Tomato Talk

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Texas A&M AgriLife Extension Service - Collin County
About the Tomato

• Often Red
• Type of Fruit: Berry
• Member of Nightshade Family: Solanceae
  – Same family as Pepper, Potato, Eggplant,
• Scientific Name: *Solanum lycopersicum*
• Originated in South America
• First cultivation: ~500 BC
• Europeans discovered: 1493 or 1521
• Production: 12,526,070 Metric Tons (U.S.)
• Value: $2 billion annually
About the Tomato

• American Popularity
  – Fourth most popular fresh-market vegetable
  – Eat an average of 23 lbs of tomatoes per year
  – Increased their tomato consumption 30% over the last 20 years
  – 93% gardens grow tomatoes
  – California grows the most processed tomatoes
  – Florida grows the most fresh tomatoes
Economic Value

Based on a survey of garden experts, on a scale from 1 to 10
About the Tomato - Nutrition

• lycopene: one of the most powerful natural antioxidants
• Plus carotene, anthocyanin, and other antioxidants
• Rich in Vitamin A & C
• Some varieties have high values of antioxidants and vitamins
About the Tomato – Types*

- Beefsteak
- Bell
- Blocky
- Cherry
- Currant
- Deep Round Oval
- Flattened Globe
- Grape
- Long Blocky
- Long Pointed
- Oxheart
- Pear
- Plum
- Round
- Small Pear
- Small Pointed
- Stuffer

*Not intended to definitive list
About the Tomato - Varieties

• Estimated 7,500 tomato varieties grown
• Estimated between 10,000-25,000 varieties

http://njaes.rutgers.edu/tomato-varieties/
About the Tomato - Uses

- raw in salads
- processed into ketchup or tomato soup
- green tomatoes can also be breaded and fried
- used to make salsa
- pickled
- tomato juice as a drink or cocktails
- canned
- dried in the sun
- Mediterranean and other cuisine
- pizza
- pasta sauces
So you want to grow tomatoes... WHERE DO YOU START?
Start by planning ahead

• A Successful Garden starts with proper:
  – Planning and Design
  – Soil Preparation
  – Plant Selection and Installation
  – Maintenance:
    • Proper Soil Fertility
    • Proper Irrigation
    • Utilize mulch
    • Use Integrated Pest Management
Plan around the Garden Calendar

- Tomatoes should be planted after the last freeze
- Average last freeze for Collin County is March 15th
- Each year is rarely average, so be prepared for a late freeze
- Tomatoes need to be planted as early as possible, in order to beat the heat
- High temperature prevents fruit set, especially in large tomato varieties

Tomatoes can be planted Spring and Fall in Texas
Understand our climate

Collin County vs. Miami, Florida
# Min. and Max. Temperatures

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
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<tbody>
<tr>
<td>Max °F</td>
<td>52.5</td>
<td>58.1</td>
<td>65.6</td>
<td>73.3</td>
<td>80.2</td>
<td>87.7</td>
<td>92.7</td>
<td>92.6</td>
<td>85.4</td>
<td>75.7</td>
<td>63.2</td>
<td>54.8</td>
<td>73.5</td>
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<tr>
<td>Mean °F</td>
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<td>46.5</td>
<td>53.9</td>
<td>62.3</td>
<td>70.5</td>
<td>78.1</td>
<td>82.4</td>
<td>81.6</td>
<td>74.8</td>
<td>64.4</td>
<td>52.8</td>
<td>44.5</td>
<td>62.8</td>
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<tr>
<td>Min °F</td>
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<td>34.9</td>
<td>42.2</td>
<td>51.2</td>
<td>60.8</td>
<td>68.5</td>
<td>72.0</td>
<td>70.6</td>
<td>64.2</td>
<td>53.0</td>
<td>42.4</td>
<td>34.1</td>
<td>52.1</td>
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</table>
Garden Planning and Design

SITE SELECTION

• Space
  – What do you want to grow and how much space does it require

• Soil
  – Drainage, Type, pH, Nutrients, Soil Properties

• Water
  – Quality, Quantity, Reliability

• Light
  – Full sun, at least 8 hours/day
Space

• Allow enough space for your garden plants to reach their mature size
• Tomato plant size varies greatly by variety and type
• Space required varies by staking, trellis or caging systems used
• General guidelines: plant tomato transplants 3-4 feet apart
Space

