



UC Master Gardeners of Napa County  
<http://napamg.ucanr.edu/>

*Our mission: "To extend research-based knowledge and information on home horticulture, pest management, and sustainable landscape practices to the residents of California and be guided by our core values and strategic initiatives."*



# Challenges in the Summer Vegetable Garden



# Help Us Better Serve You!

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



**UNIVERSITY OF CALIFORNIA**  
Agriculture and Natural Resources

■ UC Master Gardener Program

# The Three Challenges

Watering

Harvesting

Problems

# Watering Challenges



# Same pumpkin plant, midafternoon & evening: normal summer wilting



# Signs of water stress

- Wilted or drooping leaves that do not return to normal by evening
- Curled or yellow leaves that fold or drop
- Greyish foliage that loses its green luster
- Smaller than normal new leaves



# Harvest produce when ripe



- Many vegetables are best when harvested young: summer squash, cucumbers
- Flavor and texture change as fruits age: broccoli, eggplant
- Some are best and sweetest when fully mature: sweet peppers, melons

## Harvesting Romano Beans

Beans on the left would be good for fresh eating.

Beans on the right are going to be tough and stringy



# Harvesting Cucumbers

Large mature (seedy!) cucumber “hid” under leaves.

Yellow lemon cucumber = over-mature

Crooked green cucumber, pollination or watering or heat problem

Small lemon cuke = just right



# Harvesting Broccoli

Broccoli transplanted 3-3-20; main heads end of May, secondary shoots still producing in August 2020.

As it ages, broccoli gets bitter, especially in summer. Harvest before it opens up.



# Harvesting Broccoli

**Young broccoli, “curds” are very tight**



**Old broccoli, “curds” are loose**



# Harvesting Broccoli: Just Right!



# Harvesting Eggplant



Mini Eggplant. Which one is at correct stage of ripeness for eating?

# Harvesting Eggplant



First eggplant has shiny skin and small seeds. Second one is duller, seeds are larger. Last one is yellowing, seeds brown and mature

# Deadhead Basil to keep it producing



# Abiotic Problems in Vegetables

Abiotic means that the problem is not caused by a living organism, but by environmental factors.

Environmental factors can be air pollution, drought, nutrient deficiencies, mineral toxicities, freezing temperatures, excessive heat, lack or excess of light, or improper cultural practices.

Many common abiotic disorders are unsightly but do not affect the safe consumption of the vegetable.

# Blossom End Rot, Tomatoes



# Blossom End Rot in Squash



# Sunscald



# “Zippering” in Tomatoes: Flower development problem



# Internal White Tissue: may be a potassium issue



# Bitterness in Cucumbers



# Common Summer Insect Pests

Insects usually damage vegetables by chewing on them or sucking out juices.

Some insects are vectors for disease organisms.

Identify your pest first, then figure out what to do.

# Stinkbug damage to tomato



# Squash bug



# Harlequin Bug



# Cucumber beetles



# White Flies



# Tomato Hornworm



**AKA Hawk or Sphinx  
Moth**



UC Statewide IPM Project  
© 2000 Regents, University of California

# Fungal Diseases

According to UC scientists, fungi are the single most important cause of diseases in plants. There are more than 10,000 identified pathogenic fungi.

Some have a wide host range and afflict many kinds of plants.

Many fungi have the ability to survive in soil in the absence of their host plants.

Crop rotation is an important cultural practice to control these diseases.

