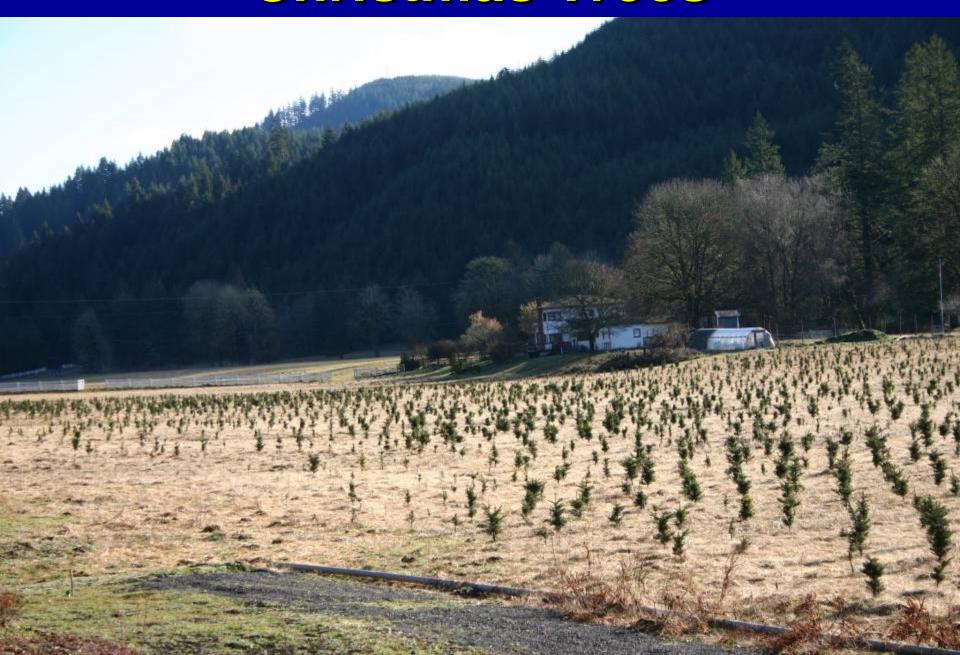




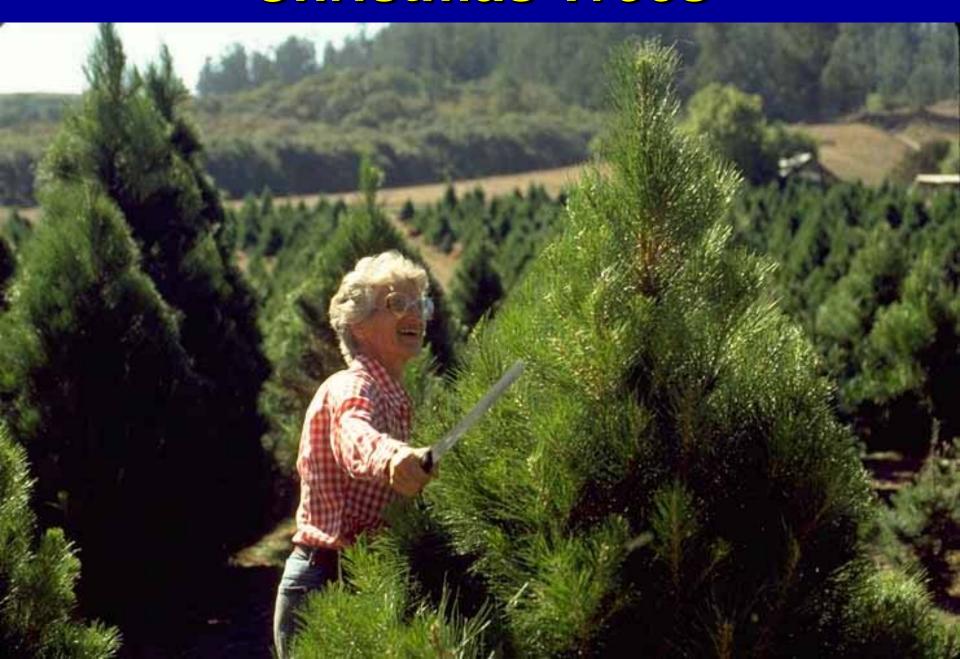
Figs bear on current season's shoots



Christmas Trees



Christmas Trees



Berry Types

- Blueberries (Vaccinium species)
- Raspberries (Rubus species)
- Blackberries (Rubus species)
- Strawberries (Fragaria species)
- Currants (Ribes species)
- Gooseberries (Ribes species)
- Mulberries (Morus species)

Blueberries



- Soil pH
- Varieties
- Plant age and size
- Plant spacing & depth
- Irrigation
- Fertility (nutrition)
- Pruning
- Pest control (weeds, insects, disease, birds)

Blueberry - Old Varieties

```
Early Blue - Med. size, good flavor; erect, very susceptible to root rot.
Duke - Med. size, firm, good flavor; vigorous, erect, open, productive.
Spartan - Very large, firm, excellent flavor; erect, open, productive.
<u>Patriot</u> - Very large, excellent flavor; vigorous, erect, very productive.
Collins - Large, firm, excellent flavor; medium-sized, productive plant.
Bladen - Medium sized, vigorous upright growth, low chill.
Blue Ray - Very large, firm, excellent flavor; vigorous, erect, productive.
Chandler - Extremely large, excellent flavor; moderate vigor.
Blue Crop - Very large, firm, good flavor; vigorous, erect, productive.
Rancocas - Very small with intense flavor; vigorous, dense, bush.
Berkeley - Very large, firm, mild flavor, vigorous, spreading, productive.
Nelson - Very large, excellent flavor; vigorous, high yielding.
<u>Darrow</u> - Medium-sized, firm, excellent-flavor; erect, productive.
<u>Late Blue</u> - Large, firm, good flavor; vigorous, erect, productive.
Elliott - Medium sized, mild flavor, tart, vigorous, erect, productive.
```

In order of ripening - Early to Late

Blueberry - New Varieties

- <u>Biloxi</u>
- Blue Crisp
- Cape Fear
- <u>Dublin</u>
- Echota
- Emerald
- Georgia Gem
- Golf Coast
- <u>Jewel</u>
- <u>Jubilee</u>
- Legacy
- Magnolia

- Marimba
- Misty
- Nui
- O'neal
- Ozarkblue
- Reka
- Revielle
- Sampson
- Santa Fe
- Sharpblue
- Sierrra
- Southmoon
- Star
- Toro







Some of the Best New Varieties











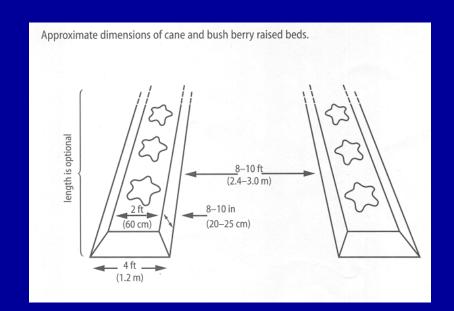
Spread compost 1 ft. thick – till in – form raised beds





Spacing 4-10 ft.

















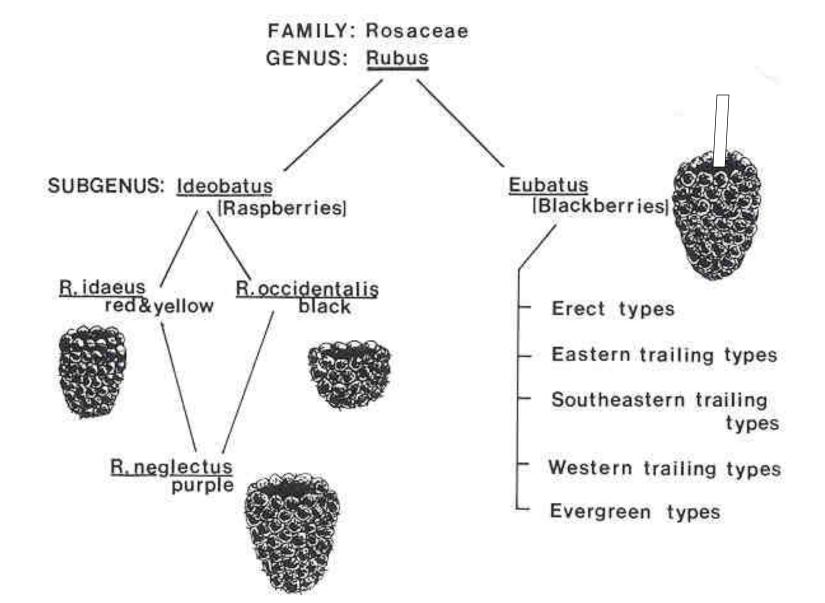
Blueberry Clusters



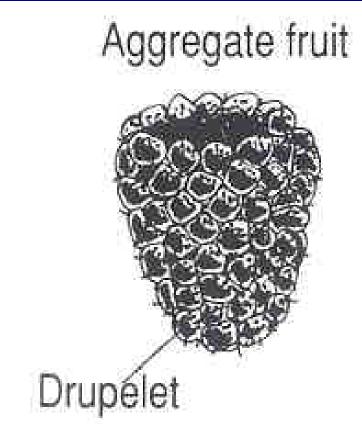
Raspberries

- Types
- Varieties
- Soil Drainage
- Spacing
- Irrigation
- Fertility
- Pruning
- Pest Control















Red Raspberry Varieties

Summer Bearing
 Earlier spring

Fall Bearing
 June to October



Summer-bearing cultivars

<u>Canby</u> - Medium to large, bright red, and firm. Susceptible to root rot.

<u>Chilcotin</u> - Large, bright red, firm. Productive but susceptible to root rot.

<u>Chilliwack</u> - Large, bright red, firm, excellent flavor, resistant to fruit rot.

<u>Comox</u> - Large, medium red, firm, fair flavor, and resistant to fruit rot.

<u>Haida</u> - Medium sized, firm, good flavor. Some root rot resistance.

<u>Meeker</u> - Medium to large, medium color, firm, good flavor.

<u>Newburgh</u> - Large, light red, medium firm; resistant to root rot.

<u>Nootka</u> - Med. sized, med. red, firm, productive; susceptible to root rot.

<u>Skeena</u> - Med. large, bright red, firm, good flavor, susceptible to root rot.

<u>Sumner</u> - Med. size and color, firm, excellent flavor. Most tolerant of wet soils.

Tulameen - Large, firm, excellent-flavored berries. High yielding.

Willamette - Large, dark red, firm, mild. Susceptible to root rot.

Fall-bearing cultivars

<u>Amity</u> - Medium size and color, very firm, good flavor. Susceptible to root rot <u>August Red</u> - Early maturing. Fruit is medium, bright red, soft, good flavor <u>Autumn Bliss</u> - Large bright fruit, good flavor, very productive <u>Bababerry</u> - Very large, soft, good production. Canes tolerant to summer heat. <u>Caroline</u> - Very large, firm, productive, early, heat and wet tolerant <u>Fall Red</u> - Fruit is small, red, fairly firm, good flavor. Vigorous and productive. <u>Heritage</u> - Medium, red, very firm, attractive, very mild flavor. Sturdy canes. <u>Indian Summer</u> - Very aromatic, crumbles frequently, good flavor, productive <u>Jaclyn</u> - Very large, productive, early, good flavor. <u>Redwing</u> - Ripe 2 weeks before Heritage. Med. size, firm, good flavor. <u>September</u> - Medium, bright red, firm, attractive, good quality. <u>Summit</u> - Matures about 10 days earlier than Heritage. Fruit is similar in size

and firmness, but slightly darker.

