

Recommended Tomato Varieties for Commercial Production in Iowa

Authors

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**SUSTAINABLE
VEGETABLE
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Tomatoes are members of the Solanaceae family, and one of the most widely grown vegetable in the United States. They come in a wide variety of plant habits from container plants to sprawling garden vines and many unique fruit colors, sizes, and shapes. According to the 2012 Agriculture Census, in Iowa, tomatoes were harvested from a total of 225 acres and sold either directly to the consumer or to retailers for fresh market sales. Based on plant growth habits, there are two major types of tomatoes that are commonly grown:

Determinate









These plants have a small and compact bush type shape with a concentrated fruit set. Determinate tomatoes form flower clusters at the terminal growing point which limits plant size. Suckers and laterals from these plants are either not pruned at all or pruned only to the first fruit cluster. Because of the plants' concentrated fruit set, the length of harvest is greatly reduced, usually completed in six to eight pickings or within four to six weeks. Determinate tomatoes were originally developed for a once-over mechanical harvest in the wholesale market. Fruits of these plants are firmer and better adapted to handling procedures of packing shed operations for shipping or processing. Today, many determinate varieties are available with a wide harvest window and good flavor suitable for fresh market. In addition, these varieties also have excellent disease-free traits built in them.

Indeterminate







These plants grow large, have a continuous growth habit and never set terminal flower clusters. They produce abundant foliage, set lateral flower clusters at each node, and continue to grow indefinitely or until a killing frost. Suckers and lateral branches from these plants are frequently pruned to maintain a single leader. Plants are often staked and trained on support systems to keep them upright. In addition, clusters are often thinned to three or four fruit to maintain fruit size throughout the season. Fruit production is continuous over a period of months and generally suited for local fresh market sales.

(continued on page 6)

Determinate Varieties for Field and High Tunnel Production

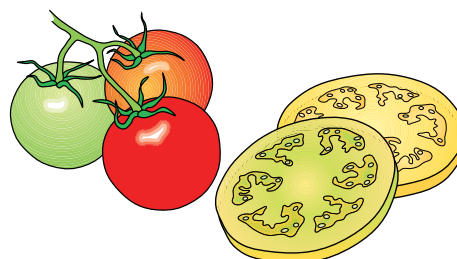
	Variety	Maturity (days)	Plant and Fruit Characteristics
 <p>A photograph of a large, round, red tomato (BHN 589) next to a blue ruler. The ruler has 'BHN 589' printed on it. A cross-section of the tomato is shown to the right, revealing its internal structure.</p>	<p>BHN 589 (V, FF, T)*</p>	<p>75</p>	<p>Mid-season; excellent appearance; high yields; large to extra-large attractive fruit; high quality for taste.</p>
 <p>A photograph of a large, round, red tomato (Celebrity) next to a blue ruler. The ruler has 'CELEBRITY' printed on it. A cross-section of the tomato is shown to the right.</p>	<p>Celebrity (V, FF, N, T, A, St)</p>	<p>72</p>	<p>Mid-season; plant is vigorous and high-yielding; medium to large fruits; flavorful.</p>
 <p>A photograph showing several large, round, red tomatoes (Florida 47R) in a green plastic container.</p>	<p>Florida 47R (V, FF, A, St)</p>	<p>75</p>	<p>Late-maturing; excellent fruit appearance; uniform size; heavy fruit loads.</p>
 <p>A photograph of several medium-sized, round, red tomatoes (Florida 91) on a dark, textured surface.</p>	<p>Florida 91 (V, FF, A, St)</p>	<p>78</p>	<p>Standard mid-season; sets fruit under high temperatures; good plant cover and fruit uniformity; fruit size smaller in late harvests.</p>
 <p>A photograph of a tomato plant with several clusters of small, round, red cherry tomatoes (Mountain Belle) hanging from the vine.</p>	<p>Mountain Belle (V, F)</p>	<p>70</p>	<p>Mid-late season; cherry tomato; productive and produces fruit for a long time; excellent fruit size and color; sweet and flavorful.</p>
 <p>A photograph of several medium-sized, round, red tomatoes (Mountain Fresh plus) on a grey surface.</p>	<p>Mountain Fresh plus (V, FF, N)</p>	<p>78</p>	<p>Standard main-season; excellent external appearance; good foliage cover; good internal fruit color; high yielding.</p>
 <p>A photograph of several medium-sized, round, red tomatoes (Mountain Spring) on a green leafy background.</p>	<p>Mountain Spring (V, FF)</p>	<p>72</p>	<p>Standard main-season; small plant, fruit deep oblate in shape; heavy fruit loads; fruit size can be variable; small degree of susceptibility to leaf diseases.</p>
 <p>A photograph of several large, round, red tomatoes (Nico) on a white surface.</p>	<p>Nico (V, FF, A, St, Mi, TSWV)</p>	<p>76</p>	<p>Mid-season; attractive fruits; variable size, good internal color; dense foliage cover; excellent yields.</p>

