

# Responsible Cotton Production

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U.S. Cotton Producer

## Bremen Cotton Conference

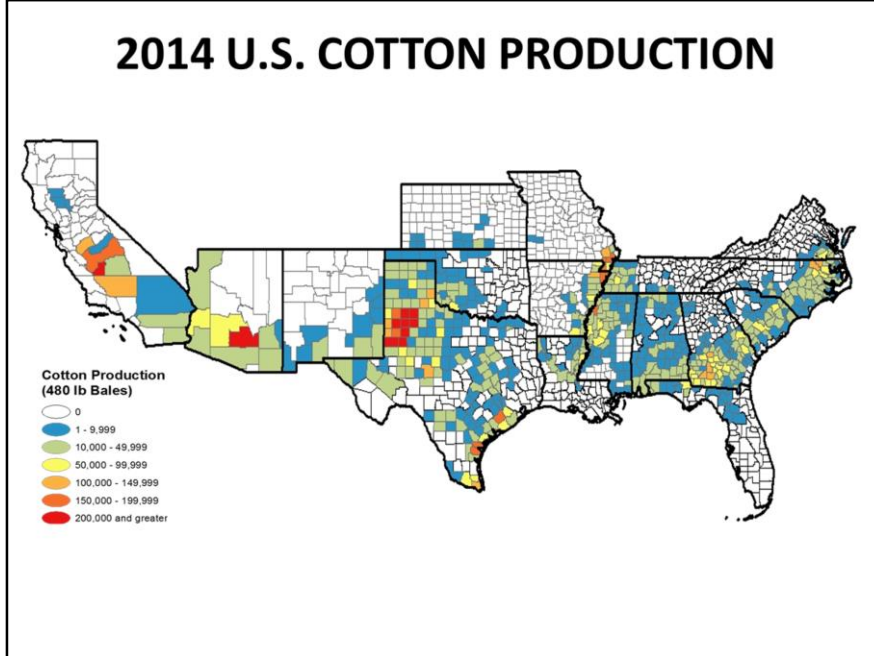
March 16, 2016  
Bremen, Germany

I appreciate the opportunity to address this Bremen Cotton Conference. For years I have heard of the importance of this biannual meeting, and I am delighted to have a chance to participate and speak to you a bit about the cotton industry from the perspective of a US cotton growers.

I would like to share with you what we do on our farm to ensure responsible production and our process to achieve continuous improvement.

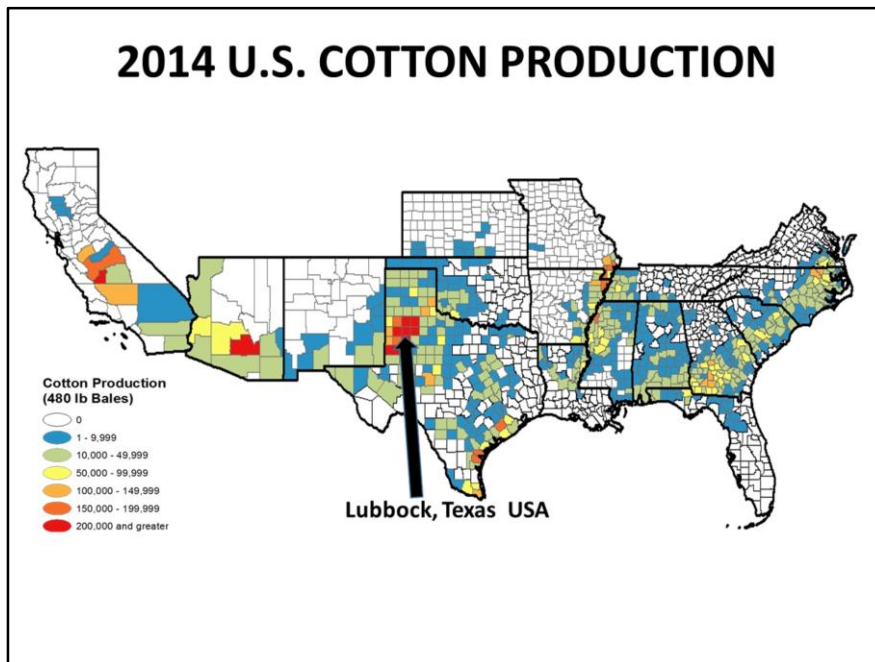
I also want to bring to attention some of my concerns about the future of this industry. Now some information about my farming operation.

