



Master Gardener Program

University of California Cooperative Extension 

UC Master Gardener Program

University of California Cooperative Extension
Napa County

**Welcome to Spring and Summer
Vegetables**
March 2019

Today's MG Team

- Pat Sidorski
- Pat Hitchcock
- Heather Dooley
- Cindy Panek
- Craig Schauffel, Cashier



Plan ahead

- Plant vegetables that your family likes and in quantities that you will use.
- Plant only as large a garden as you can maintain easily.
- Plant disease-resistant varieties that are adapted to your area.



Location, location

Level Ground

Close to Home/Kitchen

Adequate Light - 6-8 hours of
sunlight

Good Soil

Water Supply



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Plants grow well in soil that ...

Has a healthy
physical structure

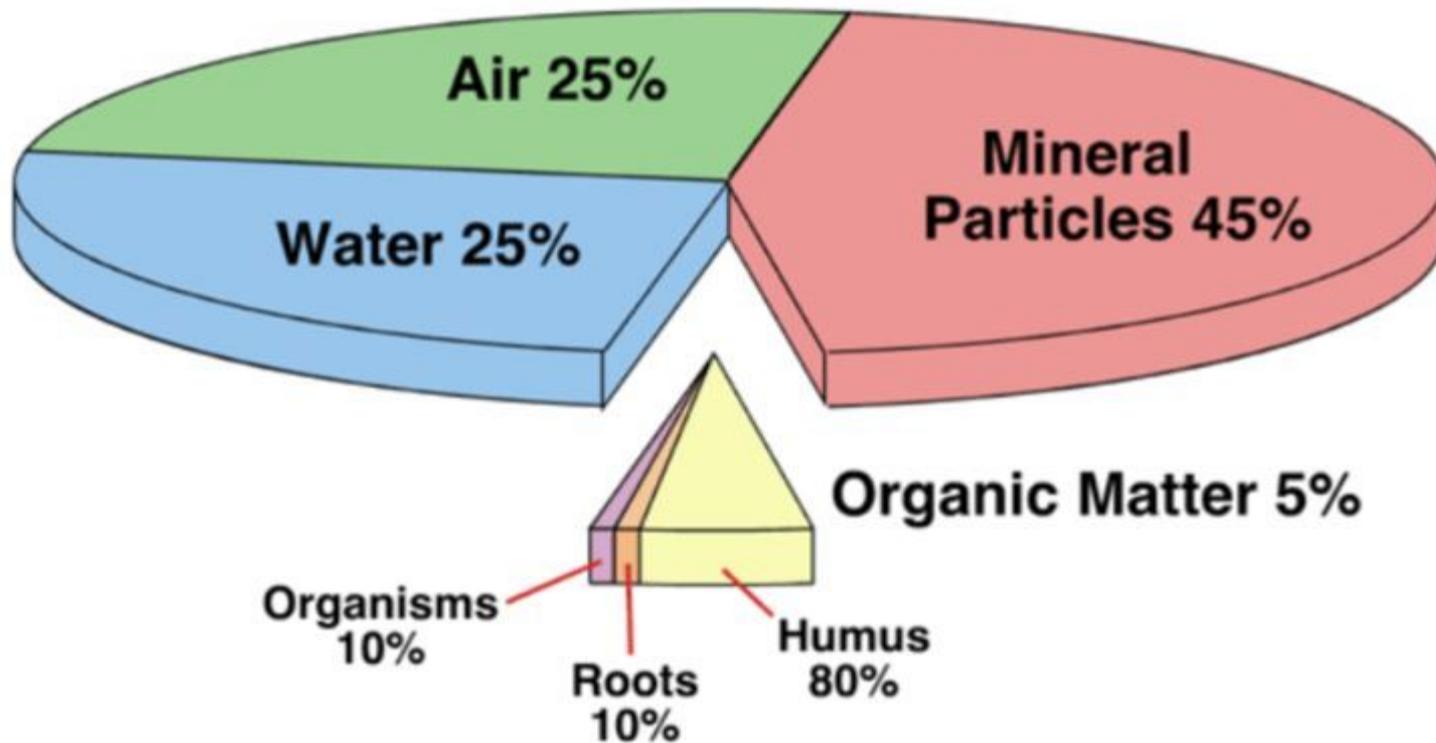
Contains essential
micronutrients



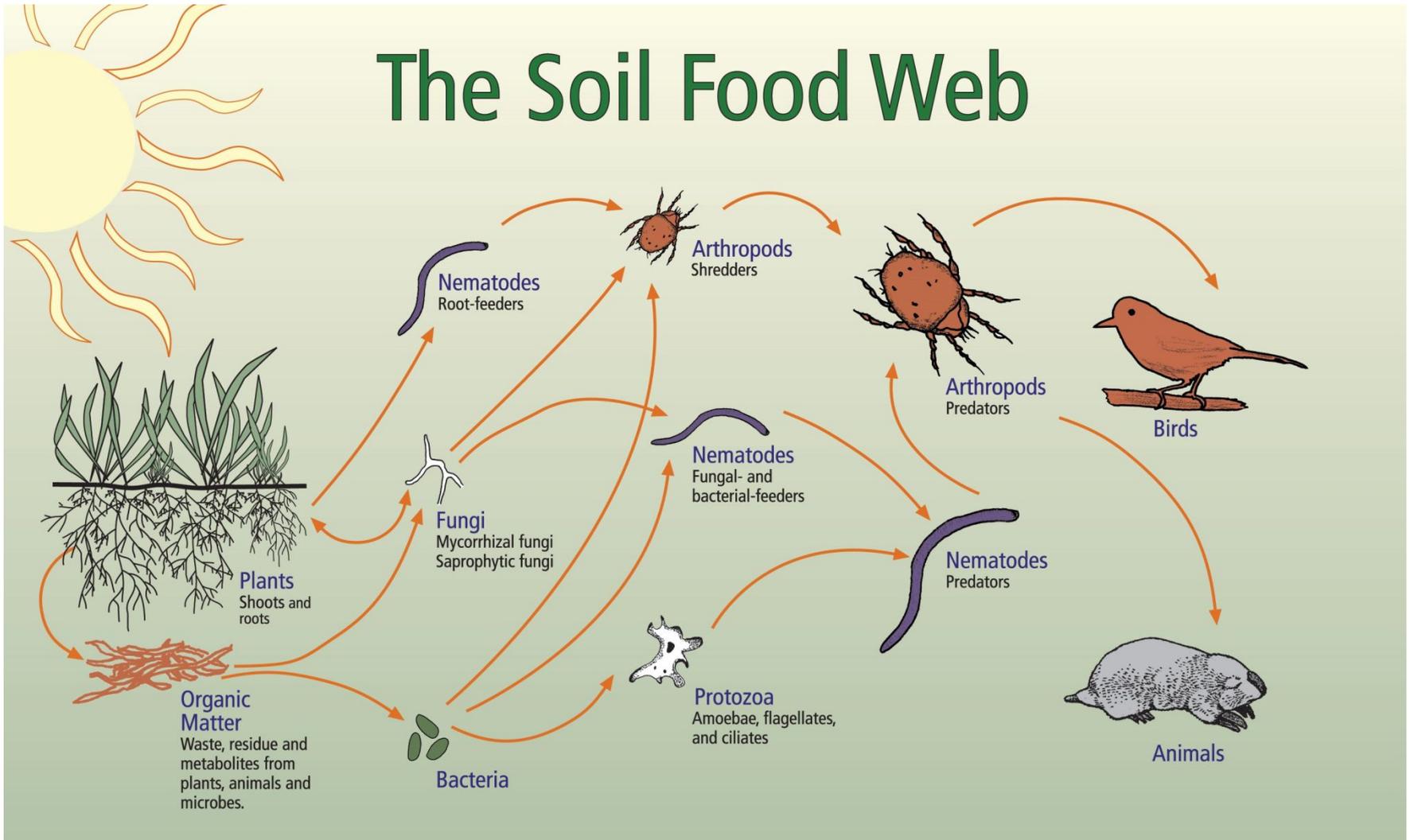
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What is Soil?



