

# Cover Crops and Soil Health

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Cotton  
Incorporated



Cooperative Extension Service







# Why do we Grow Cotton on Beds?

To get water off the field

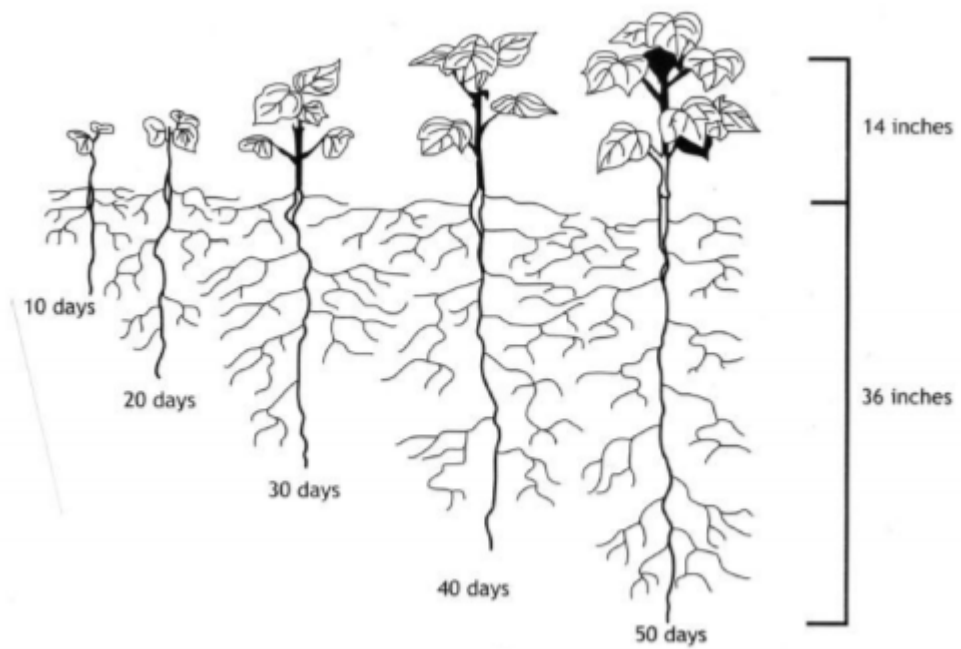


To get water on the field



Cotton does not tolerate saturated conditions









unlock the  
SECRETS  
IN THE SOIL

SOIL HEALTH

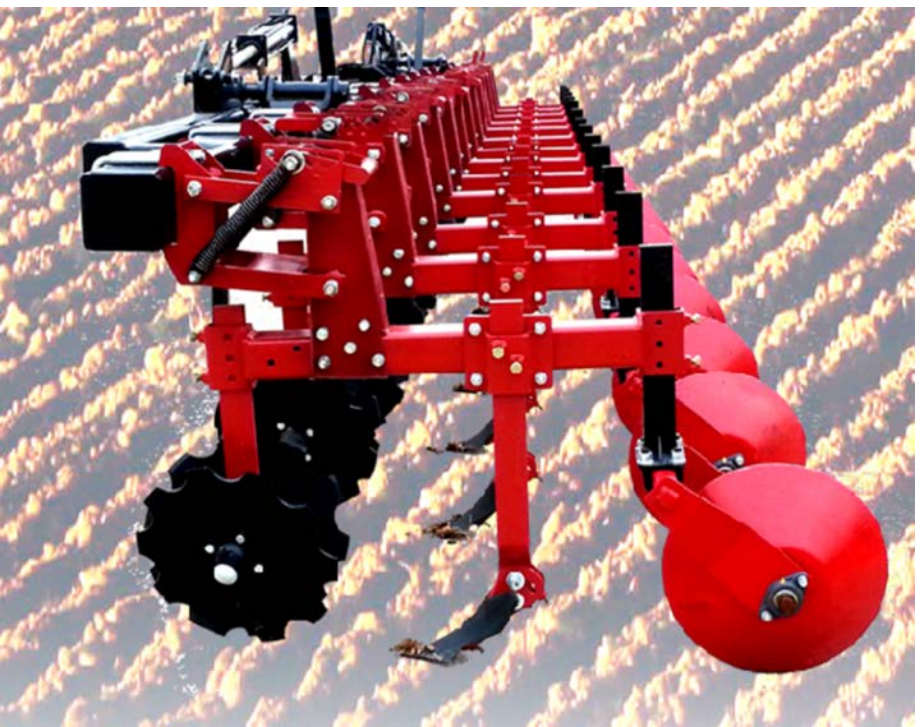




# Tillage Systems and Pests



- Conventional tillage
  - Highest thrips numbers
  - Weed management
- Reduced tillage
  - Lower thrips numbers in reduced tillage plots