## 2014 U.S. COTTON PRODUCTION



- This slide illustrates where cotton is grown in the United States.
- Production at a county level is indicated on the legend with darker colors indicating counties with larger production.
- You can see four highly concentrated areas in red on this map .

## 2014 U.S. COTTON PRODUCTION



- My family farms outside of Lubbock Texas.
- The lack of rainfall and a short growing season are our most yield limiting factors. Despite these issues, Lubbock is the center of one of these concentrated production regions.
- Lubbock is also the center of the largest contiguous cotton growing region in the world.
- Cotton is the basis for our local economies and it is critical that we are dedicated to environmental and social stewardship.



- This is my immediate family.
- Interestingly enough, my great, great grandparents on my father's side emigrated from Hamburg, Germany in 1916 and settled in Lynn County
- My grandfather would be amazed by the harvester that my wife, sons, and I are posing beside in this slide. My grandfather came to this region in 1936 and homesteaded 160 acres.
- He was the first person to document ownership and to farm that 160 acres of land. My father built upon what his dad had built and retired from farming in 2004.
- We have continued to expand and my dad still helps with our farm. My oldest son farms on his own and my younger son, wife and I farm a total of 6500 acres.
- This is much larger than the 1300 my grandfather was farming when he passed, but it represents the changes in production agriculture and the scale producers must obtain to remain profitable with a modest income.



- We live on the farm. We drink the water from beneath the soil.
- We grow a garden that helps put food on our table.



Kids play in the fields. This was my grandfather's home and I fully expect my grandchildren and their children to call this home.

So what are we doing to help ensure the sustainability of our farming operation?





- Number 1, we must be good stewards of the water and soil.
- I like to rotate corn and grain sorghum with cotton. Both are high residue crops that have many benefits in a cotton rotation.
- The residue helps reduce soil erosion, adds organic matter to the soil, and improves soil structure. This helps increase the amount of water that can be stored in the soil profile and not runoff the field surface taking nutrients and soil along with it. We have made tremendous gains in reducing soil erosion. Improvements in conservation tillage equipment and tillage practices differ great greatly from what my dad and grandfather practiced.
- We work closely with the US Department of Agriculture's Natural Resource Conservation Service (or NRCS) to ensure we are making the best decisions with regard to soil and water management.



- We collect soil samples and base our fertilizer application rates on the results.
- Our fertility program is built around the use of composted gin waste and cattle manure. Our close proximity to the facility that blends and processes this material makes this a great choice for us.
- This product meets our phosphorous and potassium needs.
- We supplement this with additional nitrogen striving to meet the 4Rs (right source, right rate, right time, and right place) in an effort to achieve greater fertility efficiency.





- Our 100 year average yearly rainfall is just below 19 inches.
- During the last four years we have experienced wide swings in rainfall. 2010 was one of our wettest years  
while 2011 was one of the driest. We are still trying to recover from 2011.
- Almost 40% of the land we farm is dryland or rainfed. Cotton is the most profitable and often the only crop that will yield in our environment without irrigation.
- Irrigation is a risk management tool that allows me to reduce yield variability from year to year and to introduce other crops into the rotation.
- Our rainfed cotton will produce anywhere from 0 to 1,000 lbs lint/A. We generally produce 375 lbs lint/A on our dryland or rainfed cotton. Our irrigated yield goal is 1,000 to 1,250 lbs lint/A.
- When Mother Nature cooperates, our irrigated yields can be as high as 1,500 to 2,000 lbs lint/A.
- We try to start the season with 80% to 100% plant available moisture and use moisture probes to schedule irrigation. As you can see on this slide water is limited.
- Timing is critical to the success of this program.
- Improvements in our timing and rate of irrigation water applied to our crop has helped us to produce much more lint while using only a fraction of the water that

was used when we first started irrigating crops in our region.



