



NATIONAL CONFERENCE ON
**COVER CROPS
& SOIL HEALTH**
**HARVESTING
THE POTENTIAL**

Sunlight being harvested



October 30, 2013, Steve Groff farm, southeastern PA

When there is no cover



November 22, 2012, Decatur, IL

Hugh Hammond Bennett
founder of the
USDA Soil Conservation Service (now NRCS)



March 21, 1935



Is soil erosion still a problem?

Dust storm closes highway west of Carlinville

www.ksdk.com/story/news/local/2014/01/24/highway-108-closed-dust-storm/4839543/

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Dust storm closes highway west of Carlinville



TROOPER HURT IN ACCIDENT IN RARE DUST STORM 35° 10:05 News Channel 5

A dust storm closed a highway west of Carlinville, Ill. for a short time Friday afternoon.

Heavy Rains Send Iowa's Precious Soil Downriver

by **DAN CHARLES**

July 12, 2013 12:12 PM



Soil erosion after five inches or more of rain fell in one hour across portions of Western Iowa in 2013.

Erosion and Sediment Loss at a Large Scale

Sediment flowing into Chesapeake Bay from Susquehanna River, September 13, 2011



Image courtesy [NASA/GSFC/MODIS](#)

Hugh Hammond Bennett's work is not yet done



Indiana farmland, from ScienceBlogs.com (2007)

Cover crops can be a key part of today's conservation efforts



Ryegrass, October 22, 2013, Jules Willott farm, east central MO test plots, Rich Hoormann & Charlie Ellis

Grand Lake St. Mary's, Ohio



Grand Lake St. Mary's, Ohio



Record nitrate levels from farm runoff in rivers

FRIDAY MAY 10, 2013 | [THE ASSOCIATED PRESS](#)

Rivers providing drinking water running at record high nitrate levels from fertilizer runoff



Our Opportunity



Crimson clover in the springtime, University of Missouri Bradford Farm, Columbia, MO

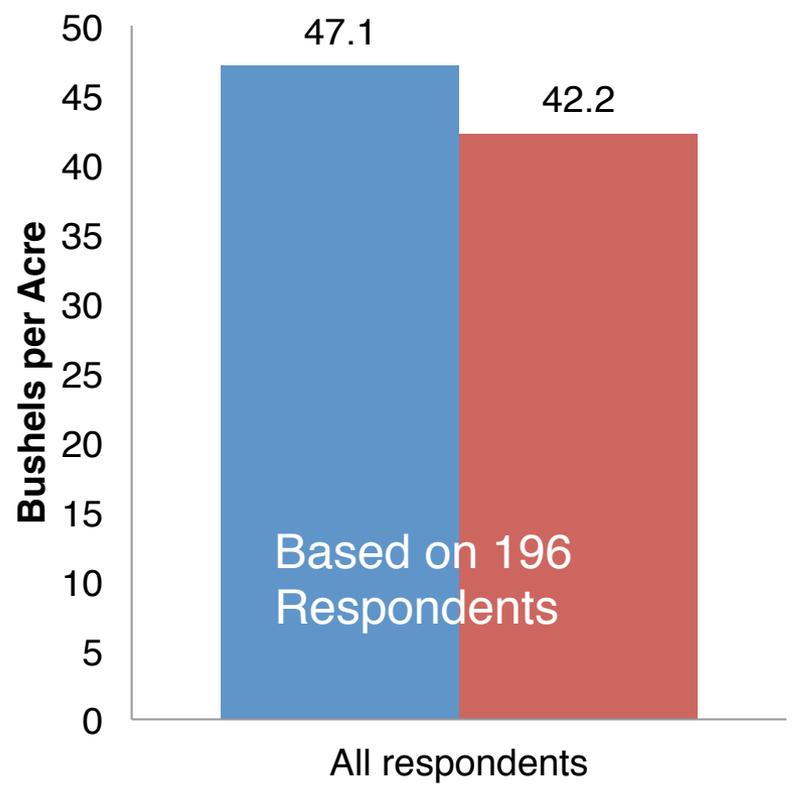
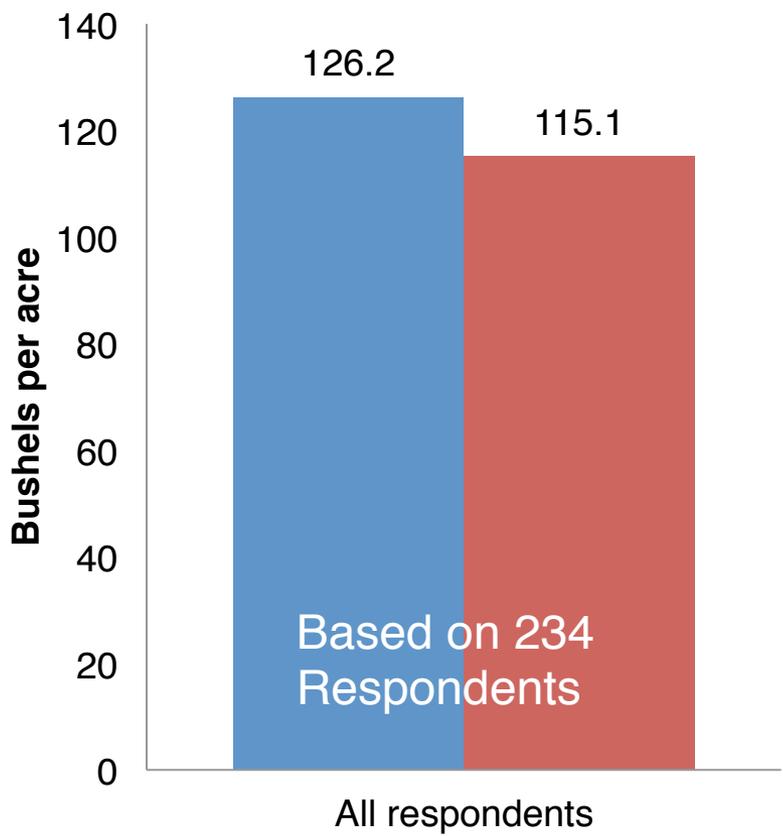
CAN COVER CROPS PAY?

