

## VEGETABLES

### The Difference Among Determinate, Semi-Determinate and Indeterminate Tomatoes

Tomatoes are often classified as determinate, semi-determinate or indeterminate. Determinate plants produce one large crop and then virtually nothing thereafter. They are favored by commercial growers that want to harvest most of the fruit from one picking. They then use succession planting where a new crop is planted on a set schedule to have fruit production throughout the season. Mature plants are smaller than other types and can be planted closer together to get the most tomatoes from a set space. Primo Red is a variety that is strongly determinate.

Indeterminate plants are the traditional tomatoes that never stop growing. They are capable of producing fruit throughout the season unless disease stops production or until frost kills the plant. They do best with support as they can reach six feet tall when staked or caged.

Semi-determinate plants are more compact than indeterminate types but are also capable of producing fruit throughout the season.

Most of the varieties available to home gardeners are either indeterminate or semi-determinate. Though both are capable of producing fruit throughout the season, our hot Kansas summers often cause a dry spell in production of both types. Tomatoes are less likely to set fruit when night temperatures remain above 75 degrees and day temperatures are above 95. Hot, dry winds make the situation worse.

Gardeners with limited space will likely prefer indeterminate or semi-determinate types to stretch out the harvest season. If there is space, you may want to grow a combination of all three with the determinates used to produce a large harvest for canning or tomato juice and the remainder for fresh eating. (Ward Upham)

## Tomato Trials

Each year we have our Master Gardeners plant and rate a number of tomato varieties. We also give a set to Tom Fowler with the University of Missouri Extension Service. He combines our set with a number of additional varieties. I am still working on data from our Kansas Master Gardeners and will write on those results later. Following are the results from varieties that Tom grew in 2015-2017 All data are from the combined results of all three years. We list the average fruit size in ounces, the numbers of fruit per plant and the number of pounds per plant. I have listed the varieties in alphabetical order.

<b>Variety</b>	<b>Avg/Fruit (oz)</b>	<b>Fruit/Plant</b>	<b>Lbs/Plant</b>
Amana Orange	11.74	6.6	4.9
Amish Paste	2.51	59.9	9.4
Anna Russian	7.42	16.5	7.6
Arkansas Traveler	5.03	20.8	6.5
Beefmaster	9.52	17.5	10.4
Beefsteak	4.50	30.3	8.5
BHN871	5.91	19.5	7.2
Big Beef	5.98	21.2	7.9
Big Boy	5.83	12.1	4.4
Black Krim	6.72	13.0	5.5
Brandywine Black	6.58	17.5	7.2
Brandywine Pink	12.28	9.1	7.0
Brandywine Red	8.18	6.1	3.1
Brandywine Yellow	9.04	1.3	0.7
Celebrity	5.65	26.5	9.4
Chef's Choice	6.14	24.0	9.2
Cherokee Purple	8.48	13.7	7.3
Delicious	4.44	23.2	6.4
Early Girl	3.44	36.2	7.8
Florida 91	6.71	23.1	9.7
German Johnson	8.37	6.7	3.5
Giant Belgium	11.41	8.3	5.9
Golden Jubilee	5.22	13.9	4.5
Jet Star	5.81	29.6	10.8
Mortgage Lifter	8.33	9.1	4.7
Oxacan Jewel	5.83	14.2	5.2
Oxheart	6.11	15.5	5.9
Ponderosa Pink	9.62	6.4	3.8
Roma	1.85	63.9	7.4
Rutgers	4.01	29.9	7.5
Summer Pick	7.40	21.0	9.7
Vintage Wine	8.07	6.8	3.4

### More Tomato Trial Information

This week is a look at a sampling of ratings done during 2017. All 2017 data has not been analyzed yet so this is not the full picture but should give an idea of how different varieties performed. We looked at 10 different varieties and recorded the number of fruit per plant, the total number of pounds of fruit per plant and the average size of tomato in ounces. Results are below.

<b>Tomato</b>	<b>Fruit/plant</b>	<b>Lbs/plant</b>	<b>Ounces/Fruit</b>
Celebrity - check	113.5	31	4.4
Dixie Red	60.3	28.7	7.6
Camaro	75.7	27.5	5.8
Summer Pick	58.9	30.1	8.2
Mt. Merit	91.0	32.3	5.7
Plum Regal	107.4	21.7	3.2
Resolute	33.8	12.5	5.9
Jetstar – check	88.7	23.0	4.2
Chef's Choice Orange	76.1	20.9	4.4
Tie Dye	125.2	25.5	3.3

All listed tomatoes are determinate or semi-determinate except the last three (Jetstar, Chef's Choice and Tie Dye).

Celebrity was our check for determinate or semi-determinate tomatoes. We use Celebrity as our check as it has proven to be an excellent tomato for years. Celebrity continues to prove itself to be an excellent yielding tomato with more pounds per plant than any other except Mountain Merit. Our two best tomatoes in regard to fruit size were Summer Pick and Dixie Red.

The latter three are indeterminate types with Jetstar being the standard. In this case, Tie Dye produced more pounds per plant than either Jetstar or Chef's Choice. Chef's Choice also produced the largest fruit of the three though Jet Star was close.

Our Southwind District also did a taste rating (data not shown). Dixie Red was the first choice followed by Chef's Choice and then Celebrity. All other varieties rated much lower. (Ward Upham)