- Our integrated pest management (IPM) program places a great deal of importance on host plant resistance for disease and nematode protection.
- Selecting the varieties of cotton plants with the best pest management packages for our particular situation together with the fiber yield and quality parameters the industry demands is one of our most important and difficult decision of the year. A poor decision in variety selection is one that stays with you the entire season.
- We monitor insect pests and manage beneficial insects to reduce the need for chemical control.
- Weed resistance management utilizes a number of cultural practices used in conjunction with chemical control tactics to help us manage our weed seedbank and reduce the impact of weed competition on yield and quality.



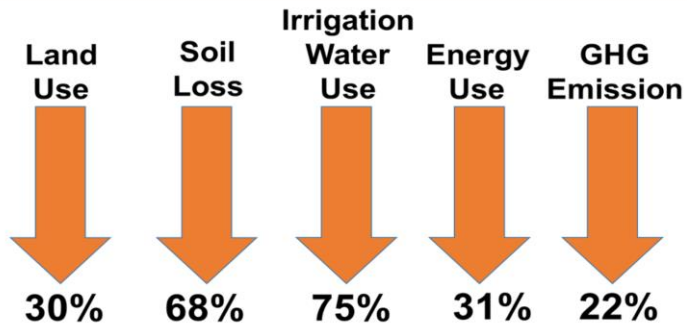
- You might ask, how are we producing more with less?
- USDA and University research coupled with Land Grant University Cooperative Extension Service, which by the way are funded in part with our industry's producer checkoff program, play a tremendous role in identifying research priorities and transferring research findings to the producer.
- Extension provides training, educational materials such as these shown on the slide, and field demonstrations.
- These are all things that I use to help improve variety selection and pest management decisions, and preserve the yield and quality of cotton which in turn helps make me profitable.
- It would be foolish of me to pretend that I am the perfect farmer. While my practices do not differ greatly from my neighbors, every person and field is different.
- We must manage to optimize strengths and minimize weakness of our management styles and the productivity of the land. I like to think that I make the best decisions possible and learn from mistakes.

## U.S. Regulatory Environment

- **Protects me**
- **Protects my family and workers**
- **Ensures the safety of our products**
- **Protects the environment**

This constant striving to improve cotton productivity while reducing impact on the environment is why the US partnered with Australia to create the CottonLEADS program – to continue progress at the national level toward responsibly produced cotton.

## Cotton: 30 Years of Improved Environmental Performance (1980-2011)



Field to Market: The Alliance for Sustainable Agriculture Dec. 2012  
[http://www.fieldtomarket.org/report/national-2/PNT\\_NatReport\\_A27.pdf](http://www.fieldtomarket.org/report/national-2/PNT_NatReport_A27.pdf)



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As we move our discussion to cotton, this slide shows U.S. cotton's improvement over the last 30 years.

The numbers represent the decrease in the amount of land, soil that is lost, irrigation water and energy used, and greenhouse gas emitted to produce one pound of cotton in 2011 compared to 30 years earlier.



# Field to Market Cotton Results

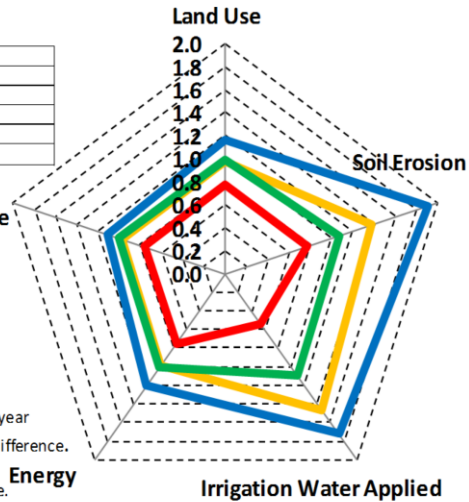
Index of Per Pound Resource Impacts to Produce Cotton Lint  
(United States, Year 2000 = 1)

Year	2000 *	Unit - per Pound
Land Use	0.001	Planted Acres
Soil Erosion	0.020	Tons
Irrigation Water Applied	0.046	Acre Inches
Energy	9,980	Btu
Greenhouse Gases	2.6	Pounds CO <sub>2</sub> e