Determinate Varieties for Field and High Tunnel Production








	Variety	Maturity (days)	Plant and Fruit Characteristics
	Polbig (V, FF,T)	62	Early-season; small plants; small but numerous fruits; well adapted to Iowa.
	Primo Red (V, FF,T,TSWV)	70	Early maturing; large plant; large to extra-large fruit; uniform fruit size; fruits firm; good eating quality.
	Red Defender (V, FF, A, St, TSWV)	78	Late season; robust plant; large attractive fruits; prone to catfacing in early harvests; consistent producer; good shelf life.
	Red Deuce (V, FF, A, T, St)	72	Mid-season; large to extra-large fruits; good eating quality; high yields.
	Solar Fire (V, FFF, St)	72	Mid-season; medium to large-sized fruit with an attractive red color and gloss; sets fruit under high temperatures.
	Sun Leaper (V, FF)	74	Mid-season; sets fruit under high temperatures; excellent plant foliage and fruit size; fruit size smaller than Mountain series.

*Resistance or tolerant to:






- A = Alternaria stem canker
- Ff = Leaf mold
- F, FF, FFF = Fusarium wilt, Fusarium races 1 and 2, Fusarium races 1, 2, and 3
- Mi = Root knot nematode
- N = Nematode
- St = Gray leaf spot
- T = Tobacco mosaic virus
- TSWV = Tomato spotted wilt virus
- V = Verticillium wilt



Indeterminate Varieties for High Tunnel Production

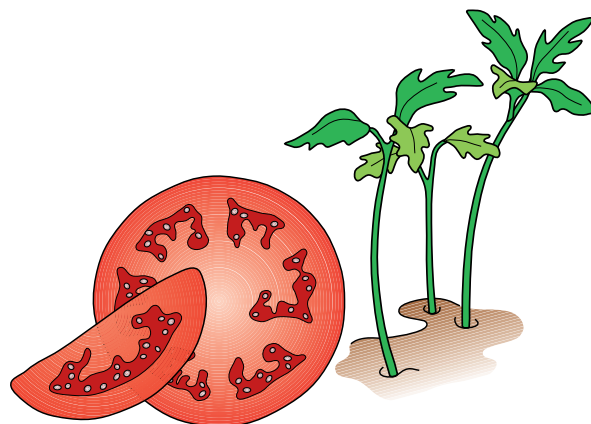
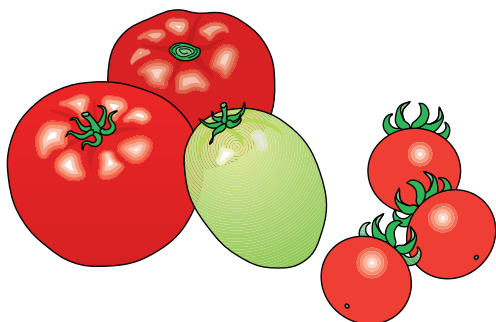
	Variety	Maturity (days)	Plant and Fruit Characteristics
	Better Boy (V, F, N)	72	Hybrid variety; mid-season; wide adaptation to climates; dense foliage prevents sun scald; large fruits; good flavor.
	Big Beef (V, FF, A, St, T)	75	Hybrid variety; mid-late season; vigorous growing plants; large to extra-large fruits; meaty; flavorful.
	Boxcar Willie	80	Heirloom variety; late season; robust plant; resistant to foliar diseases; heavy producer; fruits uniform in size; very little cracks or ripening disorders.
	Cherokee Purple	80	Heirloom variety; mid-late season; large fruit that are rose/purple with dark red internal color; fruits slightly ridged and symmetrically shaped; good flavor.
	Early Girl (V, FF)	60	Hybrid variety; early season; vigorous plants; fruits smooth red-skinned; meaty; flavorful.
	Favorita	60	Early season; long trusses; fruit round deep red in color; excellent eating quality; high yielding.
	Lemon Boy (V, F, N, A, St)	72	Hybrid variety; mid-season; vigorous growth habit, yellow color; excellent fruit size; resistant to cracking.