Black Raspberry Varieties

Munger - Fruit is small, blue-black, firm, good flavored and matures in July; canes are intolerant of wet soils.

Bristol - Inferior yield and quality compared to Munger; small black firm fruit – midseason

Cumberland - Inferior yield and quality compared to Munger. Small black fruit, good flavor.

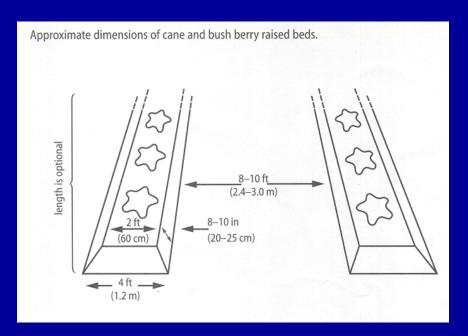
Gold Raspberry Varieties

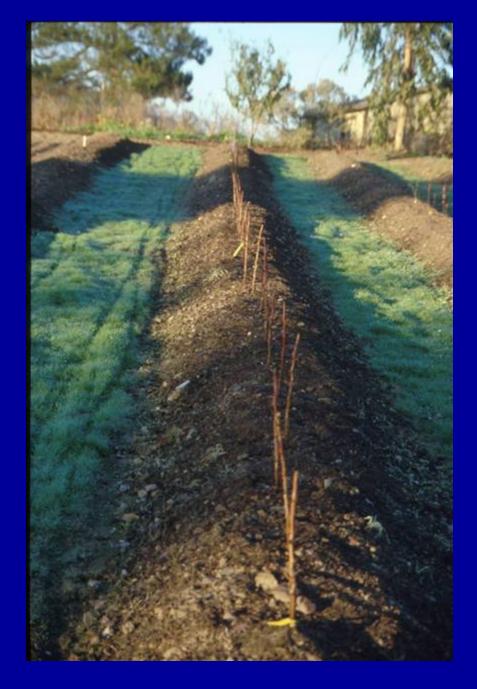
- **Fall Gold** Ripens ten days prior to Heritage. Fruit is yellow, moderately firm, very good flavor, with moderate to poor production. It often is virus infested.
- Gold Harvest yellow colored Heritage
- Kiwigold sport of Heritage from NZ
- Anne Heritage season pale yellow

Purple Raspberry Varieties

- Royalty Summer-bearing, very large, soft when fully ripe, fruit that is sweeter than Brandy wine. Highly productive. Suckers are produced from the roots like red raspberries.
- Brandywine Summer-bearing, large, round, reddishpurple, tart. Plant habit is similar to black caps, but more vigorous. No root suckers are formed. One of the best for pies.
- <u>Amethyst</u> Summer-bearing, fruit large, oval, purple with shiny skin, firm, excellent for desserts. No root suckers are formed. Very productive.
- **Success** Summer-bearing purple, sweet, good flavored fruit; vigorous canes.

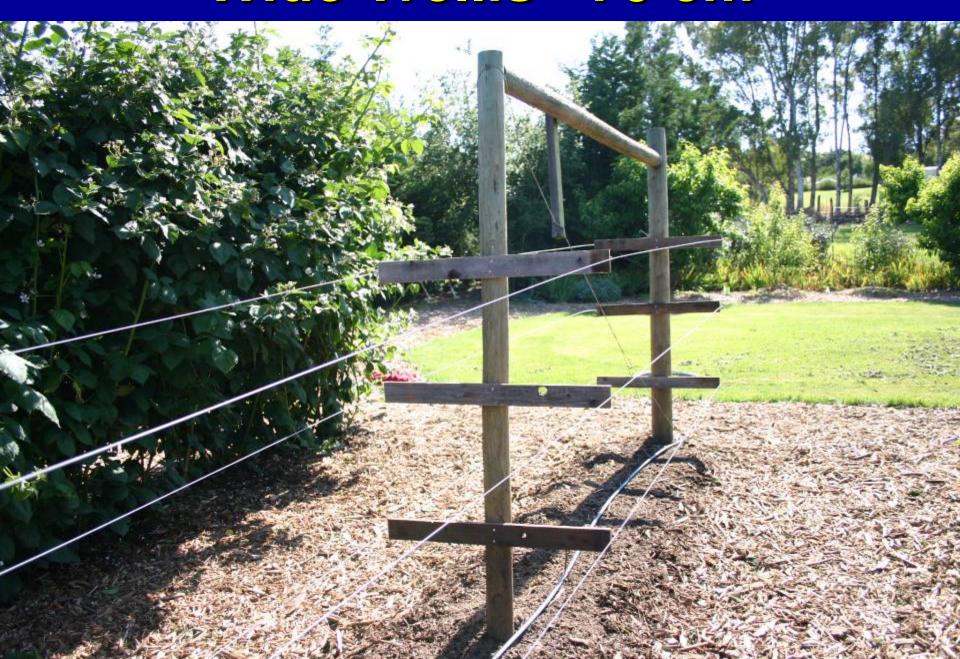
Raspberries must be planted on raised beds space 1' x 10'







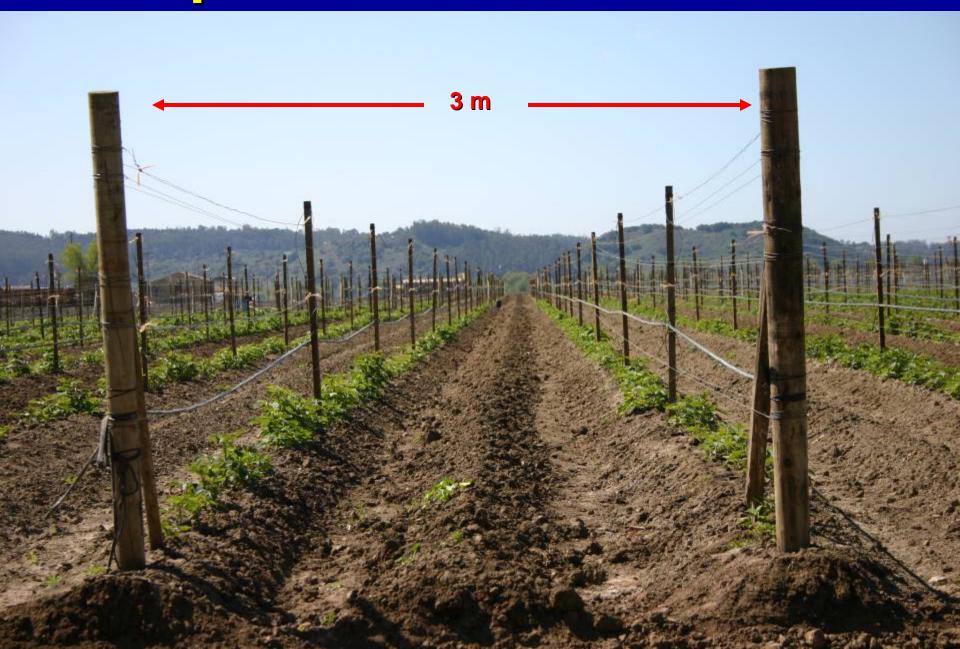
Wide Trellis - 70 cm







Raspberries - Narrow Trellis



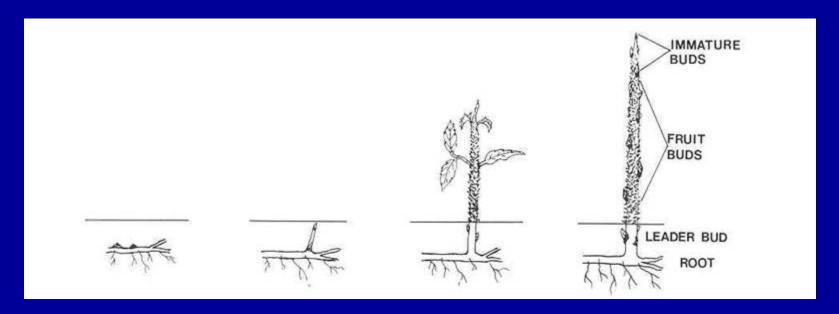
Narrow Trellis - Raspberry





Floricanes from last year

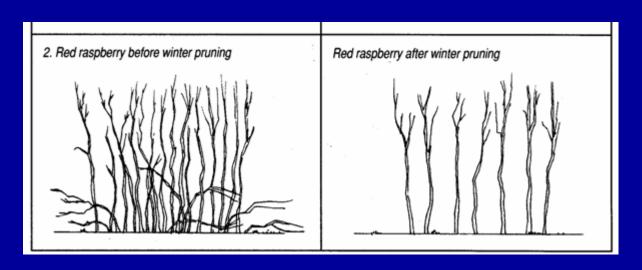
Primocanes from this year





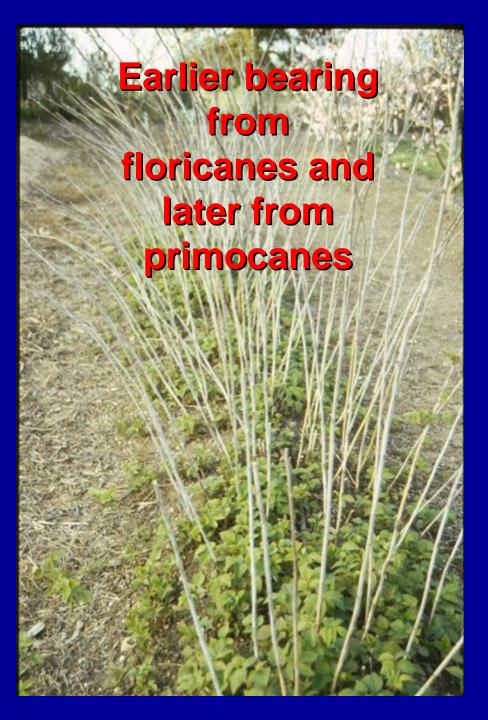
Root suckers
=
primo-canes

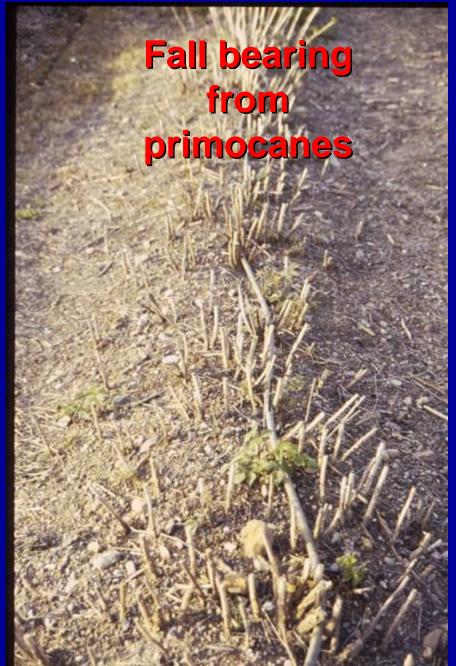
Overwinter = flori-canes













Raspberry Irrigation



Blackberries

- Types
- Varieties
- Soil Drainage
- Spacing
- Irrigation
- Fertility
- Pruning
- Pest Control



Trailing Blackberries

- <u>Boysen (Nectar Berry):</u> Mid-season; very large, deep maroon, soft, excellent distinct flavor; canes thorny, but thornless types available; tolerates heat.
- Kotata: Mid-season; berries large, firm, good flavor, thorny, vigorous, productive.
- <u>Logan:</u> Early; medium size, long, dark red, soft, excellent, unique flavor; thornless
- <u>Marion:</u> Mid-season; large, bright black, firm, excellent flavor, thorny, productive.
- <u>Ollalie:</u> Mid-season; large, bright black, firm, good flavor, vigorous, productive.
- <u>Silvan:</u> Early, large, firm, excellent flavor, thorny, productive.
- *Tayberry:* Early; large, medium red, soft, flavor distinctive, thorny.
- **Thomless Evergreen:** Late; medium, firm, mild flavor, productive.
- Waldo: Mid-season; medium size, firm, mild flavor, thornless, productive.
- Young: Mid-season; very large, maroon, sweet, excellent flavor.