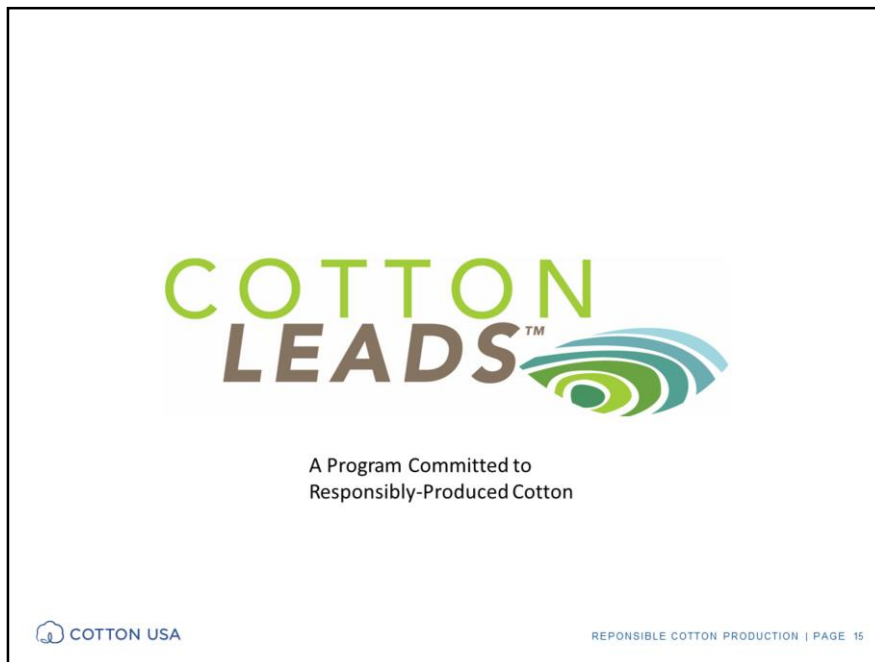
\* Five-year average 1996 - 2000

- 5 Yr. Avg. 1980 - 84
- 5 Yr. Avg. 1987 - 91
- 5 Yr. Avg. 1997 - 01
- 5 Yr. Avg. 2007 - 11

**Note:** Data are presented in index form, where the year 2000 = 1 and a 0.1 point change is equal to a 10% difference. Index values allow for comparison of change across multiple dimensions with differing units of measure.



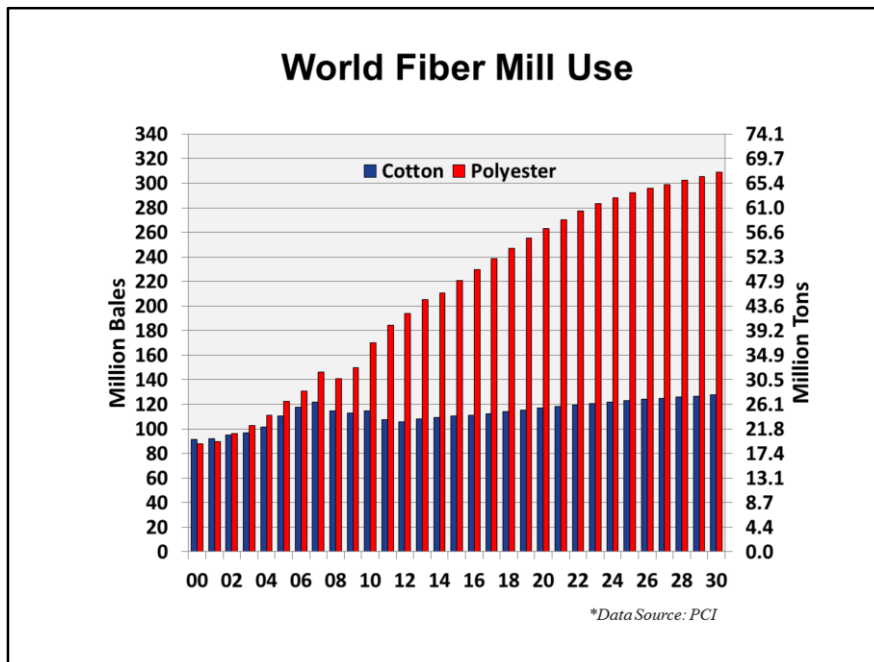
This slide graphically shows the dramatic improvement in environmental metrics for US cotton since 1980. Per unit of cotton produced, each of these measurements are at 30 year lows.