The Soil Food Web



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CONSERVE THE SOIL YOU HAVE

- **Avoid compaction.** *Never try to work wet soil.*
- **Avoid excessive soil disturbance.**
 - Worms and microbes can be destroyed by a rototiller.*
 - Can bring up weed seeds.*
- **Avoid overuse** of chemical and synthetic fertilizers, herbicides and pesticides, over-fertilizing, over-watering, severe under-watering. ***Moderation is key.***



Some essential garden terms that people sometimes mix up

Amendments



Compost



Mulch



Fertilizer



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IMPROVING YOUR SOIL

- Amendments are materials you add to soil to improve its structure, tilth, and suitability for root growth.
- Barnyard manure (best if composted first)
- Green Manure and Cover Crops (E.g. Fava Beans, Mustard, Vetches)
- Packaged mixes
- Compost



Distinguish between amendments that can be added right before planting and those that can't

- Some amendments (animal manure, green manure) should be added early enough that organic materials can break down.



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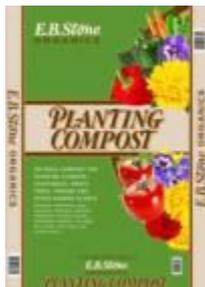
One of the best amendments is *compost*

- Compost develops into humus to improve soil structure
- Improves drainage and aeration
- Conserves soil moisture
- “Finished” compost can be mixed into the soil right before planting



Compost:

- Make it at home
- Buy it from recycling plants
- Buy it in bags from stores (expensive option)



Mulch: Material layered on top of the soil to cover and protect it.

Mulch : preserves moisture, reduces weeds, prevents erosion, also can slowly add some micronutrients.

Mulch is usually organic (leaves, grass clippings, compost, straw, etc.) but can be inorganic (e.g. plastic).

One of the best mulches is compost



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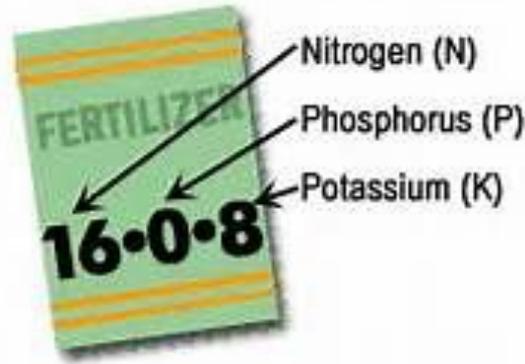
Fertilizer

What do plants need?

Are we feeding the plants or the soil?



Fertilizers



5-X-X Nitrogen (N)
promotes green leafy
growth

X-5-X Phosphorus (P)
assists in flower, seed, and
fruit production

X-X-5 Potassium (K) for
root and tubers



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Organic Fertilizer Examples

- Commercial organic fertilizers
- Animal manures
- Seaweed (kelp)
- Fish meal or emulsion
- Soybean meal
- Alfalfa pellets
- Bone and blood meals



Synthetic Fertilizers

- Fast-acting
- Often less expensive
- Can be hazardous to plants or soil if used incorrectly or too much
- Key: Use according to the directions on the bag/box and in moderation to avoid environmental pollution.



Ways to Fertilize

- Add to soil before planting (slow release forms are an option).
- Foliar feed: spray a mist solution to be absorbed by osmosis.
- Liquid solutions: use watering can or hose end system.
- “Side-dress” by working a granular fertilizer into top inch of soil near plant roots and water in well.