# Almost No-till Cotton





Almost No-till  
With cover crop

The only tillage operation

Stale Seedbed  
No cover crop

One of several tillage operations



Almost No-till

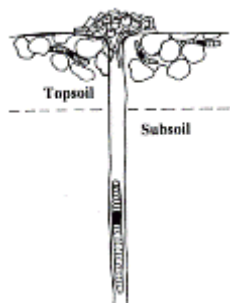
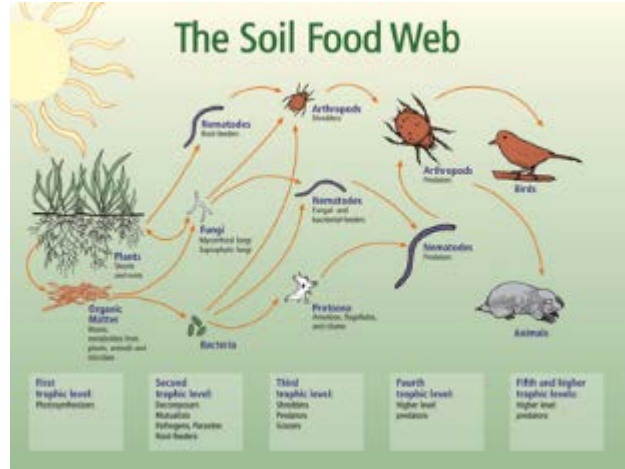
Slight water furrows  
Residue exposed



Stale Seedbed

Water furrows for irrigation

Jill Clapperton, Ph.D.  
 Eastern Washington  
 Rhizoterra Inc.



Earthworm middens

**38% MORE**

**EARTHWORMS WITH CEREAL RYE COVER CROP**



# Soil Health Indicators



What does your underwear  
say about your soils?

Blake Vince  
Ontario Canada

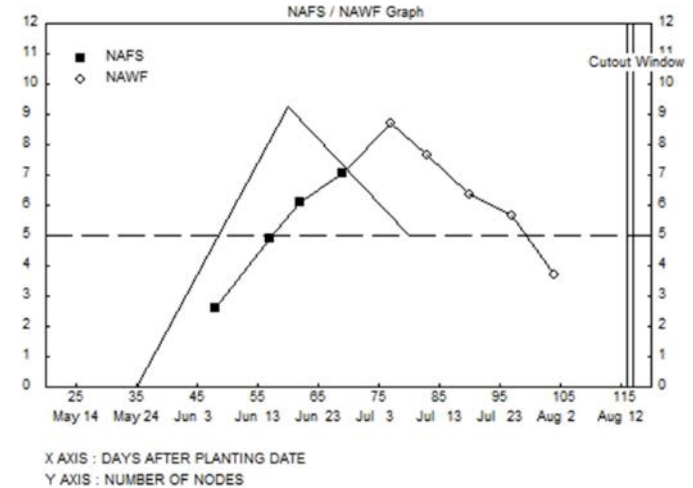
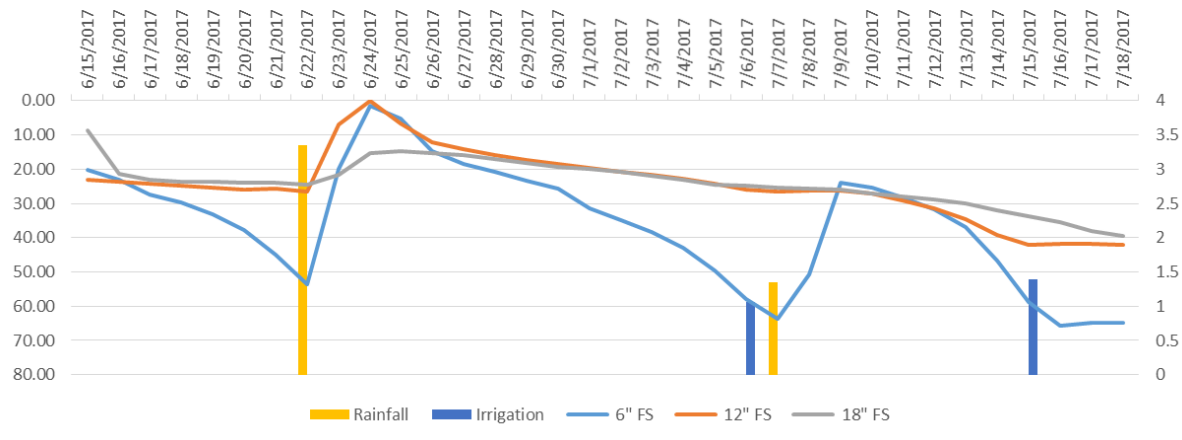