- Consider “square foot gardening” when space is limited
Garden Designs

• There are lots of ways to grow a tomato plant...
Garden Designs

• There are lots of ways to grow a tomato plant...
Garden Designs

• There are lots of ways to grow a tomato plant...
Soil Preparation

• Healthy Soil, Healthy Plants
• Whether you are growing tomatoes in:
  – In ground
  – On top of the ground
  – Raised Beds
  – Containers
• …you will need to provide your tomato plant with a good soil.
Soil Preparation

- **Container Gardening**
  - Use a good potting mix intended for vegetables
  - Or make your own potting mix

- **On top of ground**
  - Essentially same as container gardening
  - Use a good potting mix or make your own

- **In ground**
  - Essentially a raise bed without the edging
  - Amend the soil with compost

- **Raised Bed**
  - Uses edging, such as wood or stone, to maintain the shape of the bed
  - Amend the soil with compost
Soil Preparation

- **Keys to success with Container and On top of ground gardening:**
  - Use a mix with both good drainage and moisture retention
    - Peat moss, vermiculite, perlite, expanded shale, etc.
  - Requires more water, so be prepared to water often
    - Check soil daily and allow soil to dry slightly between irrigation events
    - During the hottest part of the summer you’ll need to water once or twice per day
  - You will need to fertilize
    - Use a diluted liquid fertilizer regularly
    - Or use a slow release fertilizer
  - Place the containers in an area that receives at least 8 hours of sunlight per day
    - Light evening shade is beneficial
  - Use mulch to reduce evaporation and insulate the soil
Soil Preparation

• In ground - raised bed with or without edging provides the following benefits:
  – Less soil modification than containers
  – Allows for larger gardens
  – Provides better drainage of excess water
  – Provides better aeration of the soil
  – Utilizes existing soil nutrients, reducing the need for fertilizer
  – Allows you to improve soil with compost
  – Increases the depth of the soil and the root system

• When possible this is best method for growing vegetables
Soil Preparation

• Raised Bed Gardening
  – Start by removing existing plants
  – Construct edging
  – Till the soil 6 to 8 inches deep
  – Add 6 inches of compost
  – Till compost into existing soil at a depth of 6 to 8 inches
  – Install drip irrigation
  – Plant tomatoes and other vegetables
  – Add mulch around the plants
    • I prefer shredded hard wood mulch
    • Maintain a 3 inch layer
    • NEVER till mulch into the soil
Why compost and mulch?

• Compost and Mulch work together to:
  – Provides a slow release fertilizer
  – Provides improved aeration and drainage
  – Improves infiltration and retention of water
  – Improves the population and diversity of beneficial microorganisms
  – Reduces the need for chemical fertilizers and risk of environmental contamination
  – Reduces evaporation of soil moisture
  – Reduces splashing of soil, which leads to disease
  – Reduces weeds
  – Insulates the soil from temperature extremes (hot and cold)
Soil Testing

- Soil Testing helps to:
  - Identify a good site for a garden
  - Determines how much fertilizer you need to apply
    - Or Tells if you already have enough
  - Identify limiting and excess nutrients
  - Know which plants you can grow

- Compost provides a significant amount of nutrients, so test your garden soil after you amend it to see the level of nutrients

- http://soiltesting.tamu.edu
Variety Selection

Which variety of tomato should I choose?

- Select varieties based upon:
  - Recommendation from Extension Service
  - Disease and pest resistance
  - Adapted to our climate and soil
  - Heat tolerance
  - Productive
  - Taste good!

http://ccmgatx.org/gardening-resources/plants-for-collin-county/vegetables.aspx
Plant Selection

- Start with a variety that is known to grow well in North Texas
- As you gain experience, try other varieties
- Heirloom varieties offer a variety of flavors, but lack disease resistance and soil adaptability
- Consider grafting heirloom on to improved variety’s roots
Tomato varieties for Container Gardening

- Patio
- Pixie
- Tiny Tim
- Saladette
- Toy Boy
- Spring Giant
- Tumbling Tom
- Small Fry
## Texas A&M Extension Recommended Varieties