Cover crop impact on corn and soybean yields in 2012 and 2013

SARE/CTIC National Survey Results



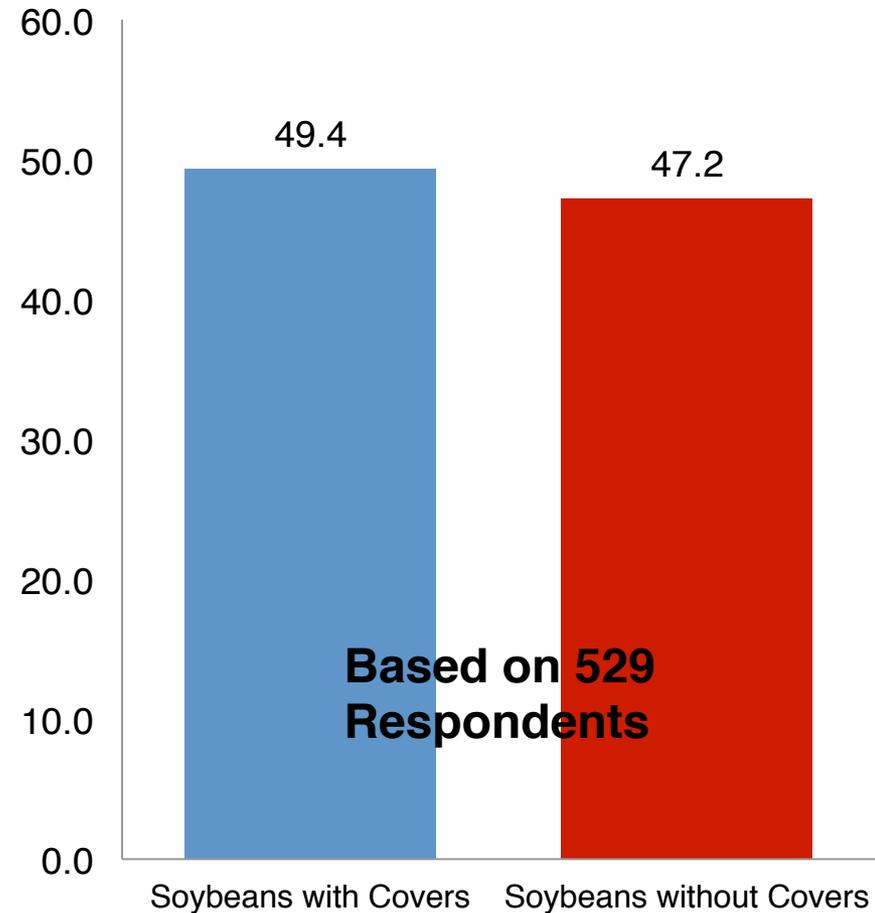
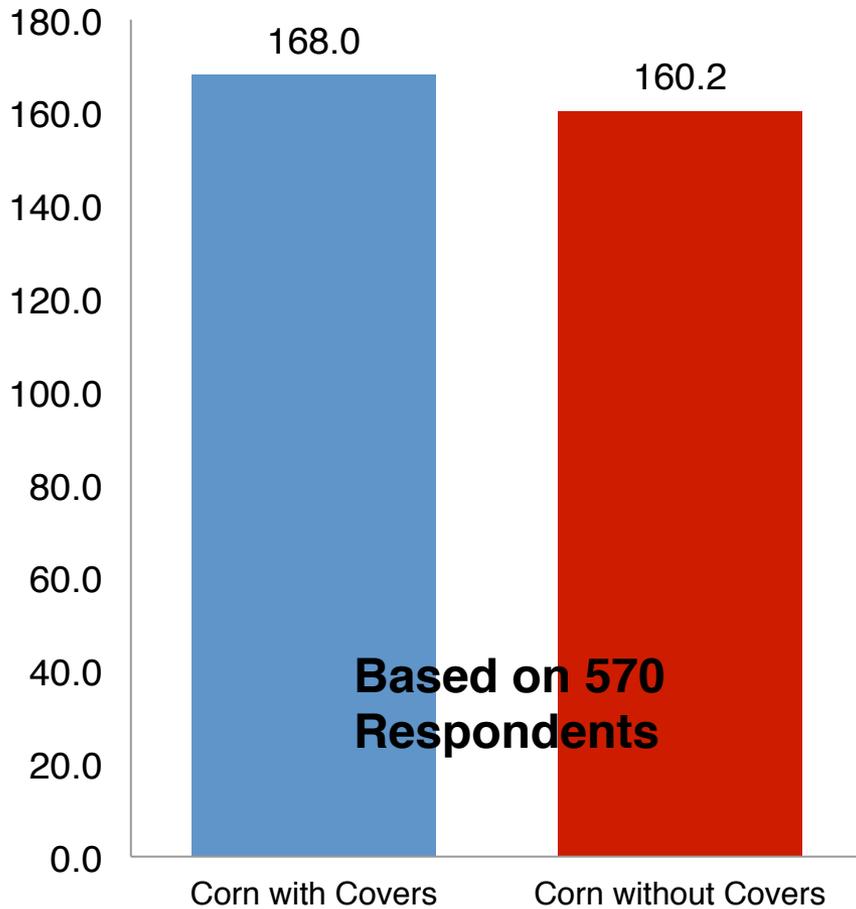
Impact of Cover Crops on Corn and Soybean 2012 Yields*