Erect Blackberries

- Black Satin: Mid-season; large, shiny black, tart flavor, thornless, vigorous.
- <u>Cherokee</u>: Mid-season; medium large, firm, vigorous, thorny; tolerates heat.
- <u>Cheyenne</u>: Early; very large, firm, vigorous, thorny, tolerates heat.
- **Chester:** Late; large, tart, thornless, very productive.
- <u>Darrow:</u> Vigorous, thorny, productive, large glossy fruit.
- Hull: Vigorous, thornless, sweet excellent flavor.
- <u>Shawnee</u>: Mid-season, very large, firm, vigorous, thorny, very productive; tolerates heat

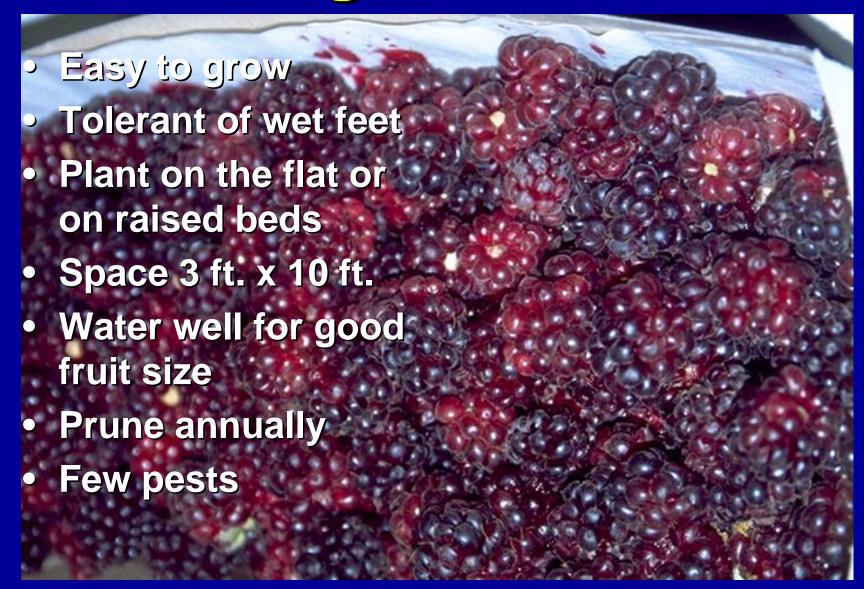
Logan





Wild

Growing Blackberries

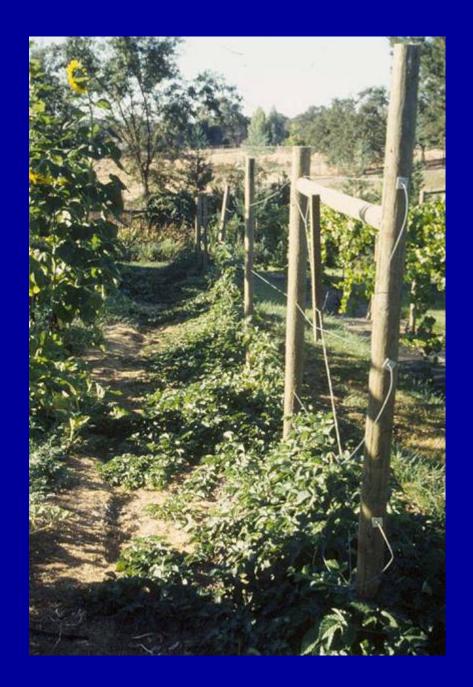


Trailing and Erect Blackberries



Blackberry Trellis System











Blackberry Harvest



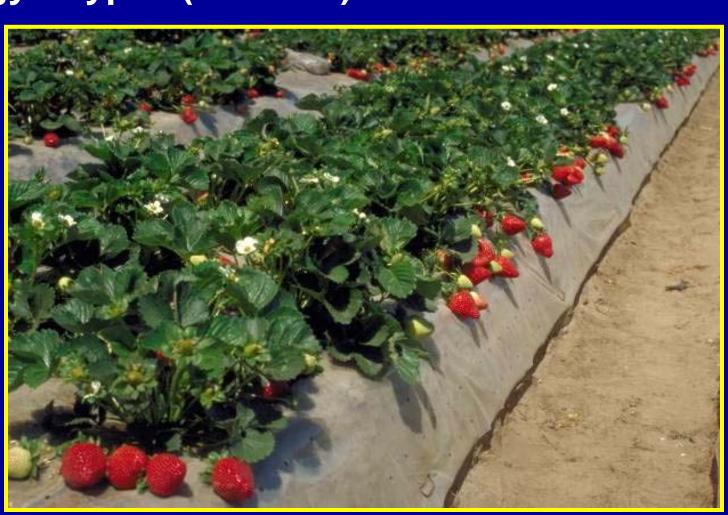


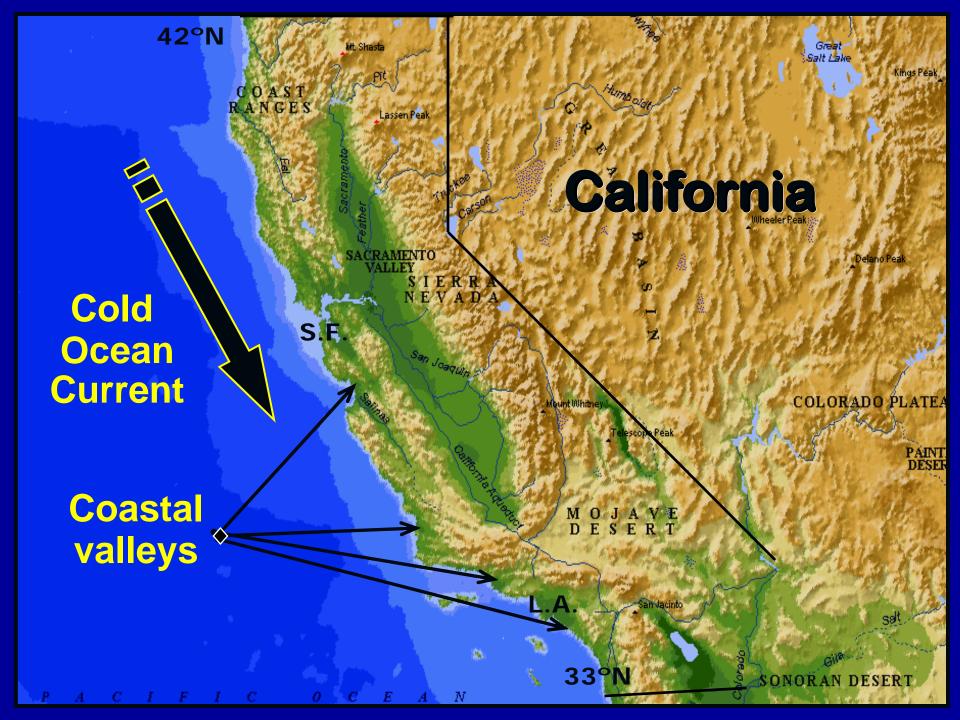
Boysenberries



Strawberries

- Physiology Types (SD DN)
- Varieties
- Systems
- Soil
- Spacing
- Irrigation
- Fertility
- Pests





Two basic flowering types

- 1. Short-day (SD)
- 2. Day-neutral (DN) (everbearer)



Plants of short-day varieties flower:

- Light period < ~13 hours
- Low temperature (< 24°C)

Plants of day-neutral varieties flower:

- Summer (regardless of day length)
- High temperatures (> 24°C)
- but best quality and greatest yield with moderate temps

Planting Dates

Short Day -Spring Bearing

- August to September
- From cold storage
- New plants = large size fruit and firm fruit

<u>Day Neutral -</u> Everbearing

- Early Spring
- From cold storage
- New plants = large size and firm fruit

Modern Strawberry System

- Well drained
- Sandy soil
- Raised beds
- Plastic mulch
- Drip irrigated
- Good varieties
- Good plants



New Strawberry Varieties

- Firm
- Shippable
- Big Size
- Good Flavor



- 1. Camarosa
- 2. Chandler
- 3. Fern
- 4. Seascape
- 52 tons/acre

CHARACTERISTICS OF CALIFORNIA STRAWBERRY CULTIVARS

Plant characteristics

Mod. vigorous plant; high productivity,

very long season; avoid overchilling, or

very high yields; long production season

production; adapted to early fall planting

vigorous plant; high-yielding; early

not early; compact plant that needs

for Santa Maria Valley

moderate yields

adequate nursery chilling; good cultivar

will runner excessively

Fruit characteristics

large; excellent flavor; red

internal and external color

medium size: dark red color:

large; good flavor; excellent

large; very good flavor; highly

shelf life; good for fresh

market and freezer pack; resistant to rain damage

tolerant of rain damage

medium size; very good

flavor: tender skin: soft when

good flavor

Susceptibility to pests

tolerant of major soil pathogens;

misshapen fruit occasionally a

problem, in early season; tolerant of root and crown diseases

tendency to produce misshapen

fruit; susceptible to Verticillium

relatively tolerant to Phytophthora

highly susceptible to Phytophthora

susceptible to Phytophthora root and crown rot; fruit is susceptible

to powdery mildew

sensitive to sulfur sprays;

and Verticillium

mildew

moderately susceptible to powdery

					temps. are high		
Diamante	DN	fall	CC, SC	10 days to 3 weeks	large; very good flavor; light color; sensitive to rain damage	moderately vigorous plant; high productivity; long season, open canopy, easy harvest]
Palomar	DN	fall		?	Large; excellent flavor, good color, sensitive to calyx spot		
Ventana	SD	fall	CC, SC	none to 1 week	large; good flavor; good color but lighter than Camarosa; resistant to rain damage	vigorous plant with heavy early production; adapted to early fall planting; sets well in adverse weather; excellent for winter-spring fresh market	;

Day

length

DN

DN

SD

SD

SD

Cultivar

Albion

Aromas

Camarosa

Camino

Real

Chandler

Planting

season

fall

fall

fall

fall

summer

Area

CC

CC

CC.