This constant striving to improve cotton productivity while reducing impact on the environment is why the US partnered with Australia to create the CottonLEADS program – to continue progress at the national level toward responsibly produced cotton.



These are the 5 core principles of the CottonLEADS program, commitment, recognition, understand, belief and confidence. We are committed to the social, environmental and economic sustainability of producing cotton. We recognize that responsible cotton production is a continual process of improvement and information sharing. We have a strong understanding of what it takes to educate, regulate and implement responsible cotton production on a national level. We believe in the benefit of working with others and improving the processes and environmental safeguards among all cotton producers, even outside of the current Cotton LEADS partner countries. Finally, we have confidence that our cotton is grown responsibly and that the regulatory and testing systems we have in place help our industry produce the cleanest and highest quality cotton in the world.

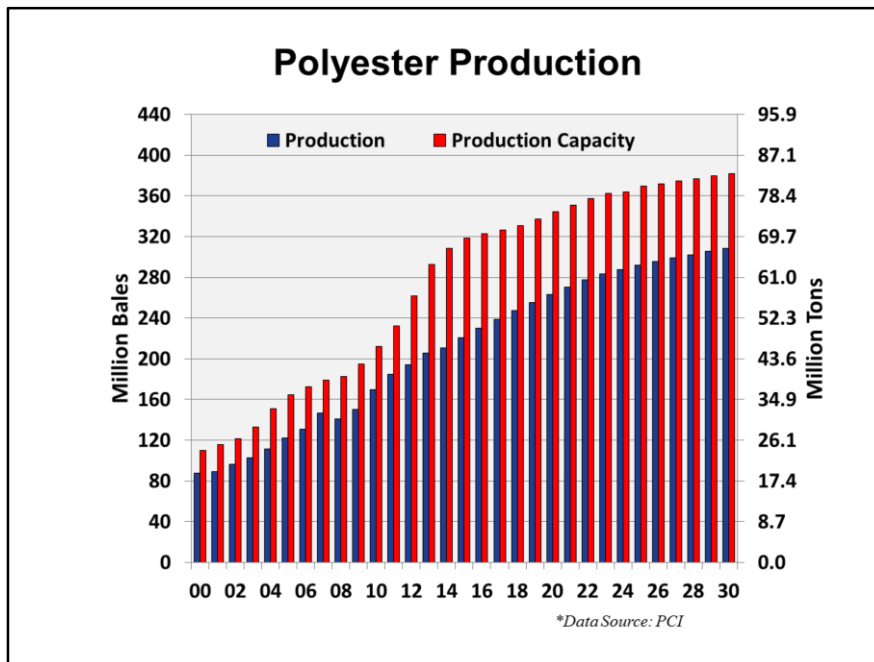


I do want to deviate here for a moment and focus on an enormous factor that is affecting the economics of cotton on my farm and for the entire cotton economy of everyone around the globe – that is fiber competition from synthetic fibers.

Here we see a graph cotton and synthetic fibers mill use since 2000. For awhile cotton was holding its own and was benefitting from overall increases in global fiber demand along with synthetics.

But, as you can see, in recent years we have not only not benefitted, cotton use actually dropped back, and all the growth has gone to synthetics. This fact and large global stocks of cotton, particularly in China, has put heavy downward pressures on prices that make it hard for cotton farmers in Africa, India, Australia and myself to make a living from cotton, and that extends to the remainder of the cotton supply chain – gins, marketers, mills and on down the supply chain.

The good news is that the future for fiber demand looks good. The bad news is we are not getting any of it.



And what is really scary is that the overcapacity in synthetic fibers is projected to further increase looking forward. This overcapacity, coupled with ultra cheap petroleum prices, should be of concern to everyone here at this meeting who is trying to make a living from cotton.

We need to find new and better ways to produce, process, market and promote our product if we expect to have meetings like this one in Bremen 10 or 20 years from now.



Let me return to my farming operation.

I'm a fourth generation farmer. My sons are also farming.

I want to see a bright future for them, and I hope that will continue to be in farming and producing this great natural product of ours called "cotton".