■ corn with covers ■ corn without covers ■ Soybeans with covers ■ Soybeans without covers

**Yields are for 2012 on farms where farmers had side by side fields with similar management and varieties, other than using cover crops or not*

Impacts of Cover Crops on Corn and Soybean Yields in 2013



YIELD IMPACT OF COVER CROPS

Based on two years of national surveys with data from hundreds of farmers, cover crops boosted corn and soybean yields with a **5 to 10% increase.**



Do Cover Crops Pay?

Cover crop costs

- Seed purchase (\$20-30), planting the seed (\$10-12), terminating the cover crop (\$0-10) — total in the range of \$30-50/acre, median figure from survey is \$37/acre for seed and seeding

Potential short-term returns from cover crops

- Yield (farmers reported 5-10% yield boost in SARE/CTIC surveys)
- Assuming average 5% yield increase, 2013 national average corn and bean yields and current corn and bean cash prices –
 - \$35/acre return for corn (159 bu/ac @ \$4.45/bu x 5%)
 - \$28/acre return for soybeans (43 bu/ac @ \$13.23/bu x 5%)
- Nitrogen credit (depends on N fertilizer application method and type of cover crop) - \$0-30/acre
- Weed and other pest management – variable – \$0-15/acre
- Grazing opportunities? Value of forage \$30-45/acre or more

Do Cover Crops Pay?

