Conservation Tillage and Plant Biotechnology: How New Technologies Can Improve the Environment by Reducing the Need to Plow

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- Established in 1982 as a nonprofit group to encourage adoption of conservation farming practices
- Serves more than 100 partners, including government organizations, academic institutions, and corporate entities
- Surveyed U.S. tillage trends for more than 20 years

Scope and Methodology

- First comprehensive study to document link between biotechnology and environmental benefits of conservation tillage
- Reviewed data on from leading agricultural states, primarily focused on soybeans and cotton
- Compiled surveys from government, academic, commodity and corporate entities
- Study reviewed by five experts from the U.S. Department of Agriculture and the American Soybean Association
- Included citations to 75 studies and reports

Building a Sustainable Agriculture

- No-till farming incorporated in both large and small farms whether using mechanical, animal or human power
- New technologies offer solutions to feeding growing global population, while protecting precious environmental resources

Overview

- Strong association between biotech crops and adoption of no-till
- Weed control driving force behind the trend
- Biotech crops offer confidence in weed control in no-till systems
- Biotech crops key factor in intensifying environmental benefits of conservation tillage

Biotech Makes the Difference

Biotech Fueling Increase in No-till

35 percent increase
in no-till acres since
biotech introduction
in 1996 to
55 million acres

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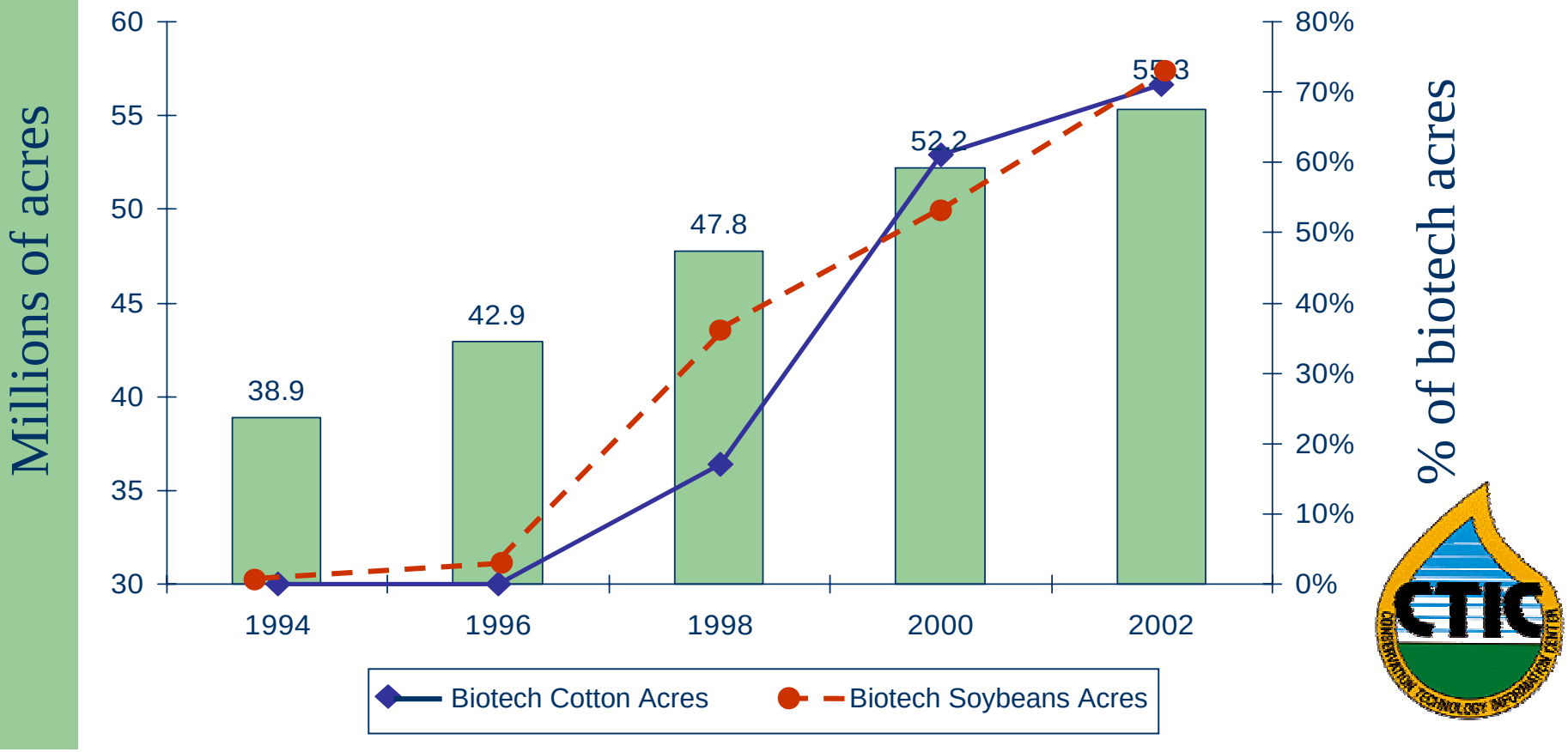
Equivalent land mass of
Illinois and Indiana