# Fungal diseases: Verticillium wilt



# Fungal Disease: Fusarium Wilt



# Fungal Disease: Powdery mildew



Infected cucumber plant



Infected tomato leaf

UC Statewide IPM Project  
© 2000 Regents, University of California

# Crop Rotation

- Balance soil fertility
  - Heavy feeders (corn, tomatoes, etc.) vs Light feeders (root crops and herbs)
  - Nitrogen fixers (peas, beans, other legumes) vs heavy Nitrogen consumers (tomatoes, leafy greens)
- Reduce soil-borne diseases
- Interrupt invertebrate pest life cycles

# Crop Rotation by Families

## Warm Season

- Cucurbits (Cucurbitaceae)-squash, melon, cucumber
- Nightshade (Solanaceae)-tomato, eggplant, pepper, potato
- Legumes (Leguminosae)-beans

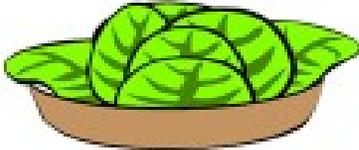
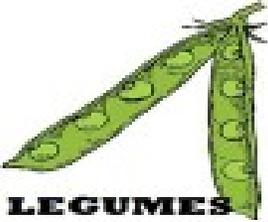
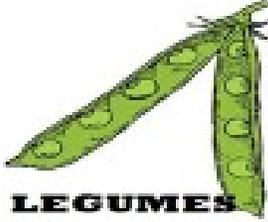
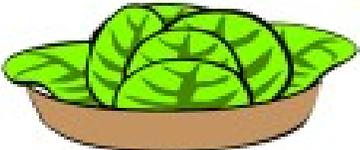
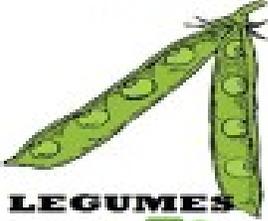
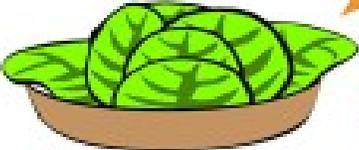
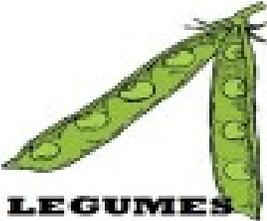
## Cool Season

- Umbel-flowered (Umbelliferae)-carrots, parsley, celery
- Onion/Allium (Amaryllidaceae)-garlic, leeks, onion
- Legumes (Leguminosae)-fava

## Extended Cool Season

- Cruciferous (Cruciferae)-cabbage, radish, turnips
- Spinach (Chenopodiaceae)-beets, chard, spinach
- Legumes (Leguminosae)-peas

# CROP ROTATION CHART

	AREA 1	AREA 2	AREA 3	AREA 4
YEAR 1	 <b>LEAVES</b>	 <b>FRUIT</b>	 <b>ROOTS</b>	 <b>LEGUMES</b>
YEAR 2	 <b>LEGUMES</b>	 <b>LEAVES</b>	 <b>FRUIT</b>	 <b>ROOTS</b>
YEAR 3	 <b>ROOTS</b>	 <b>LEGUMES</b>	 <b>LEAVES</b>	 <b>FRUIT</b>
YEAR 4	 <b>FRUIT</b>	 <b>ROOTS</b>	 <b>LEGUMES</b>	 <b>LEAVES</b>

# Bird Damage



# Rodent Damage

- Rats are common in our area.



# Identifying the night culprit



# Birds and Rats

Deter birds with netting, frightening devices, shooting, trapping, or repellants.

UC IPM Pest Note 74152

<http://ipm.ucanr.edu/PDF/PESTNOTES/pnbirdstreefruitsvines.pdf>

Deter rats with sanitation, rodent-proofing buildings, and trapping to control populations.

UC IPM Pest Note 74106

<http://ipm.ucanr.edu/PDF/PESTNOTES/pnrats.pdf>



**Questions?**

**Please use the chat  
feature of Zoom to  
send in your questions.**

# Sources of information

California Master Gardener Handbook, second edition

UC Master Gardeners of Sacramento County: Vegetable Problems in Summer-Abiotic Disorders

[http://sacmg.ucanr.edu/Vegetable\\_Problems\\_Summer/Abiotic/#shape](http://sacmg.ucanr.edu/Vegetable_Problems_Summer/Abiotic/#shape)

