# Effects of drought stress on water use efficiency and leaf temparature of two cotton genotypes

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GLOBAL WARMING

INCREASING WATER USE

INCREASING FOOD DEMAND

## DROUGHT IMPACTS

GLOBAL WARMING

INCREASING WATER USE

INCREASING FOOD DEMAND

# DROUGHT IMPACTS

Drought effects in

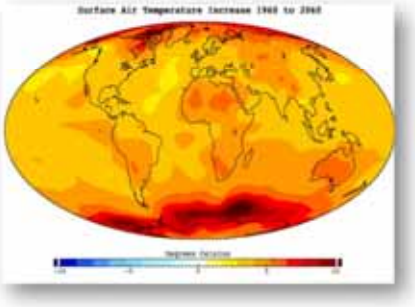
2003

2005

2007

2008

2010



Cotton is widely grown in arid and semiarid regions

Reduction in yield and quality

Drought and water use efficiency

## Responses of cotton to water scarcity

- Stomatal limitation
- Lower Photosynthetic activity
- Decrease in leaf area
- Slow plant development
- Early growth cycles
- Formation of small balls
- Yield losses

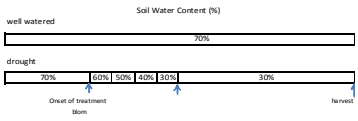
## Water Use Efficiency of Cotton

WUE = Dry matter / Water Use

Agronomic techniques

Genetic Improvment

## Material and Methods




**Treatments:**

**Genotypes**

Chirpan-423 (*G.hirsutum*)

Amphidiploid (Chirpan-423 x *G. Sturtii*)

**Watering**

Control (Well watered)

Drought

## Material and Methods

Dry matter partitioning

Transpiration

Water Use Efficiency

Leaf Temperature

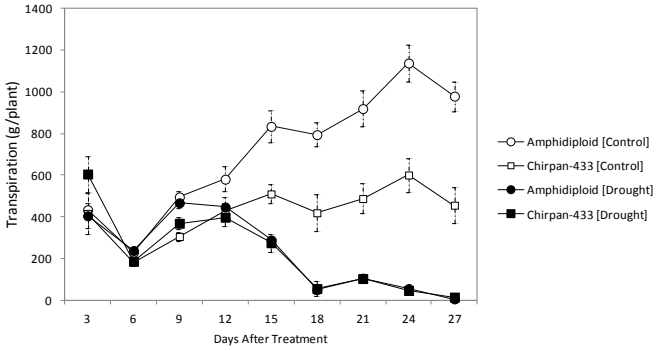
Proline

Enzyme activities (SOD, CAT, POX)

Chlorophyll content

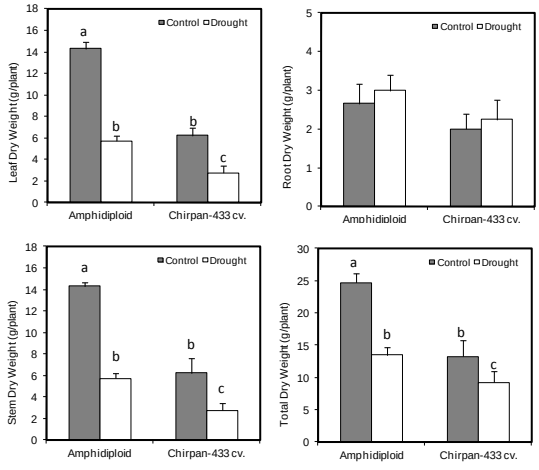
# Results

## Transpiration



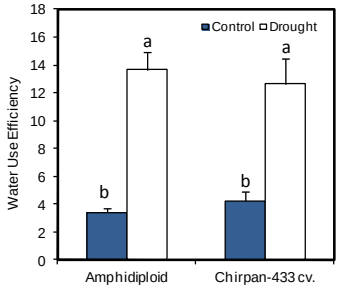

# Results

## Dry matter partitioning



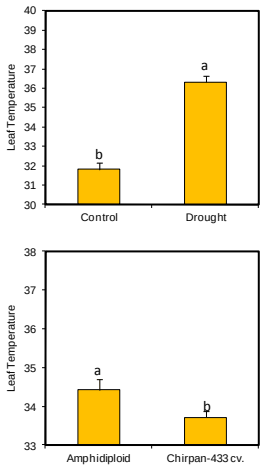
## Results

### Water Use Efficiency




## Results

### Leaf Temparature



Thank you for your attention