Biotech Fueling Increase in No-till

- Nearly all growth in no-till in crops with herbicide-tolerant technology
  - 75% of no-till soybean acres are biotech (2000)
  - 86% of no-till cotton acres are biotech (2000)

Biotech Fueling Increase in No-till



Room for Growth

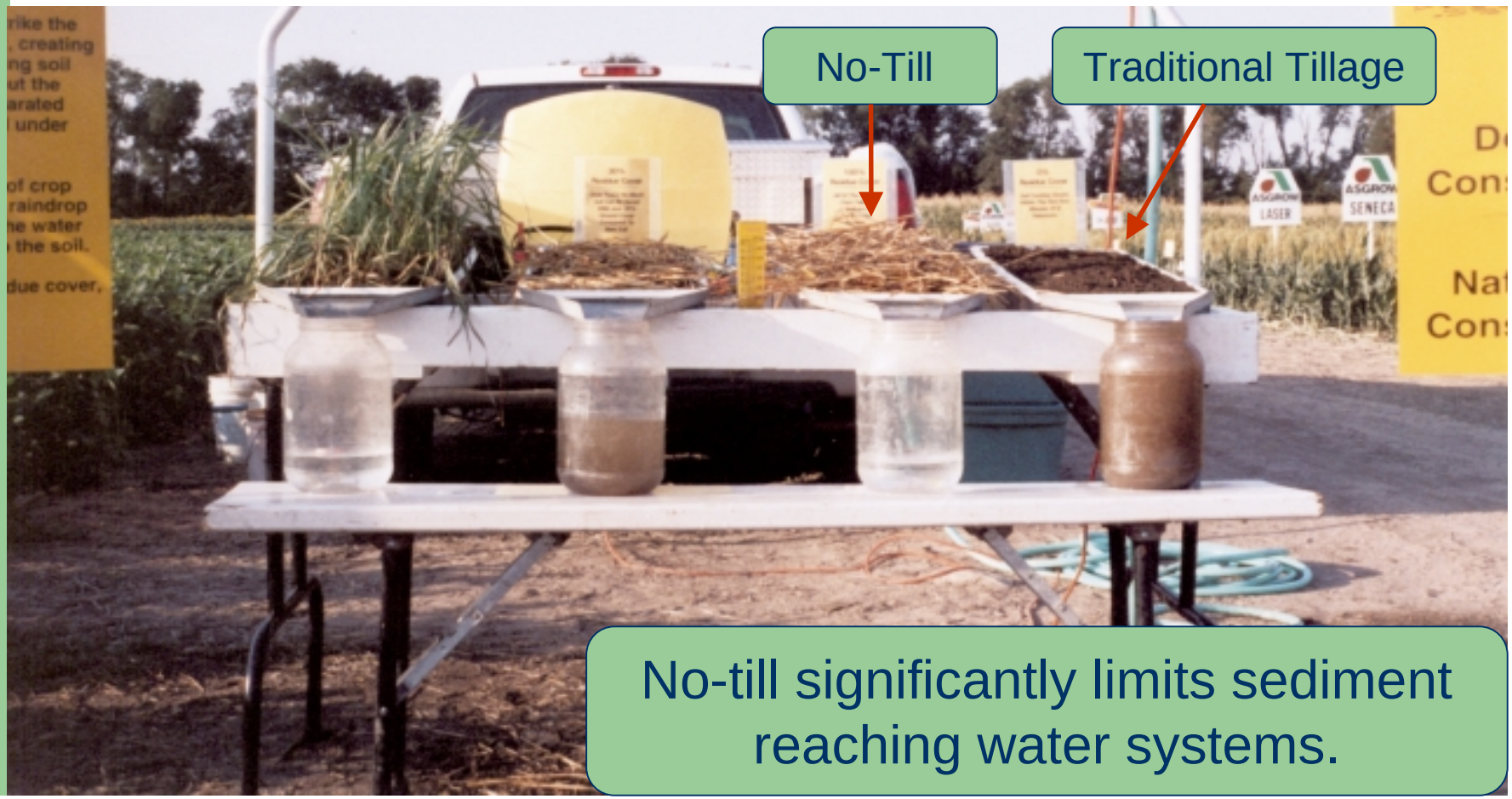
- Continued adoption of biotech crops creates opportunity to increase no-till acreage
  - For example, in corn, soybeans and cotton there are more than 100 million acres that could utilize no-till practices

Biotech Crops Key in Gaining Significant Environmental Benefits from Conservation Tillage