SC

CC

SJV

Supp.

storage²

10 days

to 2.5

weeks

10 days

to 3

weeks

week

7 to 14

days

none to 1

Newest Varieties

Short-day cultivars

<u>Camarosa</u> - large; good flavor; excellent shelf life; good for fresh market and freezer pack; resistant to rain damage; vigorous plant; high-yielding; early production; adapted to early fall planting; 0-1 week chilling; produces misshapen fruit; susceptible to *Verticillium*

<u>Camino Real</u> - large; very good flavor; highly tolerant of rain damage; not early; fall plant, compact plant that needs 7-14 days of chilling; good cultivar for interior valleys; sensitive to sulfur sprays; tolerant to <u>Phytophthora</u> and <u>Verticillium</u>

<u>Chandler</u> - medium size; very good flavor; tender skin; soft when temps. are high; moderate yield; 0 chilling, summer plant

Ventana - large; good flavor; good color but lighter than Camarosa; resistant to rain damage; vigorous plant with heavy early production; adapted to early fall planting; sets well in adverse weather; excellent for winter-spring fresh market; 0-1 week chilling; susceptible to *Phytophthora* root and crown rot; fruit is susceptible to powdery mildew

<u>Douglas</u> – Old variety - large, good color and good flavor

<u>Pajaro</u> - Old variety - large, dark red color.

Oso Grande - Old variety - high yield, large, good flavor.

<u>Sequoia</u> - Old variety - large soft fruit with excellent flavor. Plants are resistant to Verticillium wilt.



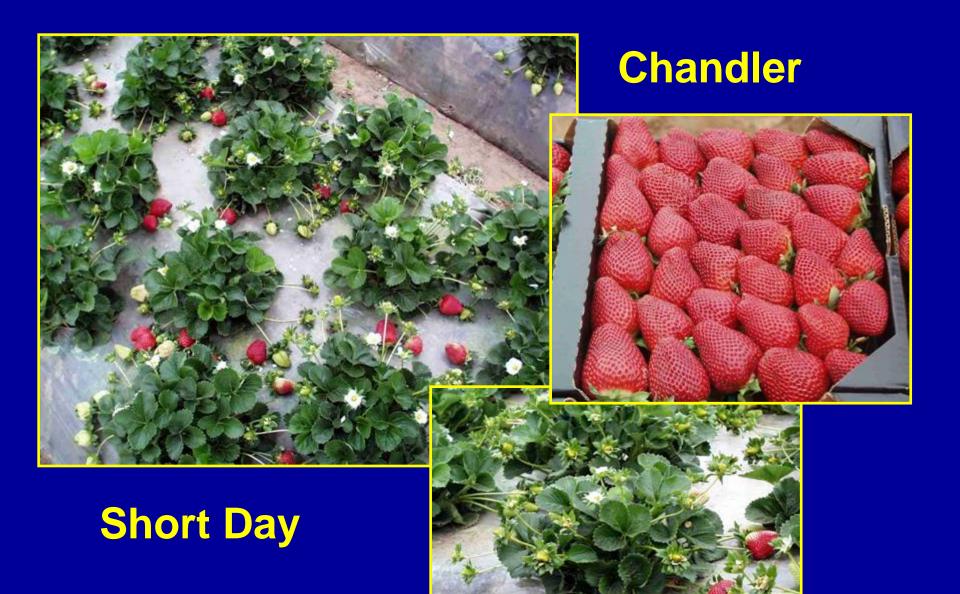




Camarosa







Day-neutral varieties

<u>Albion</u> - large; excellent flavor; red internal and external color; mod. vigorous plant; high productivity, very long season; 10-18 days chilling; overchilling = excessive runners; fall plant; tolerant of soil pathogens; susceptible to powdery mildew

<u>Aromas</u> - medium size; dark red color; good flavor; very high yields; long production season; fall plant; 10-21 days chilling; misshapen fruit occasionally a problem, in early season; tolerant of root and crown diseases

<u>Diamante</u> - large; very good flavor; light color; sensitive to rain damage; moderately vigorous plant; high productivity; long season, open canopy, easy harvest; fall plant; 10-21 days chilling; highly susceptible to *Phytophthora*

<u>Fern</u> - excellent flavor; medium size; very productive; plant in spring in warm climates for July to Nov. harvest; fall plant for April to Oct. harvest.

<u>Seascape</u> – Large size, very firm, good flavor, productive

<u>Selva</u> – Old variety - high yield, firm, mild flavor, Plant early September <u>Irvine</u> - Old variety - winter planted day-neutral, excellent flavor <u>Hecker</u> – Old variety - medium size, mild-flavored, productive





Fern







Seascape



Raised Beds

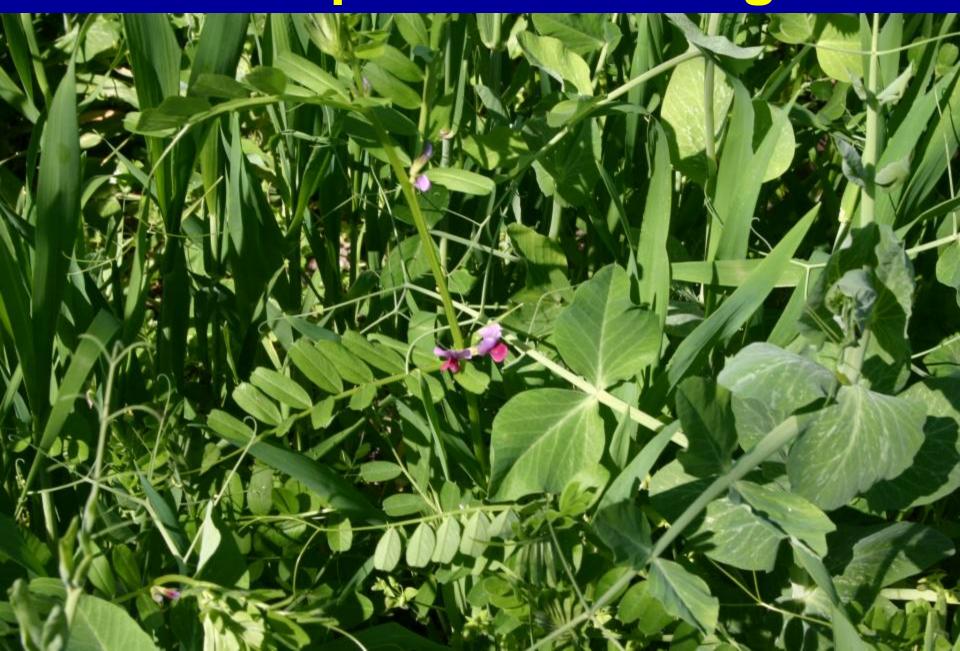
- Warmer growth starts earlier
- Higher easier to harvest
- Better drainage
- Less root rot



Root rot – poor drainage from no raised bed



Cover Crop - Grass & Legume





Till in cover crops as late as possible when the soil is workable

Provides
organic matter,
tilth, water
retention, and
nutrients







Spread compost – till in – form raised beds





Forming Hand Raised Beds





Forming 2 Raised Beds



Forming 4 Raised Beds



Making Raised Beds





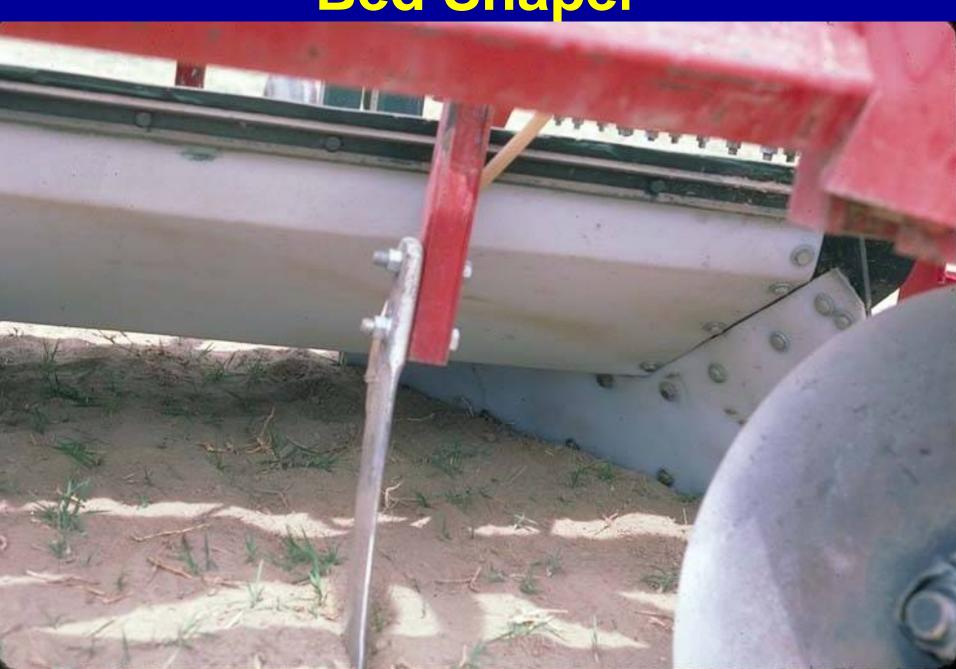
Bed Shapers



Shaping Beds



Bed Shaper





Bed forming with fertilizer and drip tape





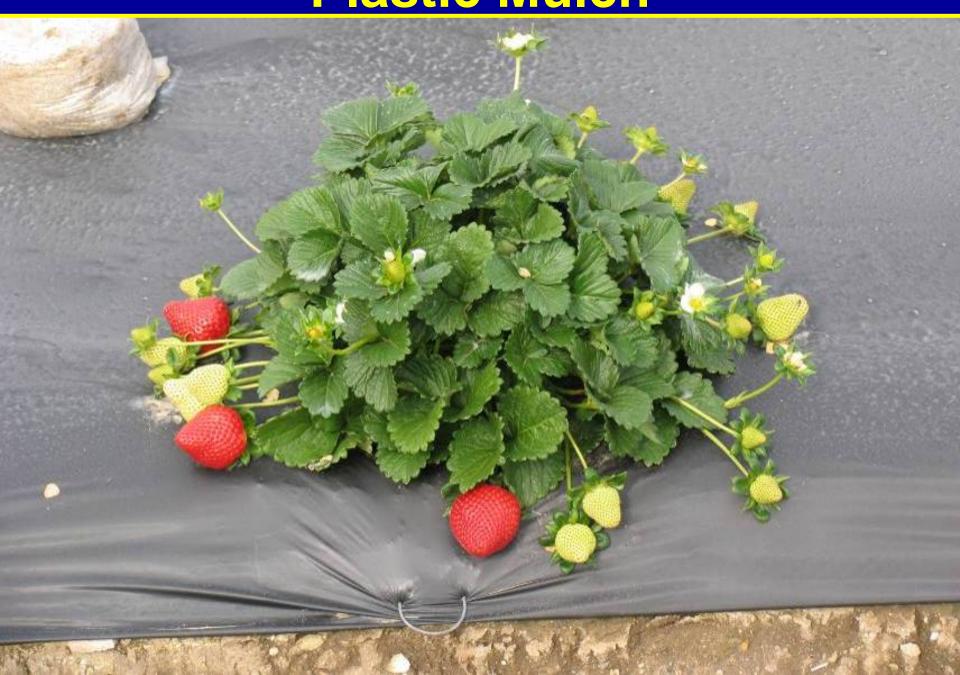




Rototiller Bed Shaper



Plastic Mulch



Advantages of Plastic Mulch

- Fruit rot
- Weed control
- Temperature Control
 - Clear = warms soil
 - Black = warms surface
 - White = cools soil





Early-season plant growth & fruiting with clear and black bed tarps, January



Clear (transparent)

