



## Redwood Barn Nursery

1607 Fifth Street Davis, California

### Tips and Hopes for a Better Tomato Season

“I hardly got any tomatoes last year.”

2017 was a tough summer for tomato yields for many folks.

There are numerous factors in successfully growing tomatoes. The plants need a lot of sunshine. Some plant food is helpful. Deep watering is a must. The plant needs to be caged up off the ground. There are a few disease and pest issues, although we are much less encumbered by those than gardeners in rainier climates. Tomato plants love the Sacramento Valley, and remain one of our top crops in the region.

The tomato is a vigorous vine, but it can be a little finicky about the optimum temperature for creating fruit, and 2017 was a hot summer.

The biggest factor in fruit set last summer was high temperatures during the prime flowering period. Variety selection was also important.

#### **The growth cycle**

A tomato plant has sufficient size and leaf area to flower and set fruit about six weeks after it is planted out in the ground. For most varieties, if temperatures are between about 55 to 90 degrees F, the flower will self-pollinate, and fruit will begin to develop.

Some varieties can set and hold fruit at lower temperatures, allowing an earlier start to the season in regions with short growing seasons. Early Girl and Big Beef are known for this, making them widely adaptable. Cherry tomatoes also set at lower temperatures.

Some varieties that are popular in other regions are less tolerant of higher temperatures.

Brandywine and Beefsteak types drop their blossoms above 85 degrees, so we don't recommend them here.

#### **Optimal flowering weather**

We start planting tomatoes in mid to late April, meaning the first ones we plant are big enough to flower and set fruit by about June 1. Our growing season is very long: we can still plant through June and harvest tomatoes all the way to the end of October, sometimes even into winter. But the best flavor and quality is in the fruit that ripens in late summer

Fruit takes 6 to 10 weeks from set to ripening, depending on the variety and the size of the fruit. If we want to harvest by October, fruit needs to set by August. So what really matters, temperature-wise, is the number of days in June and July that are 90 degrees or less.

#### **How hot was 2017?**

In the summer of 2016 our high temperatures June 1 through July 31 were less than or equal to 90 degrees 31 times during the period from June 1 through August 1, which is about typical.

We had:

- five days in the 70s,
- 26 days in the 80s,



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- 23 days in the 90s, and
- 7 days over 100 degrees.

So during the crucial flowering period, half of the days were suitable for fruit to set. That's plenty.

How about 2017?

Oy. Here's how it went:

- five days in the 70s,
- 15 days in the 80s,
- 30 days in the 90s (basically the entire month of July), and
- 10 days over 100 degrees (plus six more in late August and early September).

Only one-third of the days were suitable for fruit to set. The flowers just kept falling off. We finally had better temperatures in August, so many people got great yields in October. But by then a lot of gardeners had given up.

### **Does earlier planting help increase yields?**

Only if you plant types that will flower and that can hold their fruit at lower night-time temperatures. Early Girl, Fourth of July, and Big Beef are good examples.

A risk of earlier fruit set is a higher incidence of blossom-end rot (BER). Once thought to be caused by calcium deficiency, evidence now points to internal metabolic issues that correlate with low temperatures; i.e., cold soil. Watering too often when the nights are cool is a factor. Sauce tomatoes such as Roma are especially prone to it.

The plant outgrows it and normal, unaffected fruit develop as the season progresses, but BER sort of defeats the purpose of early planting.

### **Will pruning the plants improve yield?**

No, pruning reduces yield overall.

Pruning tomato vines is sometimes done for specific purposes, especially in other regions.

Where the season is short, the theory is that it redirects the energy into the development and ripening of the earliest fruit that sets. At the other end of the spectrum, pruning is sometimes done in regions such as Florida where tomatoes are grown in winter in greenhouses. They are planted early, trained to two leaders; all suckers are removed, and the vines are pruned to get the biggest size in the earliest fruit that sets. It increases the market value (early red tomatoes command premium price), which compensates for the overall loss of yield.

### **What about "bloom food"?**

There is no fertilizer that increases flowering or fruit production. Young plants benefit from some nitrogen to get them growing well, but don't overdo it.

### **Will grafted tomatoes yield better?**

Grafting tomatoes has really caught on in recent years. Rootstocks can provide disease resistance and greater vigor. We don't lack for vigor here, but if you have a problem with



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nematodes or certain soil diseases then grafted tomatoes may help. Otherwise, they're probably not worth the extra cost. But I certainly encourage people to experiment, especially with some of those marginal heirloom varieties.