Water Needs Depend on Many Factors

- Soil Type (sandy, clay, loam) and organic content/mulch
- Weather (sun, temperature, humidity, wind)
- Time of year (day length)
- Type of vegetable
- Growth cycle of the plant

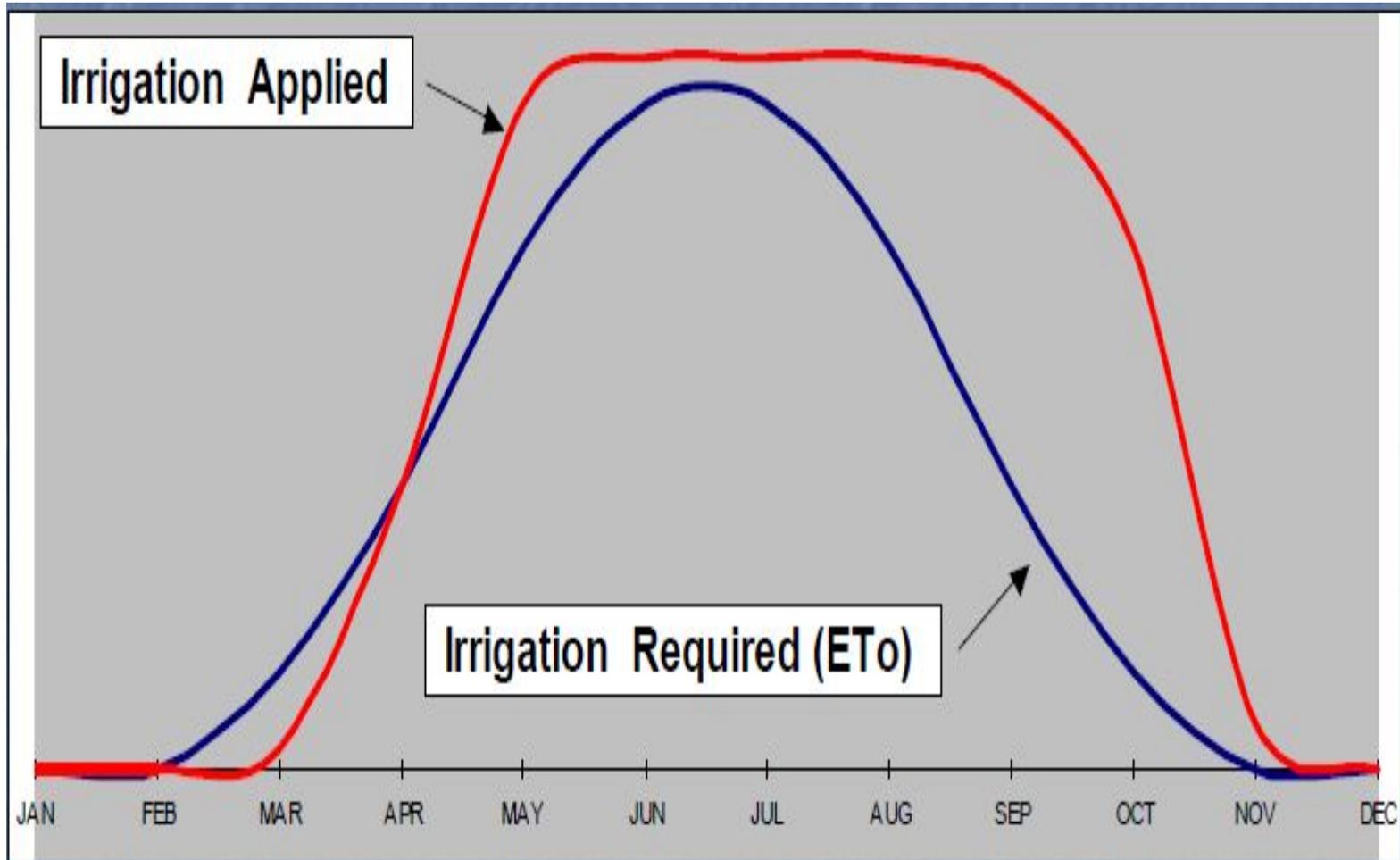


Critical Periods for Adequate Watering:

