

TAKEAWAYS



Increasing the Water Use Efficiency of Irrigated and Dryland Cotton with Cover Crops

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- Cotton Inc. sponsored a project to examine the use of cover crops to increase infiltration and soil water-holding capacity. Strips of wheat cover crops and fallow plots were placed on an irrigated, eroded hillside, and soil moisture sensors were inserted for monitoring.
- Observations:
 - Incorporating a wheat cover crop increased the volumetric water content throughout the growing season by 6–8%.
 - In the plots of wheat cover crops, sensors registered light-rainfall events, indicating that the water remained in profile. Sensors in the fallow plots did not register these events.
 - A 111-pound increase in yield per acre was reported for the cover crop plots.
 - The same results have been observed in production systems using cover crops versus no-till.
- Integrating a cover crop is arguably the easiest way to increase water use efficiency in dryland and irrigated production.
 - Dryland production: Increased infiltration and water-holding capacity in year 1.
 - Irrigated production: Reduced time in which the soil stays saturated after irrigation events, and an increase in the quantity of water that can be applied per turn.
 - Species selection: Select species that will persist for longer periods throughout the season, such as heavy monocot mixtures.
- Conclusions:
 - Cotton agronomics:
 - The water demands of a developing cotton crop are rarely met completely by the environment.
 - Cotton is an indeterminate, drought-tolerant plant that does not perform well under saturated soil conditions.
 - Cover crop integration:
 - Supports increased infiltration and water-holding capacity in year 1.
 - Allows less frequent, more thorough irrigation events.