### **What are the best strategies for getting better and more reliable yields?**

- Plant a diversity of varieties: some smaller-fruited types, some known for earlier and later production, some Italian varieties.
- Smaller-fruited types improve your odds. Fourth of July and Sweet Carneros Pink are two that are great performers here. When in doubt, plant a cherry tomato.
- Plant some hybrids for greater vigor and yield, and reliable disease resistance.
- Don't crowd the plants. A single vigorous vine will produce more than three that are competing with each other.
- Water thoroughly, and more deeply as the season goes along. Plants in raised planters will need more frequent watering than those in open ground.
- Cage your tomatoes to help the foliage protect the fruit from sunburn. Don't prune them.

### **What about peppers?**

Seems like a lot of the fruit got sunburned last year, especially on the south and west sides of the plants.

Sunscald is a problem on ripening peppers, especially bell peppers, when temperatures are in the upper 90's or above. The plants set and develop fruit just fine in hot weather. But fruit that is exposed to direct sun at the hottest time of day will scorch on the surface. You can provide some shade to the west by attaching shade cloth to a short fence structure. Or you can plant the peppers in light shade or just morning sun. Your overall yield is likely to be lower, but you may actually wind up with more usable fruit.

### **Are other summer vegetables affected by temperature extremes?**

Yes, bean yields were low as the pollination was disrupted by high temperatures. Some squash, notably zucchini, yields less when temperatures are high. This may not be considered a drawback by some....

### **When is the best time to plant?**

Right now.

### **Is it getting late? When do you plant summer vegetables?**

Not too late at all! Vegetable planting begins in earnest now and continues into June.

My summer planting sequence goes like this:

- February to early April start pepper seeds indoors (eggplants, too, if you need quantity). You can skip this stage by buying plants at a garden center when you're ready to plant. It's important that the temperature not get below 55 degrees F. where you have the seeds. An outdoor greenhouse may not be warm enough at night.



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- Late March to early April start tomato seeds. They grow really fast, so start them later than the others. Again, it is simpler to buy plants later.
- Mid-April: transplant pepper seedlings into 4-inch pots. Throughout April we gather the types we plan to grow and shift them to larger containers. It gets a little crowded on my porch.
- Late April: plant out the first tomatoes. It's ok to plant green beans, older types of sweet corn, and squash, if it isn't unusually cold. Start seeds of melons and winter squash in pots.
- May is our active vegetable planting month.  
Move larger pepper or eggplant seedlings up into black one-gallon containers early in the month. Don't be in any hurry to plant them in the ground, as they like really warm soil. Plant cucumbers, squash, muskmelons.  
First planting of basil in the ground is in early May. Plant sunflowers.  
I continue planting tomatoes through May because I find more varieties that I want to grow and there always seems to be room for one more.  
Plant peppers, eggplants, in the ground late in May when nights and soil are warm. June is also fine.
- June: plant super-hot 'chinense' peppers (Habañero, etc.), watermelons, and okra. These real heat-lovers suffer in cold soil. Plant pumpkins and winter squash on the fringes of the garden, do more plantings of corn and beans, and plant more basil (I let it flower for the bees, so I do successive plantings). I plant more sunflowers to get continued bloom.
- Last plantings of beans, corn, pumpkins, winter squash, and sunflowers are in July. Last planting of basil is in September.

Don't give up! One of the saddest comments was "they hadn't produced anything by August, so I just pulled them out." I had a huge crop of tomatoes in 2017 – in October. Here's to a bounteous 2018.



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A reliable Italian heirloom tomato for Davis gardens. Costoluto Genovese has been a consistent producer for me every year. It has big, meaty fruit that are excellent for sauce.



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Early Girl hybrid tomato is consistent and reliable. It sets and holds fruit at lower temperatures, so it is often the first to yield in the garden but is also well known for producing crops late into fall. These fruit are ripening in mid-October.



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Smaller tomato fruit take less time to ripen from the time that they set. These Sweet Carneros Pink variety's fruit set in early August and were harvested in late September.



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Don't plant the super-hot peppers too early! They need warm nights and warm soil to get going. Once established, hot peppers like this Habañero can be producing extra-hot fruit all the way through October. They make great fall table decorations but handle them with care.



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Every year someone comes looking for pumpkin seedlings in fall. They are best planted in early July for Hallowe'en jack-o'-lanterns. Here the pumpkin is almost full color in mid-September, but the fruit will still be looking great in late October and November.



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Basil flowers are very attractive to bees, drawing them closer to your vegetables to help with pollination. So I no longer remove the blooms, I just keep planting more basil all summer long. Shown here is Thai basil.



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September harvest from July flowers of a large-fruited tomato variety, Big Zak Hybrid.



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Hot peppers need warm nights and warm soil to get going. If you plant them too early, the plants languish and don't flower or fruit well. Planted in July, this Chile de Arbol, a rather hot variety, is producing well in September.



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Don't give up! We have a long tomato growing season here. Here is October harvest of a smaller-fruited tomato variety, Red Boar, from August blossoms.