No-till with  
cover crop

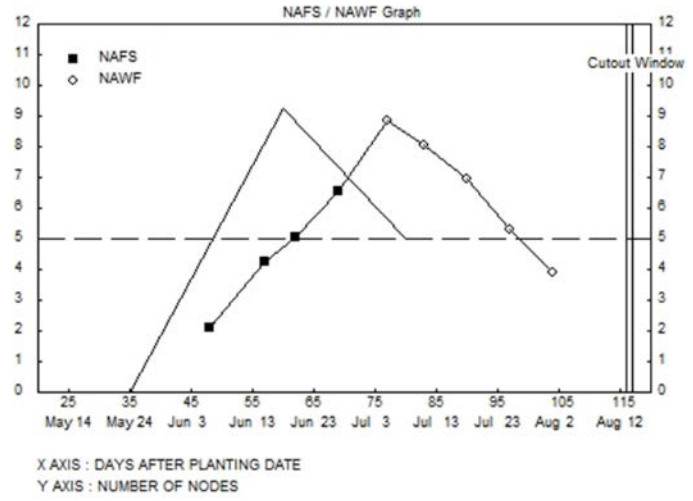
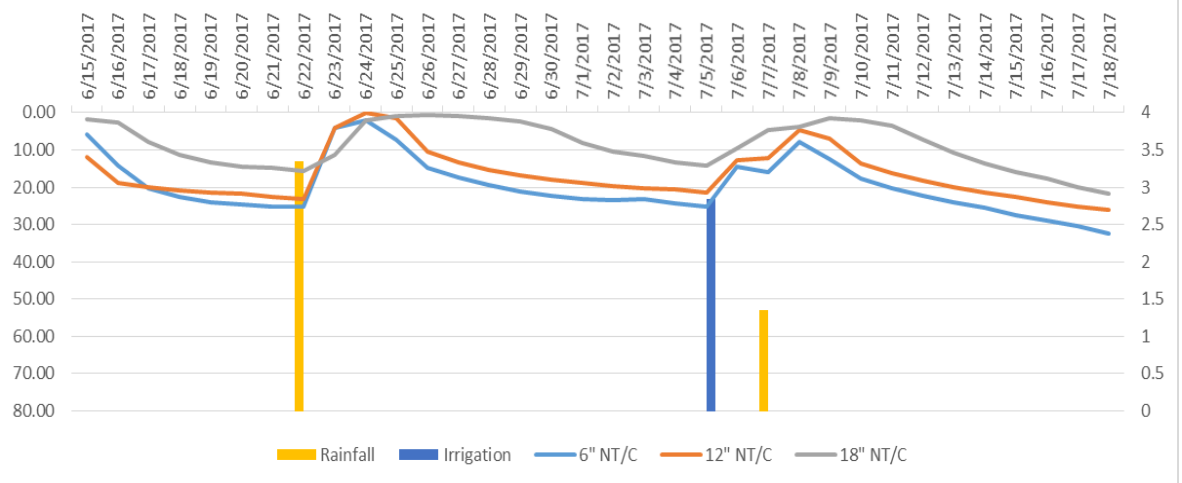
Till with  
no cover crop



2017 Shop FS Soil Moisture Sensors



2017 Shop No-till Soil Moisture Sensors



# A Healthy Soil

- Has increased internal drainage due to improved soil structure and biological activity
- Requires less emphasis on external drainage for crop health as internal drainage improves
- Reducing tillage and employing the use of cover crops greatly enhances health of the soil
- Assess soil health: biological, chemical, and physical analysis

# Cover Crop Summary

- Irrigation water flow rates down the row slower in No-till / Cover
- Soil Compaction was consistently lower in No-till / Cover
- Soil Moisture was consistently higher in No-till / Cover.

# Cover Crop Economic Summary

- Cost/A averages same or less for No-till with Cover Crop
- Cost/lb Lint averages less for No-till with Cover Crop
- Cotton lint was produced \$0.06 per pound cheaper for no-till/cover compared to farmer standard till/no-cover in the two-year study

