



# Cotton and Water Use

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Cotton fiber production is still an important crop in California. With over 280,000 acres planted in 2019, cotton is holding its own with an eight percent increase in acres over 2018. Many of the crops that took over acreage in the last few years are no longer as attractive price and market wise, making cotton a viable crop. There are plenty of reasons that cotton is still an important crop to grow in California's Central Valley.

1. Cotton infrastructure still remains – gins, warehouses and cotton brokerage houses are all still in place though their numbers are much smaller than in previous years.
  2. California growers have the “know how” to grow quality cotton. They still have the equipment and supply chains in place to market the crop.
  3. Cotton is a great rotational crop. Farmers in the Valley alternate crops for soil quality and pest control reasons and cotton works well into the rotation with crops like tomatoes, melons and winter grains.
  4. Growing cotton keeps farmers on the land producing crops instead of fallow ground, which can fall prey to weeds and development.
  5. World wide there is demand for quality cotton grown in California – pima (extra long staple) and acala. In 2019, the acres of Pima are about 240,000 and acres of acala/upland cotton are about 40,000.
  6. Climate conditions for cotton are very favorable in California – a long growing season with manageable pest populations.
  7. The U.S., and in particular California, have made significant contributions to developing more sustainable cotton production practices. It makes sense to produce quality fiber, sustainably grown.
  8. Cotton is not just fiber, but the cottonseed is valuable animal feed or is made into oil.
  9. Row crop growers in California (which includes cotton) are known to be some of the most efficient farmers in the world.
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## Cotton facts

Cotton production in California requires from 20 inches (deficit irrigation) to 38 inches of water for peak production. Compared with other crops – almonds 42-50 inches, grapes (wine and table) at 28-50 inches, corn at 22-24 inches and alfalfa hay at 40-60 inches. Please note that these are average numbers and would change with weather and location.

Due to California clean water regulations, most of the irrigated cotton water is recaptured and reused. Irrigation systems are extremely efficient, and there is much less percolation or water moving below the root system. Cotton is a fairly salt tolerant crop and can use water that is less desirable for other horticultural crops.

California cotton all is irrigated - mostly furrow, some sprinkler, small amount of drip (usually following higher end crop). 2/3 of water applied vaporizes, while the rest is absorbed or runs off and is reused.

Cotton production today is all about producing the most cotton with the least amount of water.

California cotton growers gain water use efficiencies by:

- Laser leveling fields for uniform distribution
- Using shortened irrigation runs
- Utilizing evapotranspiration models
- Implementing technological tools to measure plant and soil moisture like pressure chambers, tensiometers, and infrared thermometers
- Increasing use of drip irrigation – if used on their rotation crops, many leave it in the ground and grow cotton. However, the current price of drip systems has become cheaper making it even more attractive to cotton farmers without the use on rotation crops. It can improve water use efficiency increasing yields for the same amount of water. The drip system allows for water and fertilizer to go right to where the crop needs it without waste. The costs of implementation are around \$1,500 per acre, which can be high for a lower value crop like cotton.

Water use by crop:

CROP	WATER USE IN INCHES	ACRES IN CA (2018/19)
<b>Cotton</b>	20-38 inches	280,000
<b>Corn</b>	22-24 inches	420,000
<b>Grapes (wine and table)</b>	28-50 inches	863,000
<b>Almonds</b>	42-50 inches	1,090,000
<b>Alfalfa hay</b>	40-60 inches	670,000