Beans and peas	Flowering/forming pods
Broccoli, cauliflower	Forming heads
Corn	Silking, tasseling, forming ears
Cucumber	Flowering; fruit forming
Eggplant, peppers, tomato	Flowering through harvest
Melon	Fruit set & early development
Pumpkin	Fruit forms
Squash	Bud forming & flowering
Swiss Chard	When true leaves form
Lettuce	When true leaves form



RELATIVE WATER NEEDS BY TIME OF YEAR



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When to Water

Test: Water if dry at 3-4 inches



Best time of day is early morning or in evening.

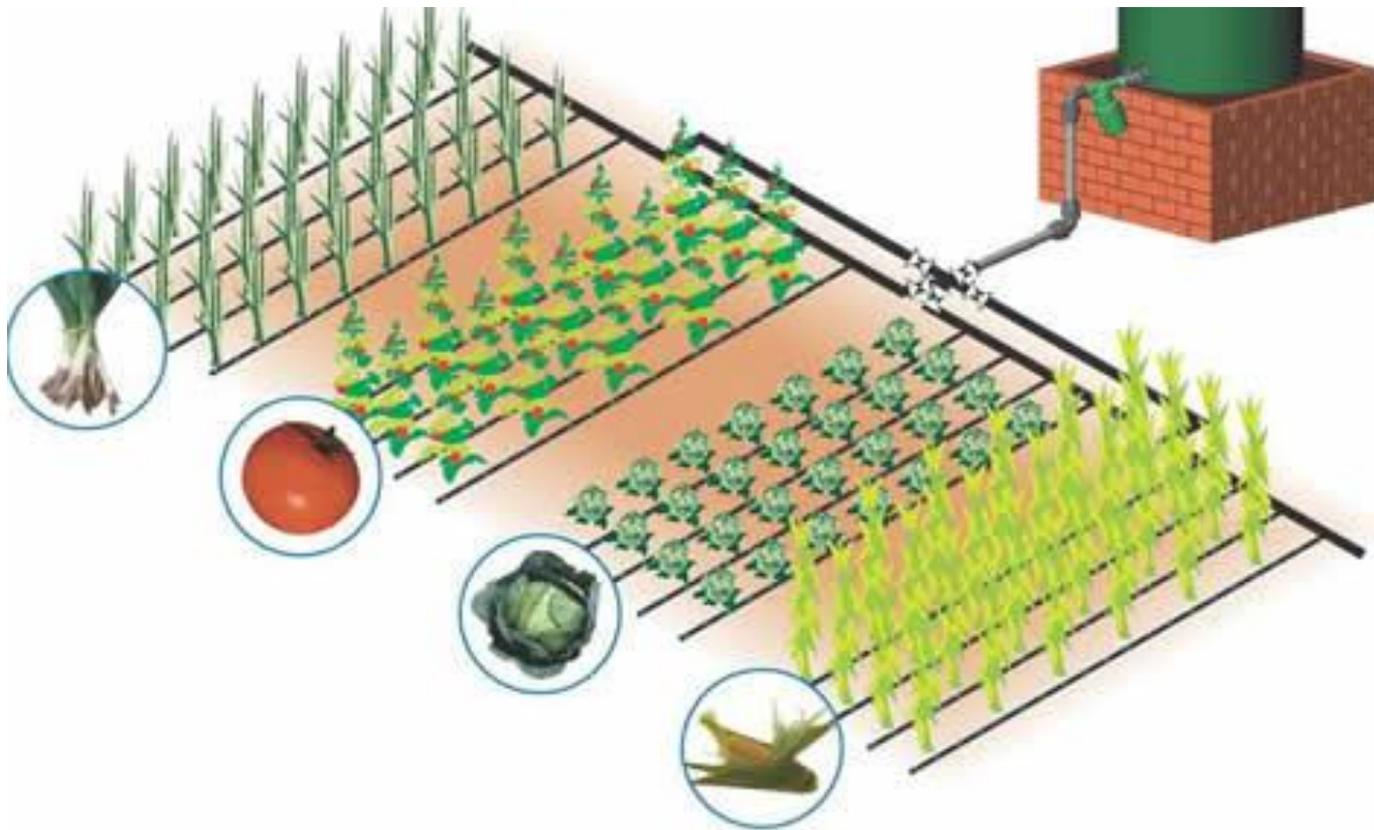
NOTE: Drooping leaves do NOT always mean the need for watering. Check the soil. Avoid overwatering. Roots can drown.