UC Master Gardeners of Sacramento County: Vegetable Problems in Summer-Diseases [http://sacmg.ucanr.edu/vegetable\\_problems\\_summer/diseases/](http://sacmg.ucanr.edu/vegetable_problems_summer/diseases/)

UC Master Gardeners of Sacramento County: Vegetable Problems in Summer-Pests [http://sacmg.ucanr.edu/vegetable\\_problems\\_summer/pests/](http://sacmg.ucanr.edu/vegetable_problems_summer/pests/)

University of Massachusetts Amherst, Tomato, Physiological Ripening Disorders <https://>

[ag.umass.edu/vegetable/fact-sheets/tomato-physiological-ripening-disorders](https://ag.umass.edu/vegetable/fact-sheets/tomato-physiological-ripening-disorders)

UC IPM, Home, Garden, Turf, and Landscape Pests (find all mentioned pests at this site) <http://ipm.ucanr.edu/PMG/menu.homegarden.html>

Pests in the Urban Landscape Blog, “Rats in the Garden” Elaine Lander <https://ucanr.edu/blogs/UCIPMurbanpests/>

Healthy Garden Tips: Crop Rotation

**FIND this slideshow & further resources  
on our website:**

UC Master Gardeners of Napa County  
<http://napamg.ucanr.edu>





## UC MG WEBSITE NAVIGATION

Go to UC Master Gardeners Website: [napamg.ucanr.edu](http://napamg.ucanr.edu)

Go to **Events Find Us!**

Then click on references and slides **here**

UNIVERSITY OF CALIFORNIA  
Agriculture and Natural Resources

Learn more about UC ANR Search

SHARE Give

UNIVERSITY OF CALIFORNIA  
Agriculture and Natural Resources

UC Master Gardeners • Napa County

Home Garden Questions? **Events-Find us!** En español Members Area

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*

UNIVERSITY OF CALIFORNIA  
Agriculture and Natural Resources

Learn more about UC ANR Search

SHARE Give

UNIVERSITY OF CALIFORNIA  
Agriculture and Natural Resources

UC Master Gardeners • Napa County

Home Garden Questions? Events-Find us! En español Members Area

**Events and Find Us!**

Events and Information

**References and Slides Workshops and Events**

We're Social!

Like us on facebook

Join us on Instagram



Explore our whole website to find many more garden resources

# Sources of information

California Master Gardener Handbook, second edition

UC Master Gardeners of Sacramento County: Vegetable Problems in Summer-Abiotic Disorders

[http://sacmg.ucanr.edu/Vegetable\\_Problems\\_Summer/Abiotic/#shape](http://sacmg.ucanr.edu/Vegetable_Problems_Summer/Abiotic/#shape)

UC Master Gardeners of Sacramento County: Vegetable Problems in Summer-Diseases [http://sacmg.ucanr.edu/vegetable\\_problems\\_summer/diseases/](http://sacmg.ucanr.edu/vegetable_problems_summer/diseases/)

UC Master Gardeners of Sacramento County: Vegetable Problems in Summer-Pests [http://sacmg.ucanr.edu/vegetable\\_problems\\_summer/pests/](http://sacmg.ucanr.edu/vegetable_problems_summer/pests/)

University of Massachusetts Amherst, Tomato, Physiological Ripening Disorders <https://>

[ag.umass.edu/vegetable/fact-sheets/tomato-physiological-ripening-disorders](https://ag.umass.edu/vegetable/fact-sheets/tomato-physiological-ripening-disorders)

UC IPM, Home, Garden, Turf, and Landscape Pests (find all mentioned pests at this site) <http://ipm.ucanr.edu/PMG/menu.homegarden.html>

Pests in the Urban Landscape Blog, “Rats in the Garden” Elaine Lander <https://ucanr.edu/blogs/UCIPMurbanpests/>

Healthy Garden Tips: Crop Rotation



**Questions?**

**Please use the chat  
feature of Zoom to  
send in your questions.**



**Thank you for  
joining us this  
evening.**