Indeterminate Varieties for High Tunnel Production

	Variety	Maturity (days)	Plant and Fruit Characteristics
	Mortgage Lifter	82	Heirloom variety; mid-late season; large pink to red fruits; meaty with a strong flavor; generally crack free, but early fruits can develop radial cracks.
	Red Pearl (FF)	60	Hybrid variety; cherry tomato; early season; high production; red color; tender skin; excellent flavor; moderate disease resistance; highly resistant to cracking.
	Sun Gold (V, FF)	65	Hybrid variety; golden cherry tomatoes with sweet flavor; early season; yellow-orange colored; adaptable to wide range of climates; high rate of fruit cracking and splitting; not ideal for shipping, but good for fresh market.
	Supersweet 100 (V, F)	60	Cherry tomato; early season; widely adapted; fruits produced in large clusters; high yielding; sweet tasting.
	Sweet Hearts (F, Ff)	75	Hybrid variety; grape tomato; midseason; bright red in color; crack resistant; 1½ inch fruits; fruit borne in long clusters; high yielding.

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Tomatoes can be produced on a variety of soil types and under different production systems. Tomato is a warm-season vegetable with optimal production temperatures between 70°F and 80°F.

Two major production systems utilized by growers include field and high tunnel production. In Iowa, high tunnel and field production start mid-April and mid-May, respectively. However, with the use of supplemental measures to mitigate frost damage, growers may plant prior to April in high tunnels.

In both production systems, variety selection is one of the critical decisions growers must make. Based on research conducted at Iowa State University and trials conducted in adjacent states, the tomato varieties listed have routinely produced well and are suggested for use in commercial production in Iowa.

Growers should select varieties based on adaptability under a wide range of environmental conditions, earliness, maturity needed to match the cropping season, market demand, consumer preference, yield potential, resistance to diseases, and physiological disorders (e.g., cracking, blossom-end rot, etc.). There are a number of tomato varieties available in the market, of which some have been popular among growers for many years while others get replaced by newer varieties after only a few seasons.

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Photo Credits

Burpee Seeds: Sun Gold and Supersweet 100

Hank Taber: Florida 91, Mountain Spring, Nico, and Red Defender

Harris Seeds: Red Deuce

Johnny's Seeds: Red Pearl

North Carolina State University: Mountain Belle

Peter Nitzsche, Rutgers Cooperative Extension, New Jersey Agricultural Experiment Station: Better Boy, BHN 589, Big Beef, Boxcar Willie, Celebrity, Cherokee Purple, Early Girl, Lemon Boy, Mortgage Lifter, Polbig, Primo Red, Solar Fire, Sun Leaper, and Sweet Hearts

Seminis Seeds: Florida 47R and Favorita (De Ruyter)

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