

Water & Cotton Production

Global Water Usage

As the population continues to soar, worldwide water conservation and management in agriculture has become increasingly important.

Agriculture accounts for 72% of global water usage, cotton is only responsible for 2% of that^{1,2}



Agriculture

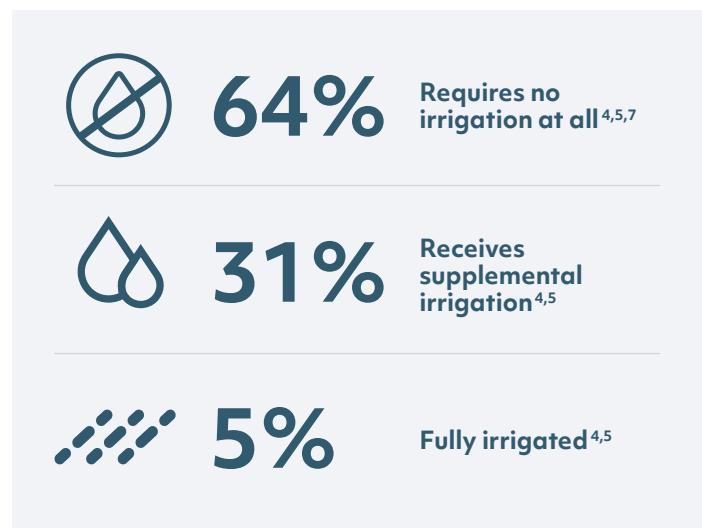


Cotton

In fact, cotton's natural drought tolerance, minimal irrigation needs and ability to thrive in arid climates make it one of the most versatile crops on the planet. And over the next 10 years, improvements in irrigation technology and new cotton varieties will likely result in further decreases in cotton's water demand.

Make Every Drop Count

Cotton is drought tolerant, requiring little to no extra water other than natural rainfall in most regions of the world.^{3,4,5,7} When it comes to irrigation water needs in cotton production, in the U.S. it breaks down like this:



Irrigation, where required, is critical. In India, irrigation can provide a 400% increase in overall yield⁶, which makes precise usage crucial. Advanced technologies such as moisture sensors, weather modeling, and low-energy precision application (LEPA) irrigation are helping to achieve water reduction targets.

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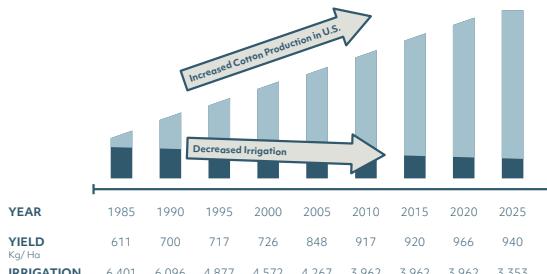
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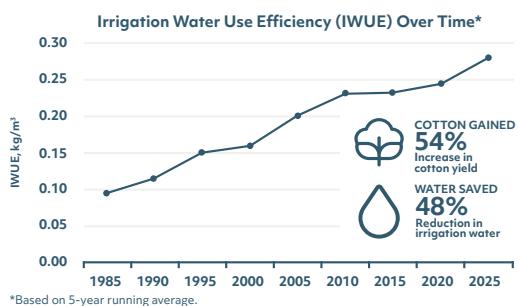
Water Usage Improvement

Over the past 40 years, U.S. cotton has used less irrigation water while increasing yields, driven by advances in irrigation, crop genetics, and modeling tools—showing strong potential for continued improvements in water productivity.⁷



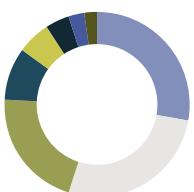
Source: U.S. cotton yield trend based on 5-year averages since 1980 from USDA QuickStats. Irrigation volumes based on data reported in the USDA Farm and Ranch Irrigation Survey for the year listed.^{9,10}

Since 1985, U.S. cotton growers have produced over 50% more cotton using nearly 50% less irrigation water per hectare – a 3x increase in irrigation water use efficiency.^{5,8}



Cotton Water Facts

- While 44% of cotton fields worldwide and 36% in the U.S. are irrigated, cotton accounts for only 4% of the global irrigated area.^{1,2,7}



Globally Irrigated Area by Crop in 2021	
Rice 28%	Vegetables 6%
Other crops 27%	Cotton 4%
Wheat 21%	Sugarcane 3%
Corn 9%	Soybean 2%

Source: [AQUASTAT 2022](#)

For more information about water usage in cotton, visit cottontoday.cottoninc.com

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- The water consumption of cotton production in the agricultural phase is less than 1% of the global average of a person's total water footprint.^{9,11,12,13}
- Nearly all of the water applied to the plant is evaporated and returns to other fields as rainfall. This is part of the earth's natural water cycle.⁹ Since rainfall is beyond human control and cannot be managed like irrigation, focusing on rainwater use can be misleading.² Effective water stewardship should prioritize improving irrigation efficiency through science-based practices.
- Soil health practices like cover crops and crop rotations can benefit both conventional and organic cotton by increasing soil organic matter and water holding capacity.¹⁴ Implementing these best management practices is essential for improving water use efficiency in any agricultural system.
- Cotton's inherent drought tolerance allows it to grow in diverse climates,^{3,7,9} even where other crops cannot, making it a vital global source of food and fiber.¹⁵
- 177 gallons of water consumption are required to make one t-shirt (225g), which includes growing the cotton, manufacturing the t-shirt, and consumer use.⁹
- Only 98 gallons of irrigation water are needed to grow enough U.S. cotton for a standard t-shirt (225g) — roughly the amount of water needed to fill one and a half bathtubs.^{9,10}



Source: Irrigation water use was calculated based on [2023 NRS data](#); a full bathtub can require up to [70 gallons of water](#). The estimate reflects the U.S. acreage-weighted, field-average irrigation water consumed for cotton lint, scaled by process losses from fiber through knitting, dyeing/finishing, cutting, and sewing, with no manufacturing loss (PEFCR). It assumes a finished garment mass of 225g.

 cotton today

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