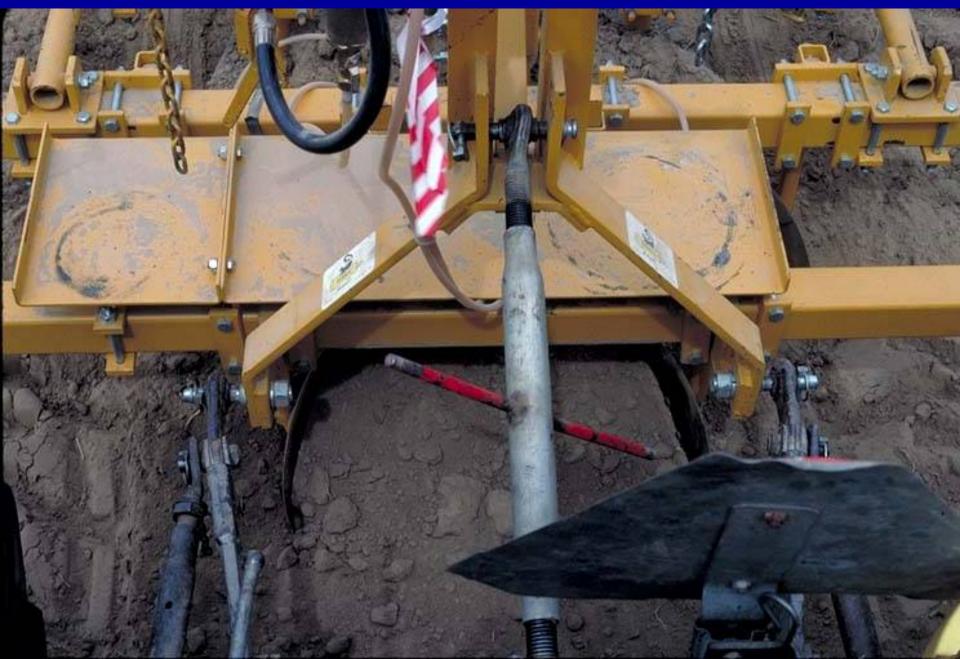
Black



Plastic Mulch



Plastic Mulch Machine



Plastic Mulch Machine

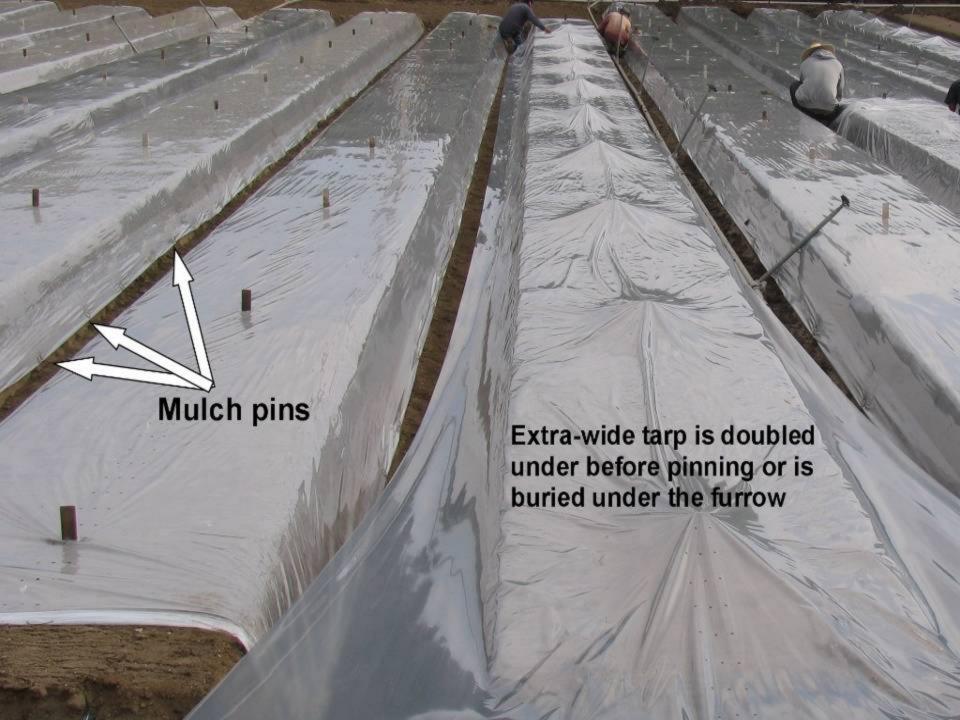


Two row strawberry bed 30 + 30 + 90 = 150 cm plastic

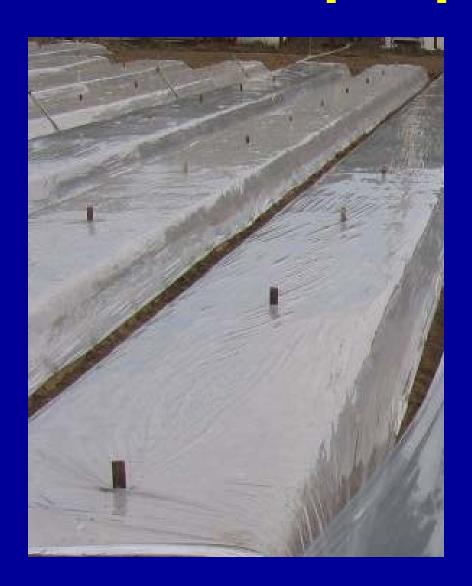


Use 200 cm plastic and burry it on edges





Wire staple plastic on side





Hand Buried Plastic





Melting holes in plastic



Strawberry transplant root mass





Remove runners as they form



Prune off early bloom to encourage vigorous plant development

Two months of growth



3 months growth





Protected strawberry culture





Greenhouse Culture













Currants and Gooseberries Ribes species





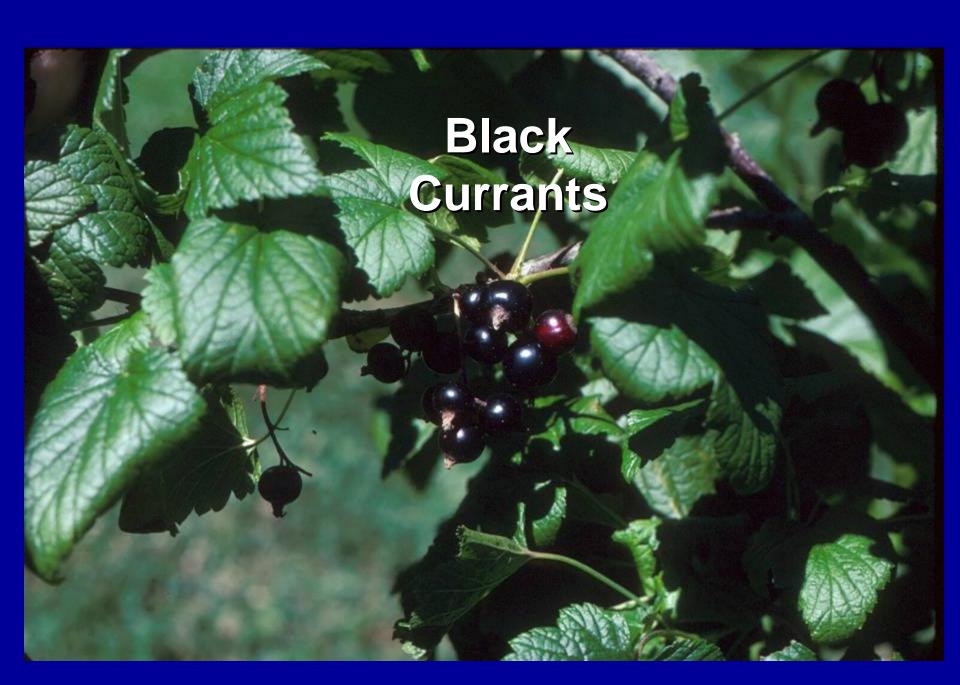








Red Currants









Gooseberries

Table Grape Varieties



Table Grapes Seedless

Beauty

Beverly

Black Corinth

Black Manuka

Bronx

Canadice

Centennial

Concord Seedless

Crimson

Dawn

Delight

Diamond Muscat

Early Muscat

Einset

Emerald

Fantasy

Flame

Fiesta

Glenora

Himrod

Interlaken

Lakemont

Malissa

Niagara

Perlette

Princess

Remaily

Romulus

Royal

Ruby

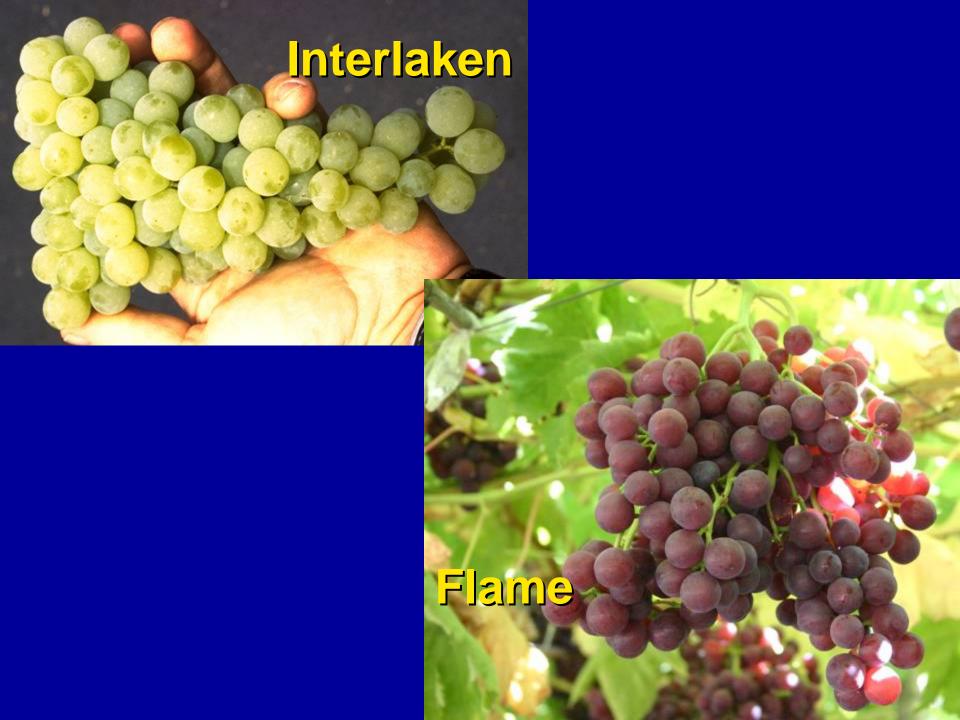
Suffolk Red

Summer Muscat

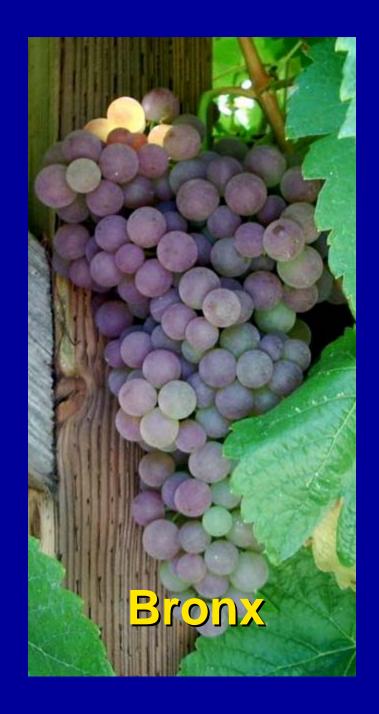
Thompson

Vanessa

Venus







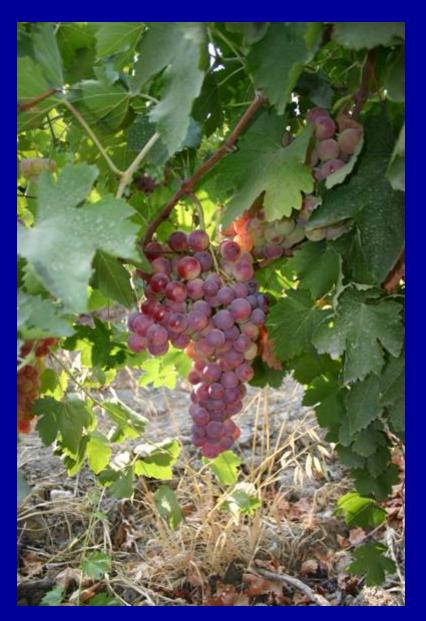


Table grapes with shaded clusters



"T" trellis for table grapes



Pergola with Flame Seedless



Kiwi Vines

- Bears on last years canes (shoots)
- Male and female plants
- Requires trellis support
- Many shapes
- Prune cane for cane replacement
- Leave renewal spurs
- Tie down canes



