

# Tomatoes 101

# Virtual Class Event

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Timothy McDermott DVM

Extension Educator, Agriculture and Natural Resources, Franklin County

College of Food Agriculture and Environmental Science

Visiting Instructor, Department of Veterinary Preventative Medicine

College of Veterinary Medicine

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**THE OHIO STATE UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

# **Tomatoes – *Solanum lycopersicum***

## **Solanaceae family - Nightshades**

### **Fun Facts:**

- **Full Sun is Best – If not choose wisely**
- **Many different maturity rates depending on cultivar.**
- **Determinate vs. Indeterminate**
- **Many types – dwarf, cherry, paste, storage, etc**
- **Many colors and shapes**
- **Heirloom vs. Hybrid**
- **Interstitial Root Growth**



# Tomatoes

**Tall Support!**  
**Mulch Deeply**

- Organic
- Plasticulture
- Check Soil Temperature

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# Trellising and Support

- Cages
- Stakes
- Florida Weave
- String Trellis
- Cattle Panel





**Sucker #1**

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**Sucker #2**



## Single Leader Staking

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# Florida Weave

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# Single Leader String Trellis

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## Greenhouse and High Tunnel

- Single Leader
- Clips, woven support
- Lean and Lower

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# Fertilization and Watering

- Tomatoes like slightly acidic
- Heavy Feeder
- Organic Matter
- Soil Test
- Adjust due to rainfall
- Need to re-apply
- Phosphorus and Potassium
- Bottom irrigate deeply
- Mulch

DATE	LAB #	SERIAL #	COUNTY	ACRES	FIELD ID
12/06/2018	S18-45356	75671	OH-FRANKLIN		Shepherd
SOIL NUTRIENT LEVELS			Below Optimum	Optimum	Above O
Soil pH			<div></div>		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			<div></div>		
Potash (K <sub>2</sub> O)			<div></div>		
Magnesium (MgO)			<div></div>		
Calcium (CaO )			<div></div>		
RECOMMENDATIONS FOR: <i>Mixed Vegetables</i>					



# Abiotic Problems

6/3/2020

- 5cm = 67.84 F
- 10cm = 68.40 F

CFAES Weather System

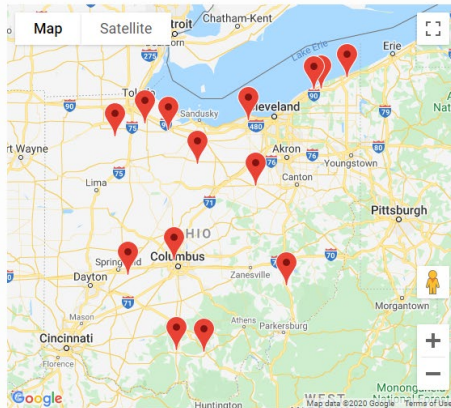


#### CFAES Stations

Ashtabula  
Columbus  
Eastern  
Jackson  
Muck Crops  
North Central  
Northwest  
Piketon  
Western  
Wooster  
USDA Stations  
Avon  
Madison  
Pemberville  
Perry  
Archived Stations  
Mahoning  
Mt Vernon (89-99)  
Southern (86-05)  
Miami (82-06)  
Delaware (82-13)

GDD Graphs  
CDD Graphs  
Daily Overview  
Precipitation and Soil Temperature  
Graphs  
Comfort Index Graphs  
GDD and Precipitation Calculator  
Historical Records  
Instrumentation  
FAQ

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## Blossom Drop

- Extreme Temperature most common
- Ideal:
  - 70-80 F in day and 60-70F at night
- Problems:
  - Over 90F in day, below 50F at night.







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## Zipper

- Flower Problem
- Cold Weather





## Catfacing

- Flower formation injury?
- Pollination problem?
- Can have deep lesions
- Cold weather
- Big Heirlooms





# Cracking

- Uneven moisture
- DRY → RAIN





## **Green/Yellow Shoulders**

- **Drought**
- **Heat Stress**
- **Nutrient deficiency?**





# Blossom End Rot

- Deficiency of calcium in the fruit
- Calcium not mobile in the plant
- Also can affect peppers and eggplant
- Manage soil moisture - MULCH
- Provide adequate soil calcium
- Choose resistant varieties
- Increase soil organic matter
- Do not overfertilize with nitrogen





# Diseases and Insects



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- Fungal #1 –disease
- Also viral/bacterial
- IPM Strategies
  - Mulch
  - Crop rotate
  - Fertility
  - Organic Matter
  - Pesticides
  - Resistance
- Insects
  - Hornworm
  - Fruitworm
    - (corn earworm)
  - Aphids
  - Stink Bugs
  - Flea Beetles





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# Good Bug or Bad Bug?



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## Ohioline

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### Growing Tomatoes in the Home Garden

**Gary Gao, Associate Professor and Extension Specialist, Ohio State University Extension**  
**Brad Bergefurd, Extension Educator, OSU South Centers, Ohio State University Extension**  
**Bob Precheur, Associate Professor Emeritus, Department of Horticulture and Crop Science, Ohio State University**

The tomato is probably the most widely grown vegetable by the home gardener because of its value, many uses, and relative ease of culture (Figure 1). Originating in Central and South America, the tomato was domesticated in Mexico. There are many related wild species in South America, and the word "tomato" was the name used by Native Americans.

The tomato was first introduced to the United States in the 1700s. It was once thought by European colonists to be poisonous. Thomas Jefferson was one of the first to grow tomatoes, which he called "Love Apples" at the time. The tomato was not recognized as a useful vegetable until the 1800s. Today, raw or in innumerable cooked dishes, the tomato is an almost daily part of the American diet.

One medium-sized tomato has only 35 calories. The tomato is rich in vitamins C and A, and small amounts of the B vitamins and potassium. Tomatoes are also very well known for their high carotenoid content. Nine different carotenoids have been identified in tomatoes, two of which are lycopene and beta-carotene. Lycopene is a powerful antioxidant that has been linked to a reduced risk of heart disease and certain types of cancer.

16

July  
2019

### Keeping Tomatoes Healthy in Hot Weather

What a summer it has been so far. Early on the heavy rains provided many challenges for the tomato grower. Now we are in a heat wave with more heat to come. Contrary to what many think, tomatoes are not heat lovers. They much prefer 75 to 95. When temperatures get too hot during the [...]

Posted by [Timothy McDermott](#) at 12:05pm

Posted in [Insects, Weeds and Diseases](#), [Vegetable Production](#) | [Leave a comment](#) | [Edit](#)

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June  
2019

### Keeping Tomatoes Healthy in Wet Weather

We are in the middle of a period of wet weather that is predicted to deliver multiple inches of rain to central Ohio and even more to other soaked parts of our state. Tomatoes are a crop that can suffer several problems related to heavy rainfall that can shorten the harvest period and affect yield. [...]

Posted by [Timothy McDermott](#) at 8:15am

Posted in [Insects, Weeds and Diseases](#), [Vegetable Production](#) | [3 Comments](#) | [Edit](#)

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May  
2019

### Planting Tomatoes When the Soil is Too Cold

When planting seeds or transplants it is important for the backyard grower, community gardener or urban farmer to keep track of soil temperatures, as

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# Questions?



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**MCDERMOTT.15@OSU.EDU**