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Why is Drip Irrigation best?



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What About Weeds?

- What is a weed?
- Weeds can compete with desired plants.
- Prevention:
 - Mulch
 - Prevent re-seeding
 - Don't bring home weeds
- Collateral Damage
- Reuse: Mulch, home-compost, or yard waste



Reading Your Seed Packet



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Plants are part of families



Solanaceae

Tomatoes
Tomatillos
Eggplants
Peppers
Potatoes



Cucurbitaceae

Zucchini & Summer
Squash
Watermelon
Musk Melon
Pumpkin
Gourd



Brassicaceae

Broccoli	Kale
Brussels sprouts	Collards
Cauliflower	Radishes
Cabbage	Kohlrabi
Arugula	Rutabaga
Mustard	Turnip



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Seedling mix example



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Seed-starting set-up example



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Hands-on Centers

- Start seeds to transplant later.
- Transplant or “up-pot” seedlings.
- Demonstration of how to plant in the ground.



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Cabbage family: Broccoli



Imported cabbageworm



Biological control of caterpillars

Bt: *Bacillus thuringiensis ssp kurstaki*



Chard, Spinach



Scarlet
Charlotte



Spinach



French White

Chard: Leafminer



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Chard: Aphids



Parasitized aphids



Lettuce and Kale



“Tramp” Slug



Tomatoes



Verticillium and fusarium wilts



Determinate vs indeterminate



Physiological conditions of tomatoes



Peppers



Sunscald

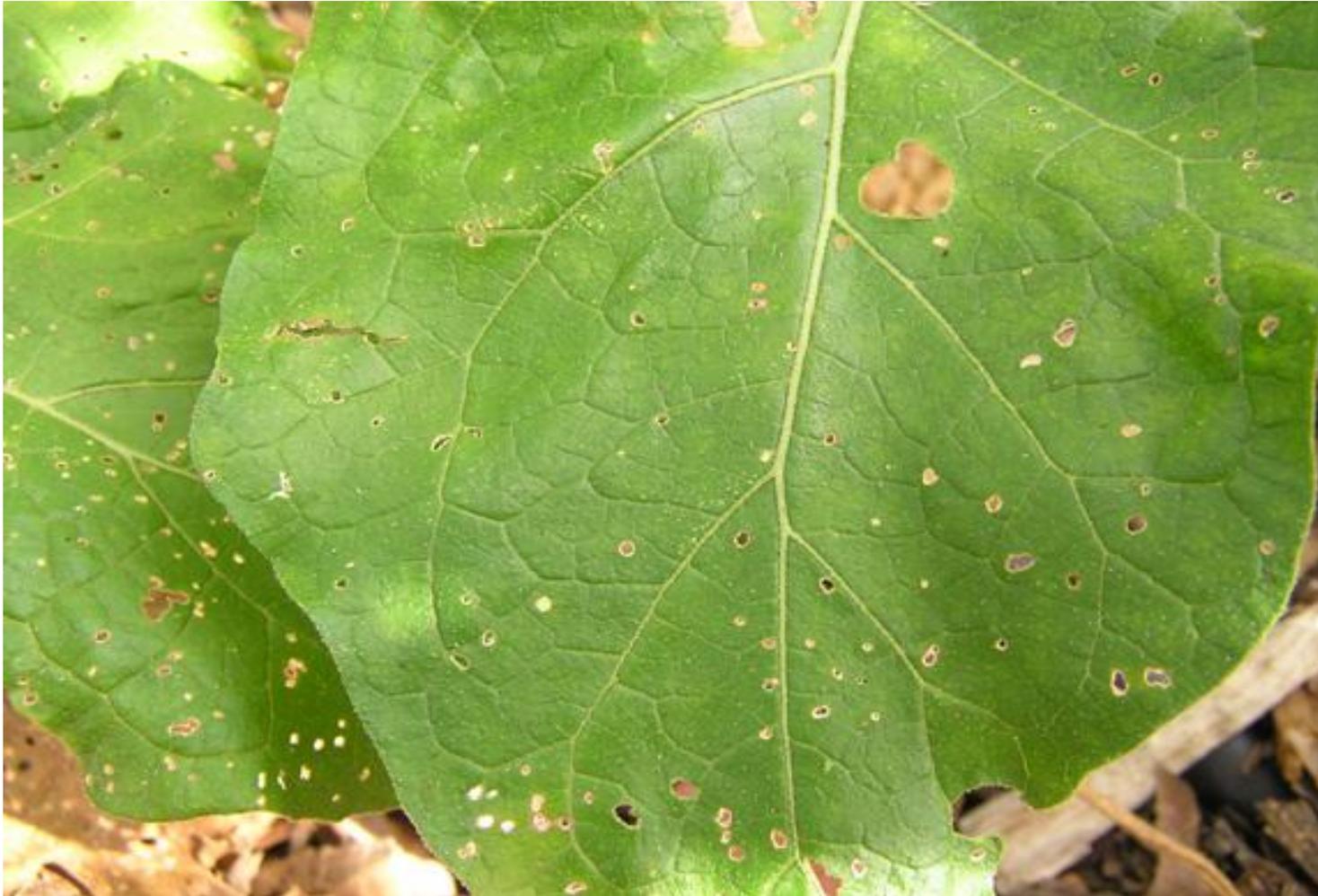


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Eggplant



Flea beetle damage



Green beans, bush and pole