Kiwi usually grown on pergola



For larger fruit kiwis can be thinned

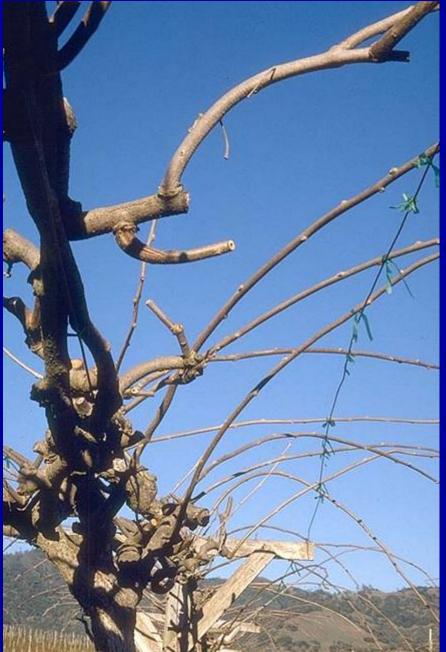
Tall narrow trellis



Short wide trellis







Growing Vegetables and Herbs

- Cool Season Vegies
- Warm Season Vegies
- Culinary Herbs





Warm Season Vegetables

- Tomatoes
- Peppers
- Eggplant
- Beans
- Squash
- Cantaloupe
- Watermelon
- Cucumbers
- Corn