As an introduction to my operation, I'd like to show you a brief video. A close-friend of mine, who also happens to be a John Deere dealer, offered to make a fly-over video of my farm with some specialized equipment and I jumped at the chance. So, without further ado, I'd like to welcome you all to DK & J Farms...

(VIDEO WILL PLAY ON THE OPENING OF NEXT SLIDE)



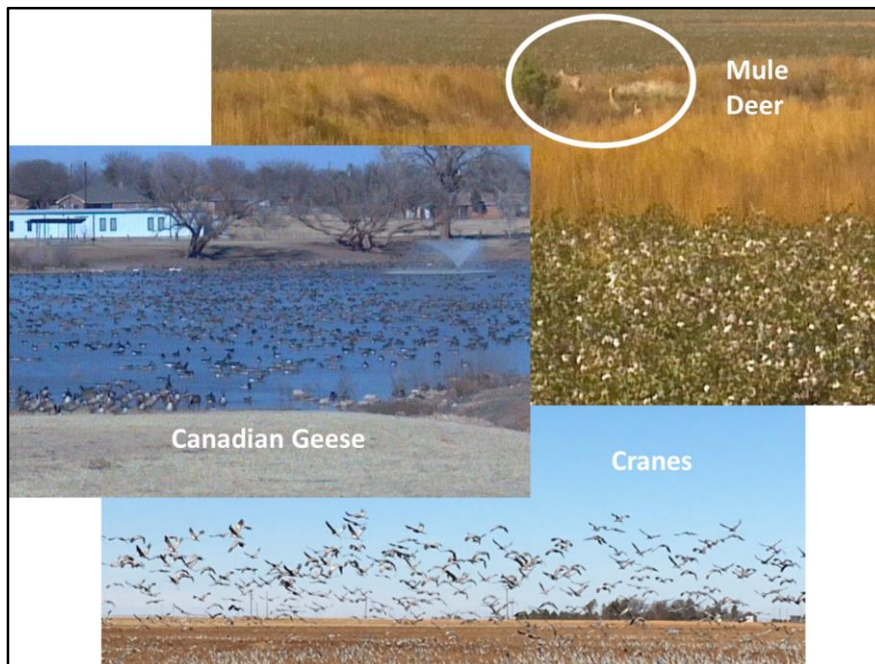




- Farming is a business. Businesses continually strive to improve efficiency, because those that don't lose ground to the competition who do.
- When you step back and look at the big picture of cotton farming in the US, improving our level of efficiency has reduced our environmental footprint helping to make us more sustainable both economically and environmentally.
- I am currently the Chairman of Cotton Council International, and am the Vice Chairman of Cotton Incorporated
- So I am privileged to see a number of factors affecting my business in the US and by visiting with industry segments around the world.



- At my farm we have multiple generations of families that work for us. We think of our workers as family.
- I'm going to do all I can to make sure this farm, my family and my community are in better shape when I'm gone than when I started farming.
- This is one of the primary reasons that I haven't moved to some of the more modern, labor-saving technologies available today. I have great people who work for me who also depend on our labor together to support their families. Growing cotton helps me create good jobs for good people in my community, and I take a great deal of pride in being able to say this and provide this opportunity.
- This is what farming and family is all about whether you are a grower in the US, Africa, Brazil, Australia, India or China.



- A final comment on the importance of responsible production and the environment.
- The increased number of wildlife such as mule deer and Canadian geese in our area are signs that we are doing much better in improving the habitat and biodiversity of our region.
- We attend training sessions provided by state and federal agencies. We train and are then tested for licenses required in order to apply restricted use pesticides.
- We attend regular training sessions to collect required continuing education units to maintain our accreditations for those licenses.
- We are required to keep detailed records on pesticide applications and storage. We are required to provide a great deal of documentation and training for our workers to ensure their safety as well as the safety of all others.
- And this is not just true of my farm, but of my colleagues in US cotton farming who treasure the environment, wildlife, and their preservation for future generations



- When I talk about family, I have to share a picture of my granddaughter, the most important reason to be the safest and most responsible steward I can be.
- I am blessed to farm and to serve as the caretaker of this patch of earth not only for my grandchildren but future generations as well.





DANKE

Thank You

This concludes my presentation and will be happy to address any questions as time allows.

Thank you.