<table>
<thead>
<tr>
<th>Variety</th>
<th>Days to Harvest</th>
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<tbody>
<tr>
<td><strong>Large &gt;12 oz</strong></td>
<td></td>
</tr>
<tr>
<td>Carmello (Heirloom)</td>
<td>70</td>
</tr>
<tr>
<td>West Virginia Sweet Meat (Heirloom)</td>
<td>80</td>
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<tr>
<td><strong>Medium 4-11 oz</strong></td>
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</tr>
<tr>
<td>Carbon (I)</td>
<td>80</td>
</tr>
<tr>
<td>Carnival (D)</td>
<td>70</td>
</tr>
<tr>
<td>Paul Robeson (Heirloom)</td>
<td>75</td>
</tr>
<tr>
<td><strong>Paste</strong></td>
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</tr>
<tr>
<td>Classica (D)</td>
<td>75</td>
</tr>
<tr>
<td>San Marzano (Heirloom)</td>
<td>80</td>
</tr>
<tr>
<td>Viva Italia (D)</td>
<td>75</td>
</tr>
<tr>
<td><strong>Small &lt;3 oz</strong></td>
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</tr>
<tr>
<td>Black Cherry (I)</td>
<td>65</td>
</tr>
<tr>
<td>Dona (I)</td>
<td>65</td>
</tr>
<tr>
<td>Sun Gold (Cherry, I)</td>
<td>65</td>
</tr>
</tbody>
</table>
Master Gardener Recommended Tomatoes Varieties

• Tomatoes - Large
  – **Early Girl** - easy to grow, tasty, matures quickly
  – **Celebrity** - tasty, disease resistant, handles uneven moisture better than most so less cracking, firm, easy to slice
  – **Carnival** - old favorite, large, flavorful
  – **Carbon** - dark fleshed, excellent flavor
  – **Paul Robeson** - brick colored, complex flavor, heirloom

• Tomatoes - Small
  – **Juliet** - small red paste tomato, abundant elongated fruits, good flavor, keeps producing in summer, ripens in 60 days
  – **Sweet Baby Girl** - small red cherry tomato, tender, sweet flavor, produces over long period of time ripens in 65 days
  – **Sweet Gold** - yellow cherry tomato, abundant clusters of yellow-gold tomatoes, fruity flavor, tender, long season, ripens in 60 days
  – **Porter** - small red tomato, less cracking than sweet 100s
  – **Sugary** - very tasty, large producer
  – **Yellow Pear** - incredibly prolific, indeterminate, heirloom
Plant Selection

• Disease resistance in tomatoes indicated by initials include:
  V - *Verticillium* wilt
  F - *Fusarium* wilt (F1, race 1; F2, race 2)
  N - Nematode
  T - Tobacco mosaic virus
  A - *Alternaria alternata* (crown wilt disease)
  L - *Septoria* leafspot
Plant Propagation

• Start your own plants from Seed

• Or buy transplants
Plant Installation
Tomato supports

• Cages, Trellis, Stakes, etc.

http://masterofhort.com/
Irrigation
Irrigation
Fertilizer
Soil Fertility

Macronutrients:
• Nitrogen (N)
• Phosphorus (P)
• Potassium (K)

Secondary Nutrients:
• Calcium (Ca)
• Magnesium (Mg)
• Sulfur (S)

Micronutrients:
• Iron (Fe)
• Zinc (Zn)
• Manganese (Mn)
• Copper (Cu)
• Boron (B)
• Molybdenum (Mo)
Tips for Pest and Disease Management

1. Use crop rotation: don't install plants that are in the same family in the same spot each year, move them around the garden.
2. Use drip irrigation and mulch to prevent splashing of infested soil on to plant surfaces.
3. Use disease resistance varieties.
4. Sanitize your tools.
5. Don't wound the plants.
6. Use soil solarization to reduce or eliminate insects, diseases, and weeds (cover the garden with clear plastic to heat the soil).
7. Be mindful of bringing in infested soil, compost or plants. - Purchase soil, compost, and plants from reputable sources.
8. Water correctly, don't over or under water. Watering deeply and infrequently to encourage root growth: Allow the soil to dry slightly between watering.
Harvesting
Storage
The End

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