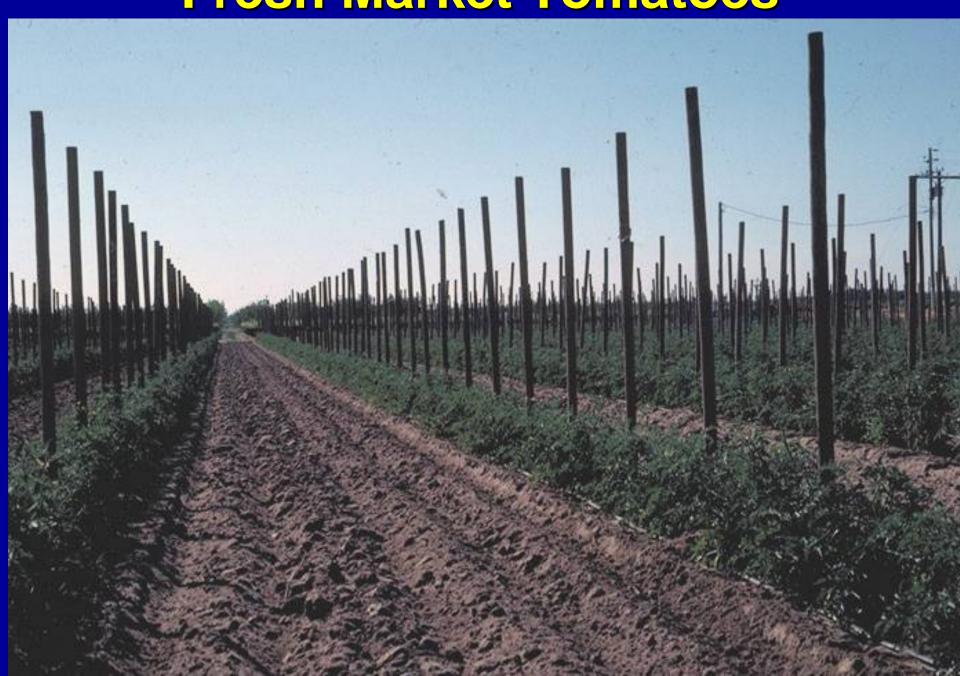
Heirloom Tomatoes







Fresh Market Tomatoes

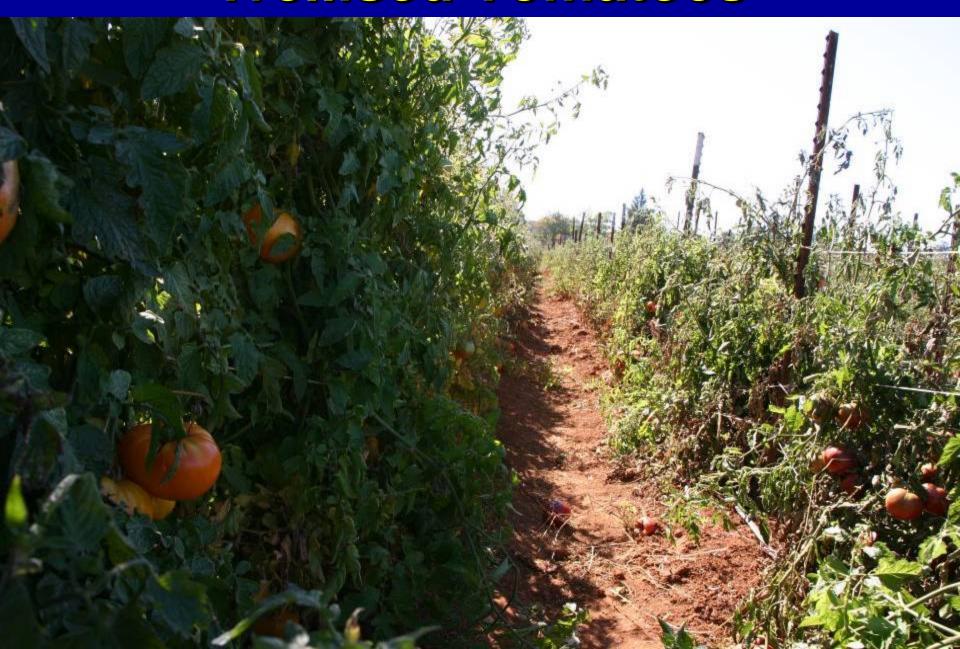




Tomato Staking



Trellised Tomatoes



Hoop houses







Tomato Tunnels





Hot and Bell Peppers







Peppers



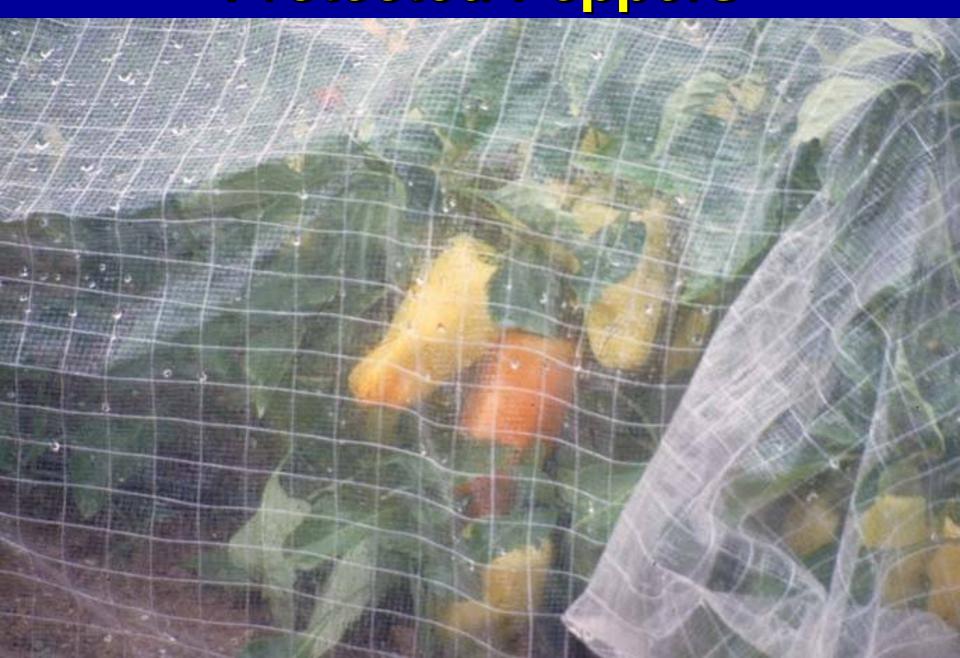


Transplanting Peppers





Protected Peppers





Plastic Tunnels



Eggplant



Protecting Eggplant





Beans



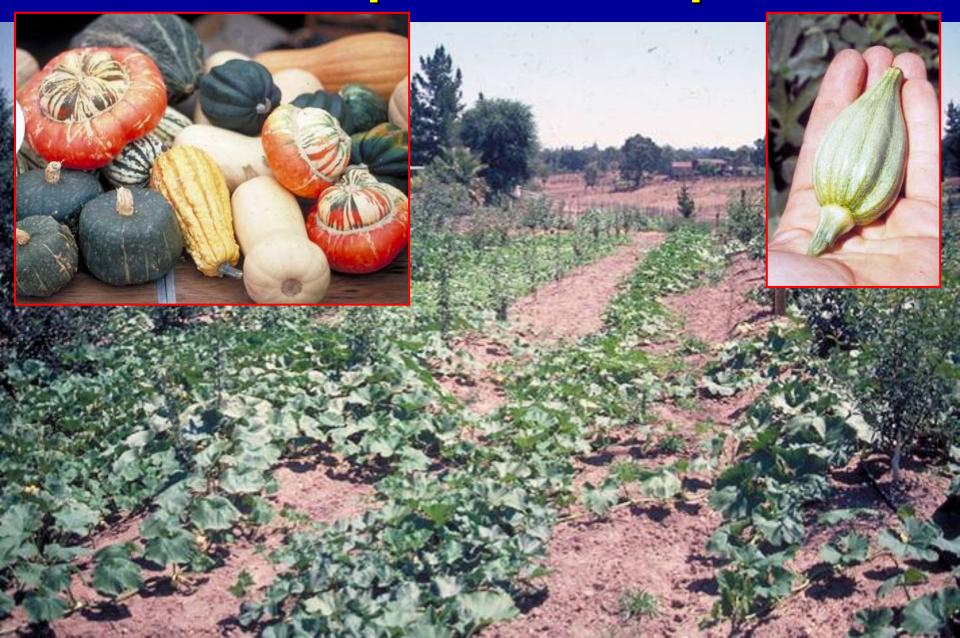
Melons



Watermelon



Winter Squash & Pumpkins



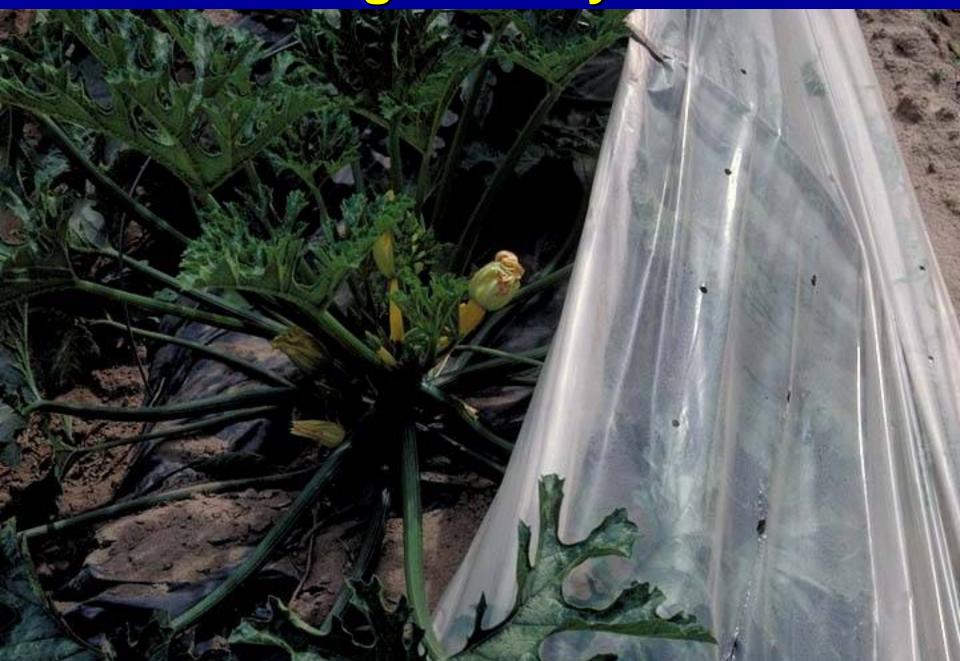


Specialty Baby Vegies





Getting an Early Start



Wide spacing



Cut Flowers Herbs Mushrooms

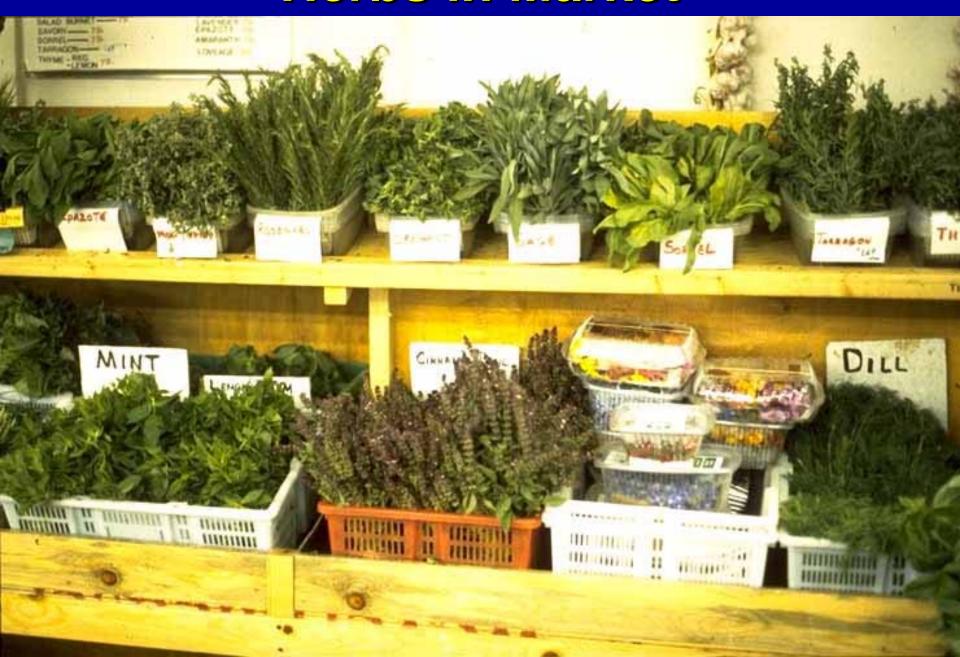




Herbs (culinary)



Herbs in Market



Cilantro



Edible Flowers



Edible Flowers





Ornamental Gourds & Grasses





Cut Flowers Wholesale & Retail



Starting Cut Flowers





Lots of hand weeding









Lavender Oil





Mushrooms



Cool Season Vegetables

- Broccoli Cauliflower
- Radish
- Mustard Greens
- Turnips
- Lettuce
- Peas
- Potatoes
- Carrots
- Beets