Improved Water Quality

- Reduces soil erosion by 1 billion tons per year due to conservation tillage and conservation reserve program — improvement of 30% since 1982
- Soil erosion is reduced by 90% with no-till compared to traditional practices
- Saves $3.5 billion in water treatment and storage, waterway maintenance, navigation, fishing, flooding and lost recreation costs

Improved Water Quality



Improved Air Quality

Farmers saving 306 million gallons of fuel annually

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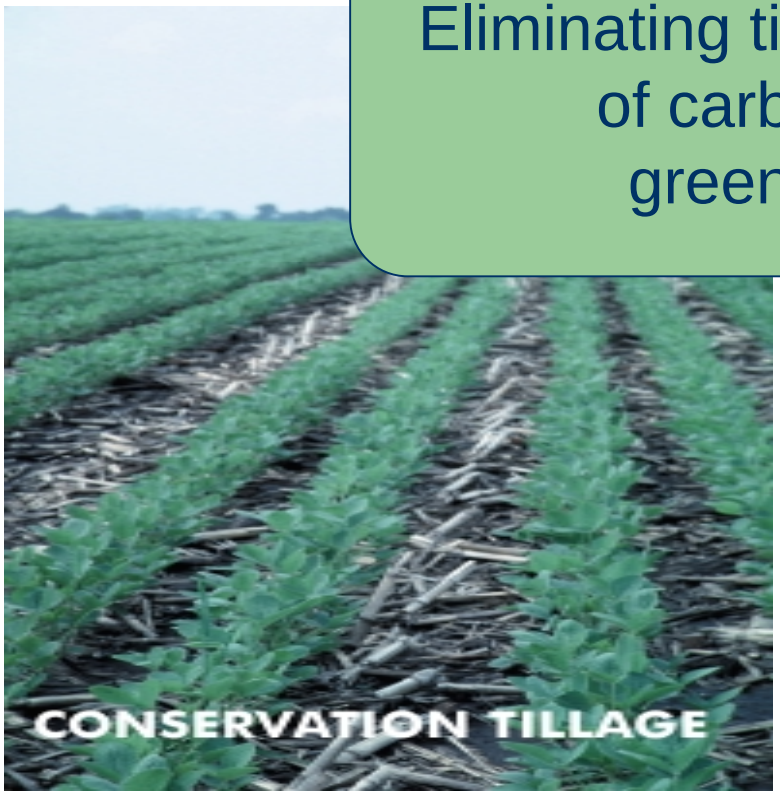
The equivalent of more than 23,000 tanker trucks

Improved Air Quality

Eliminating tillage holds 590 pounds/acre of carbon in the soil – limiting greenhouse gas emissions



Improved Wildlife Habitat

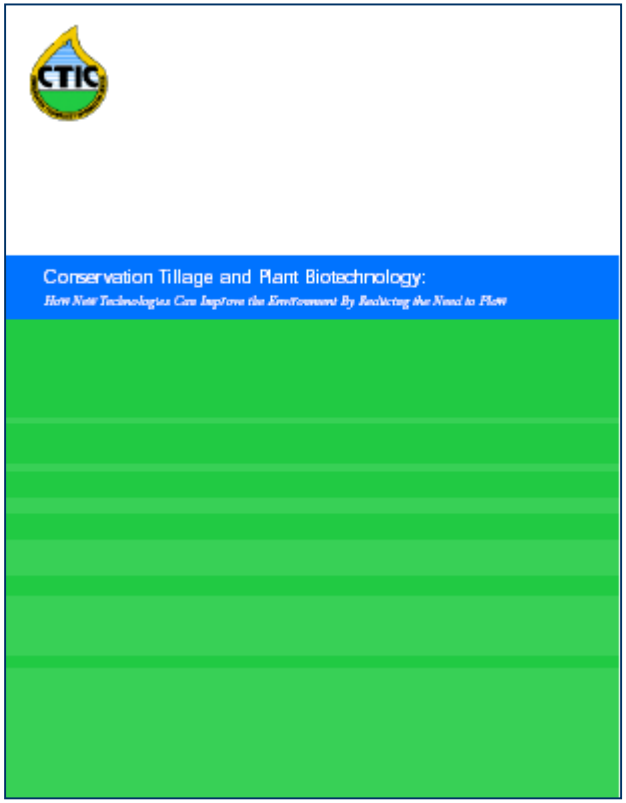
- No-till fields provide better food and habitat for birds and mammals
- Quail can find daily food in one-fifth time in no-till field
  - 4 hours vs. 22 hours in plowed field

- Earthworm populations 3 to 6 times higher in no-till field

Conclusions

- Benefits of no-till to the environment have been documented
- Biotech crops, particularly herbicide-tolerant crops, have led to an increase in no-till
- As more and more acres are converted, significantly more environmental benefits will be derived

For More Information ...



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