Mite damage to bean leaves



Cucumbers



Cucumber beetle (spotted)



Summer squash



Squash blossoms



Powdery mildew



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UC Master Gardeners of Napa County

UC Master Gardeners of Napa County reach out to everyone with compassion and support, we are here to help you recover.

Gardening Resources

The Master Gardener program is a volunteer organization associated with the University of California Cooperative Extension. *Our mission is to extend research based knowledge on home horticulture, pest management, and sustainable landscape practices to the residents of California and to be guided by our core values and strategic initiatives.*

upcoming MG Workshops

Home Vineyards

PART ONE

Master Gardener Calendar

Event Name	Date
Home Vineyard Part 1-Lecture & Field Trip	2/24/2018
Growing Groceries in Your Backyard-Napa	3/10/2018
Growing Groceries in Your Backyard-Yountville	3/11/2018
Add Zest with Citrus! - Napa	3/17/2018

[View More Events](#)

Weekly Newspaper Article

Cane Berries

Added January 17, 2018

By David Layland, U. C. Master Gardener of Napa County
For gardeners like me, it's a



Q & A



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GROWING TASTY TOMATOES

Saturday, April 6, 2019

9:30 - 11:30 a.m.

UCCE Meeting Rm

TOMATO PLANT SALE

LOCALLY
GROWN



25+
VARIETIES

1710 Soscol Ave. • 9AM 'til Sold Out

Next to Central Valley Hardware

Saturday, April 13th

napamg.ucanr.edu



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Help Us Grow!

Our follow-up survey provides us the tools we need to grow and improve the quality of our program.



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Thanks!

Be sure to complete the evaluations before leaving