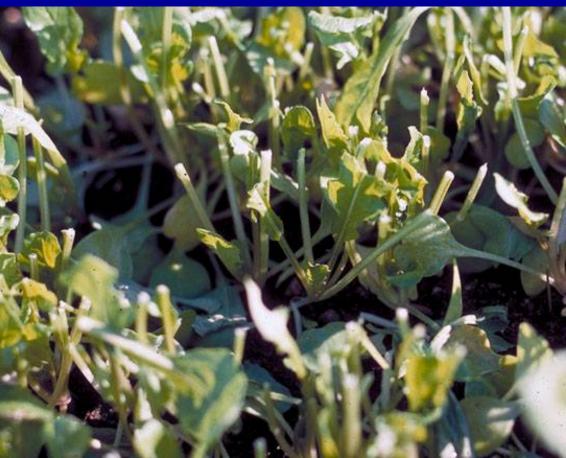
Broccoli - Cauliflower



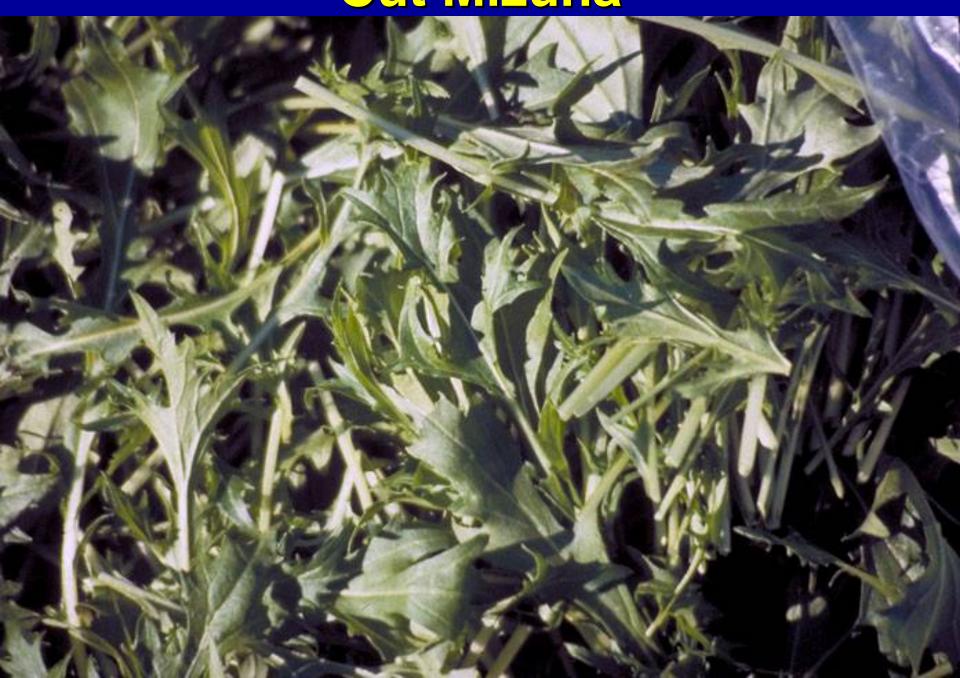


Arugula





Cut Mizuna

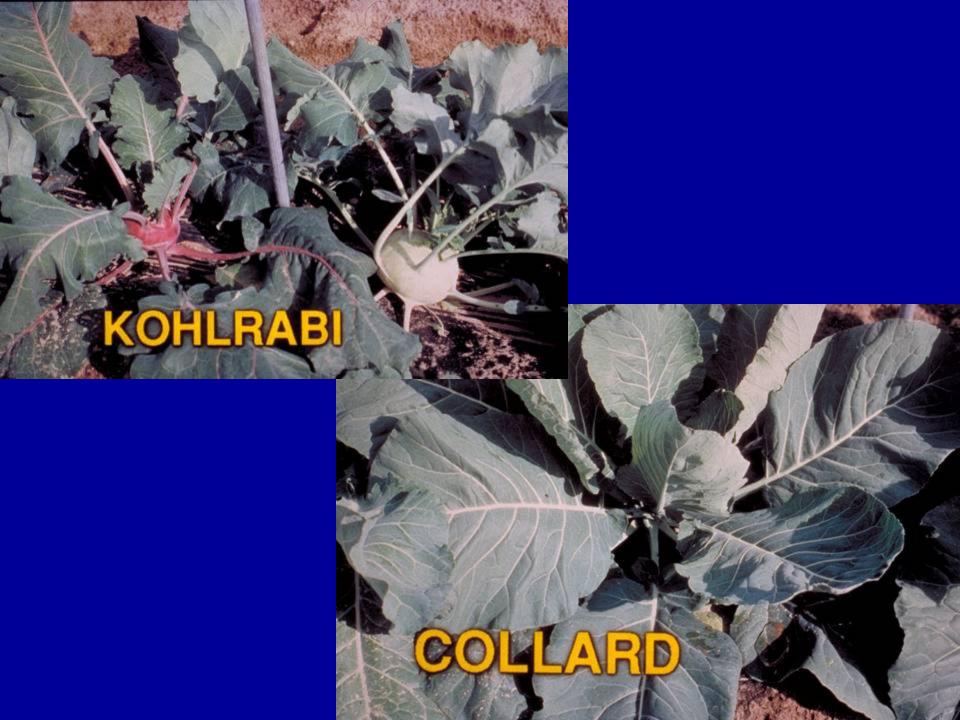




Radish







Brussels Sprouts









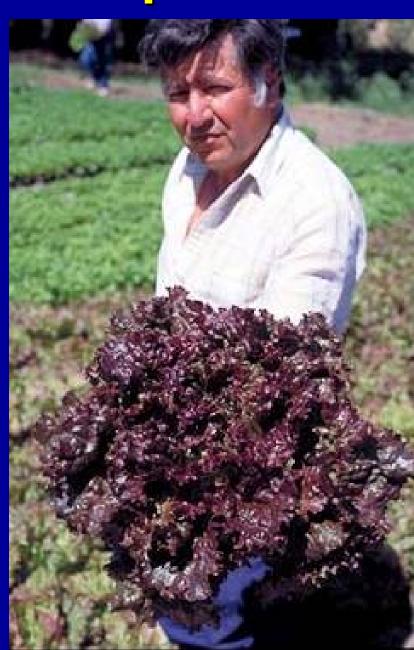
Cut Frizee



Lettuce seedling transplants





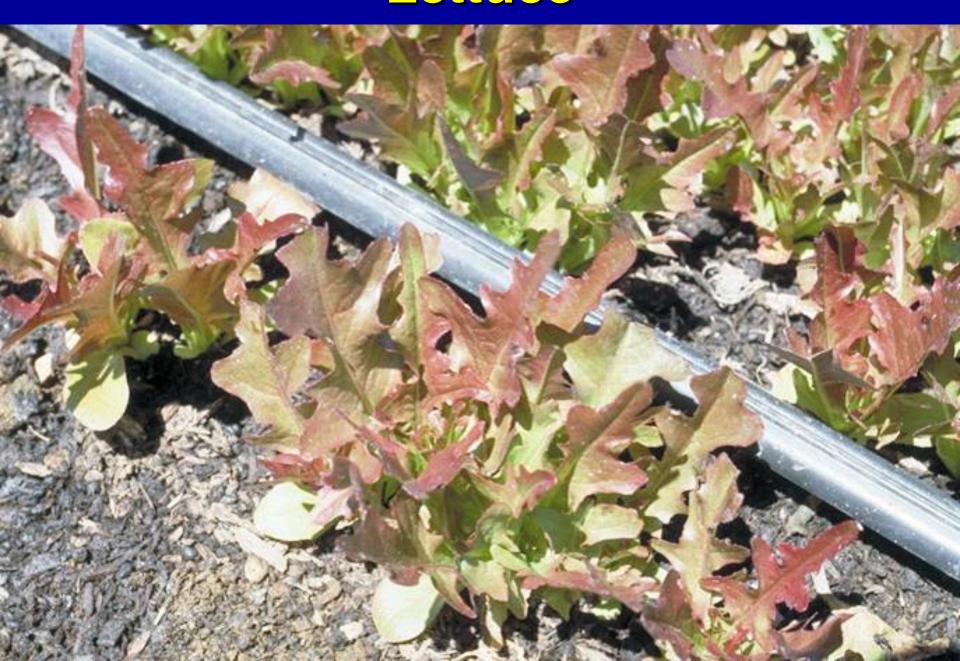




Transplants



Lettuce



Salad Mix

salad of mesclun #flowers



WINT COUNTRY CUISINE

specialty Produce from California's Wine Country





Salad Greens Cutter



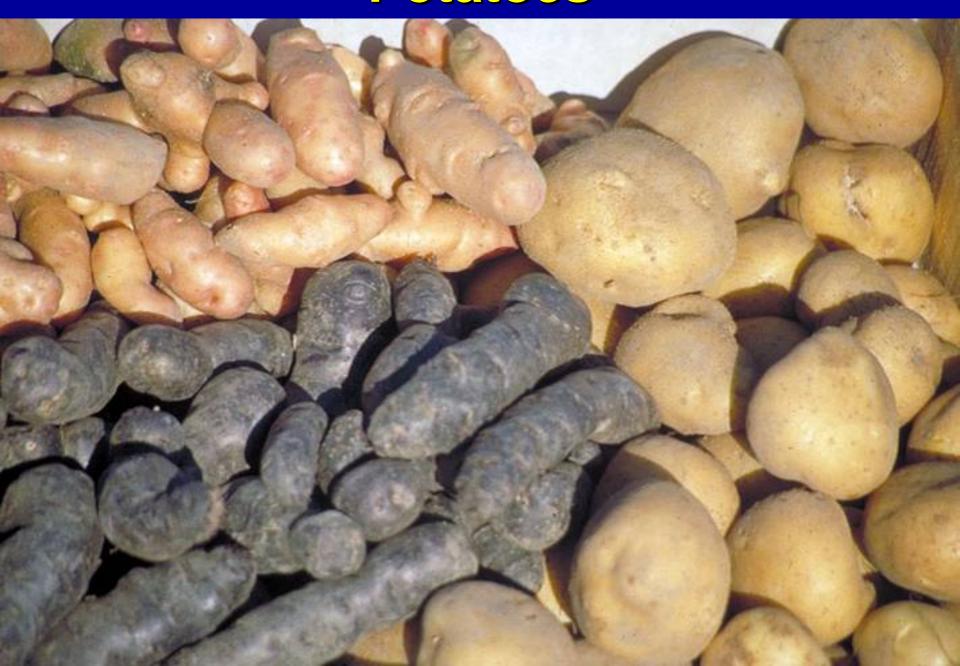


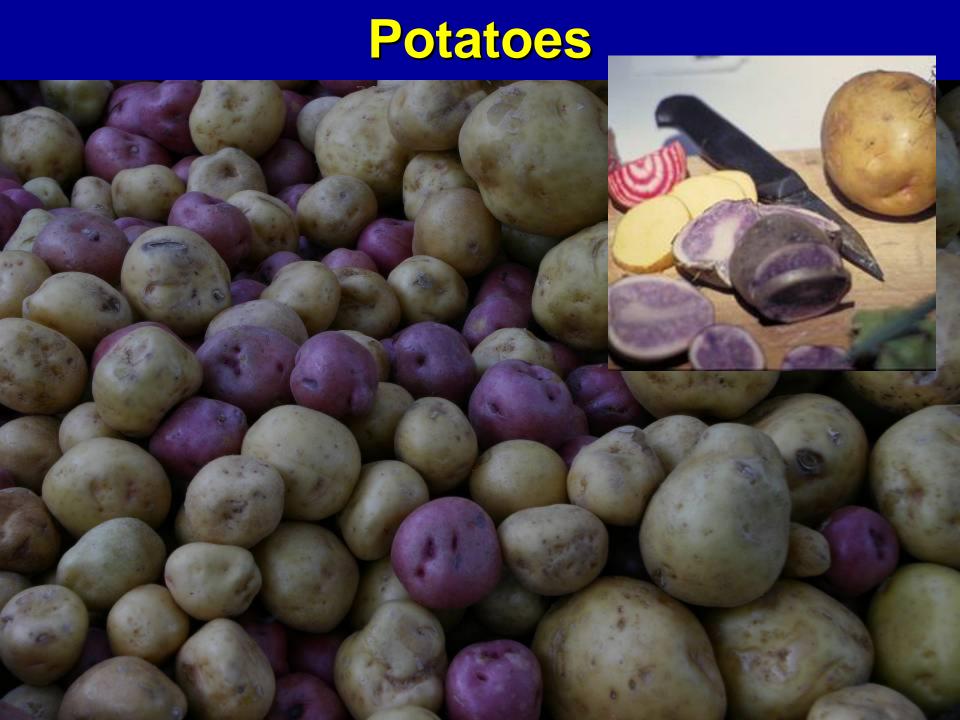


Salad Mix



Potatoes





Peas (snow, snap, shelled)



Alliums (onion – leek – garlic)

Transplanted Onions

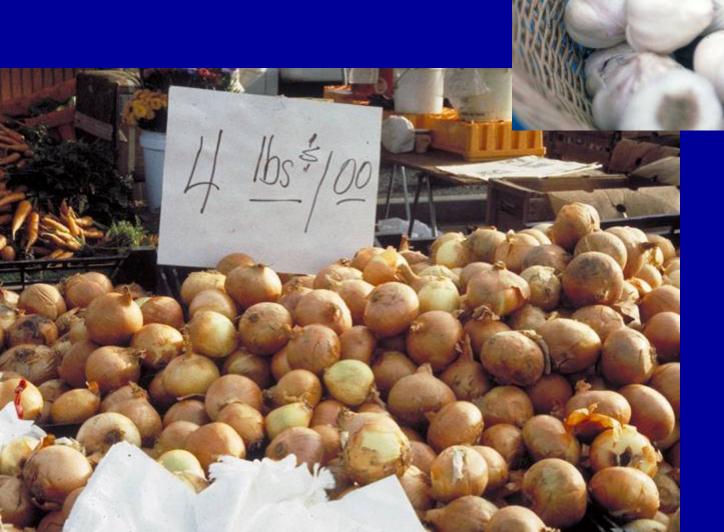








Onion & Garlic



\$1.00 EACH
MEDILM BULBS
504

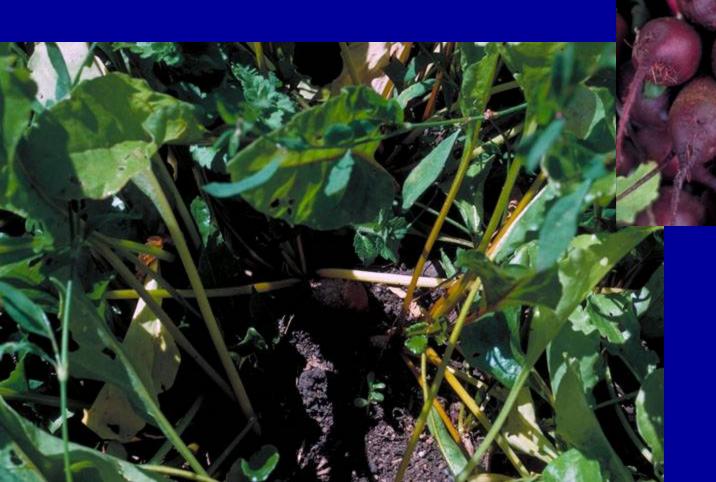
Chinese Chives





Chinese Garlic

Beets







Weeds



Equipment (tractor)





Equipment (bed shaper)

Equipment (seeders)





Equipment (cultivator)



Equipment (cultivating)



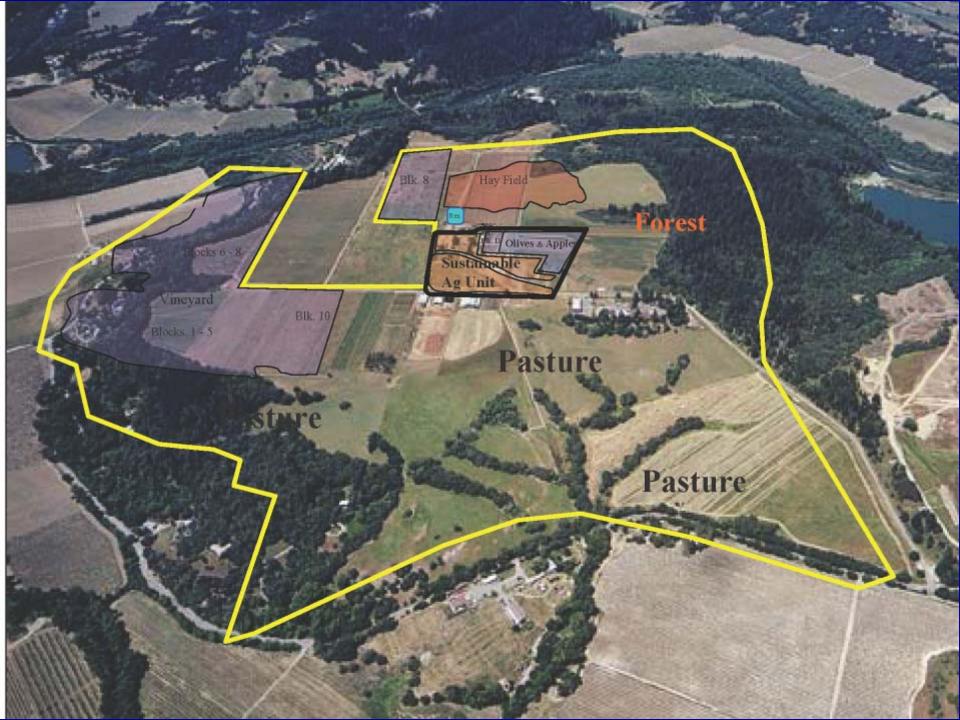
Equipment (cultivating shovels)



Equipment (tool bar)







Paul Vossen

University of California Cooperative Extension 133 Aviation Blvd. Santa Rosa, CA 95403 (707) 565-2621 pmvossen@ucdavis.edu

http://cesonoma.ucdavis.edu

