



# Perspectives on Cotton

## Water & Cotton Production



The growing population will cause an increase in demand for drinking water, as well as for products made using water such as food and textile fiber. The efficient management of all water, including water used to irrigate crops, is essential for meeting the needs of future generations.

Irrigation aids land use efficiency by ensuring that the soil is as productive as possible, regardless of changing weather. Irrigation also contributes to higher and more consistent yields, which helps to manage supply chain expectations, reduce farmers' risks, and provide essential products.

Today, agriculture accounts for 70% of global water use.<sup>1</sup> Global cotton production makes up 3% of total agricultural water.<sup>2</sup> The low percentage is due in part to the fact that cotton is a naturally drought-tolerant plant, and because efficient water-management practices have been adopted by growers in developed cotton-producing countries such as the United States and Australia.





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Making Every Drop Count

## Cotton is a Drought-Tolerant Plant

The cotton plant is remarkably drought-tolerant because of its root structure and growth habit. As a cotton plant grows, its tap root extends deep beneath the soil line in search of water, while lateral roots maximize available moisture within the soil.

Because the cotton plant is able to produce flowers throughout its growing season, boll production can start or stop depending on water conditions.

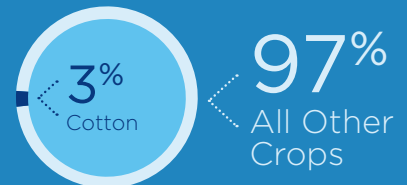
Cotton Root System Aids Water Use Efficiency



## Global Cotton Water Use

Approximately 70% of the world's water is used by agriculture to produce food and fiber for the global population; global cotton production accounts for 3% of this total.

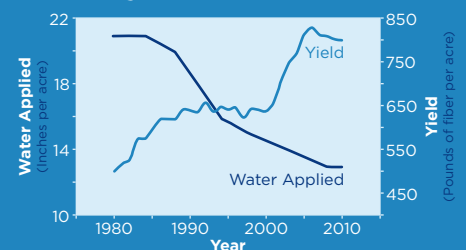
Cotton Accounts for 3% of Global Agricultural Water



## Using Less Water to Produce More Cotton Fiber

Compared to 20 years ago, U.S. cotton growers are using less irrigated water to produce more cotton fiber. In fact, over the past two decades, U.S. growers have improved the efficiency of irrigated water used by approximately 80%.<sup>4</sup>

Cotton Irrigation Relative to Yield<sup>3</sup>



## Maximizing Water Use Beyond Cotton Fiber

One-inch of rain water on an acre of cotton will yield 50 pounds of cotton fiber.<sup>5</sup> The same water will also produce 70 pounds<sup>6</sup> of cottonseed that can be processed into nutritious cottonseed oil for cooking and a supplement to dairy cattle feed.

Other byproducts of the cotton plant can also be used for purposes as varied as building materials and sprayable hydromulches that deter land erosion.

One Crop, Many Products



For more information and citations, please visit <http://cottontoday.cottoninc.com>.

# Citations

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- 1 70% of the world's water used for irrigation: [http://www.unwater.org/statistics\\_use.html](http://www.unwater.org/statistics_use.html)
- 2 Global cotton production makes up 3% of total agricultural water: Hoekstra, A.Y. and Chapagain, A.K. (2007) *Water footprints of nations: Water use by people as a function of their consumption pattern*, Water Resources Management. 21(1): 35-48.
- 3 Cotton Irrigation Relative to Yield Chart: Field to Market (2012 V2). *Environmental and Socioeconomic Indicators for Measuring Outcomes of On-Farm Agricultural Production in the United States: Second Report (Version 2)*, December 2012. [http://www.fieldtomarket.org/report/national-2/PNT\\_NatReport\\_A27.pdf](http://www.fieldtomarket.org/report/national-2/PNT_NatReport_A27.pdf)
- 4 U.S. growers have improved the efficiency of irrigated water used by approximately 80%: *Field to Market, Environmental and Socioeconomic Indicators Report*, 2012. [http://www.fieldtomarket.org/report/national-2/PNT\\_NatReport\\_Cotton.pdf](http://www.fieldtomarket.org/report/national-2/PNT_NatReport_Cotton.pdf)
- 5 Zwart, S.J., and W.G.M. Bastiaanssen. 2004. *Review of measured crop water productivity values for irrigated wheat, rice, cotton and maize*. Agricultural Water Management 69:115-133.
- 6 USDA, National Agricultural Statistics Service – Quick Stats – <http://quickstats.nass.usda.gov/>. Based on U.S. average cottonseed to fiber ratio averaged from 2008 to 2012.