Potential long-term on-farm returns from cover crops

- ✓ Building the organic matter – helps with nutrients, soil moisture, and possibly land value
- ✓ Reduced soil compaction and reduced pressure from some diseases
- ✓ Improved soil health – improved yield and increased resiliency of the cropping system
- ✓ Reduced erosion of soil and better soil tilth, helping with cash crop establishment
- ✓ Overall change in management system may lead to lower production costs

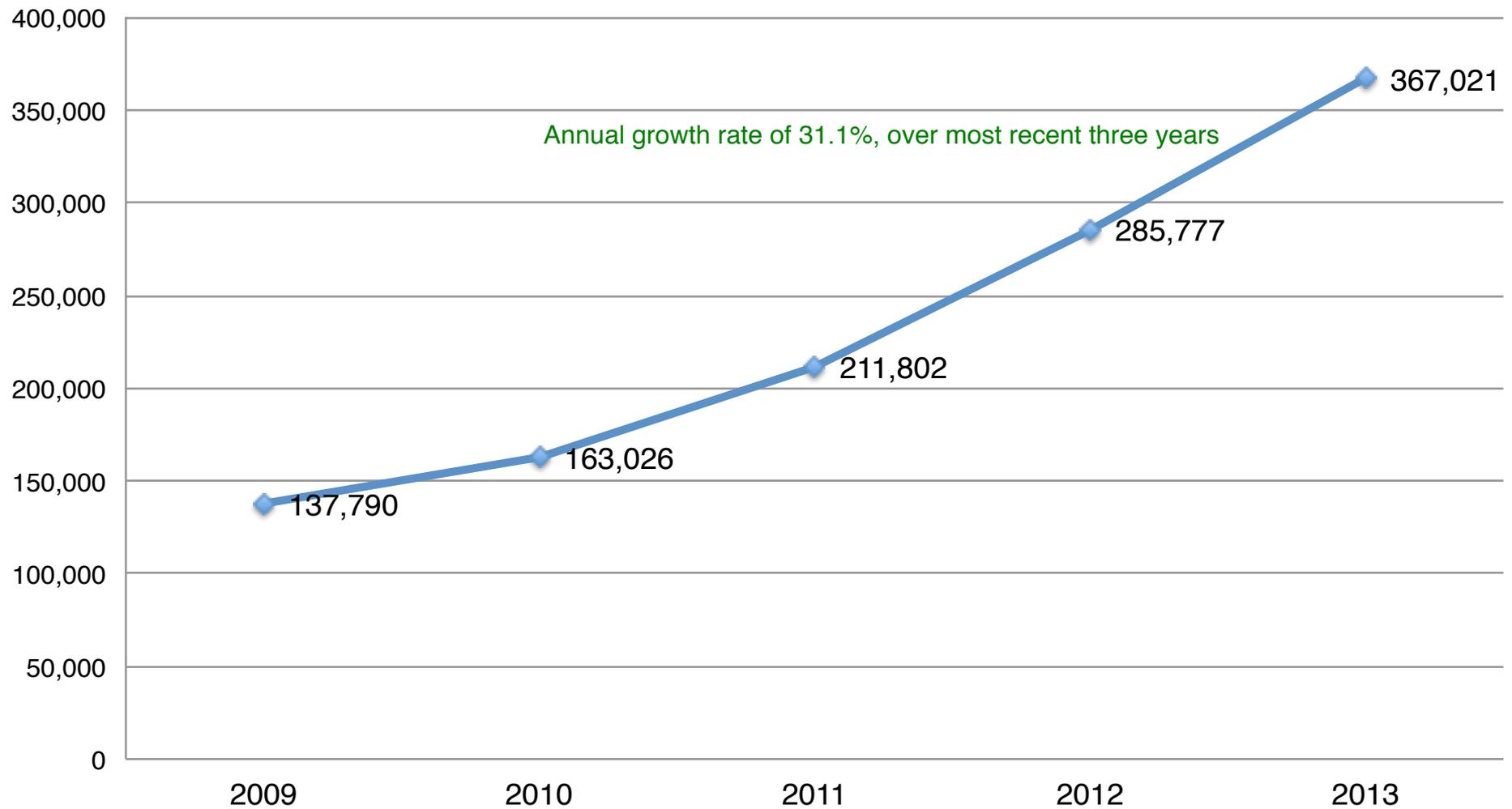
Cover Crop Economics

- Off-farm returns to society (tax payers)
 - Less sedimentation in streams and rivers, so less dredging
 - Reduced movement of pesticides off of farms
 - Reduced nutrient loading of surface waters – local rivers and lakes to Chesapeake Bay, Lake Erie, Gulf of Mexico, etc.
 - Increased sequestration of carbon into the soil
 - Benefits for wildlife, pollinators, even greener countryside
 - Lower crop insurance payouts?

Can we move farther and faster with adoption of cover crops and soil health practices?

2-3 million acres of cover crops now
Can we get to 20 million acres of cover crops?
Can we get there by 2020?

Total acres of cover crops planted by surveyed farmers



Preliminary data from 2013-14 SARE/CTIC cover crop survey

High clearance cover crop broadcaster

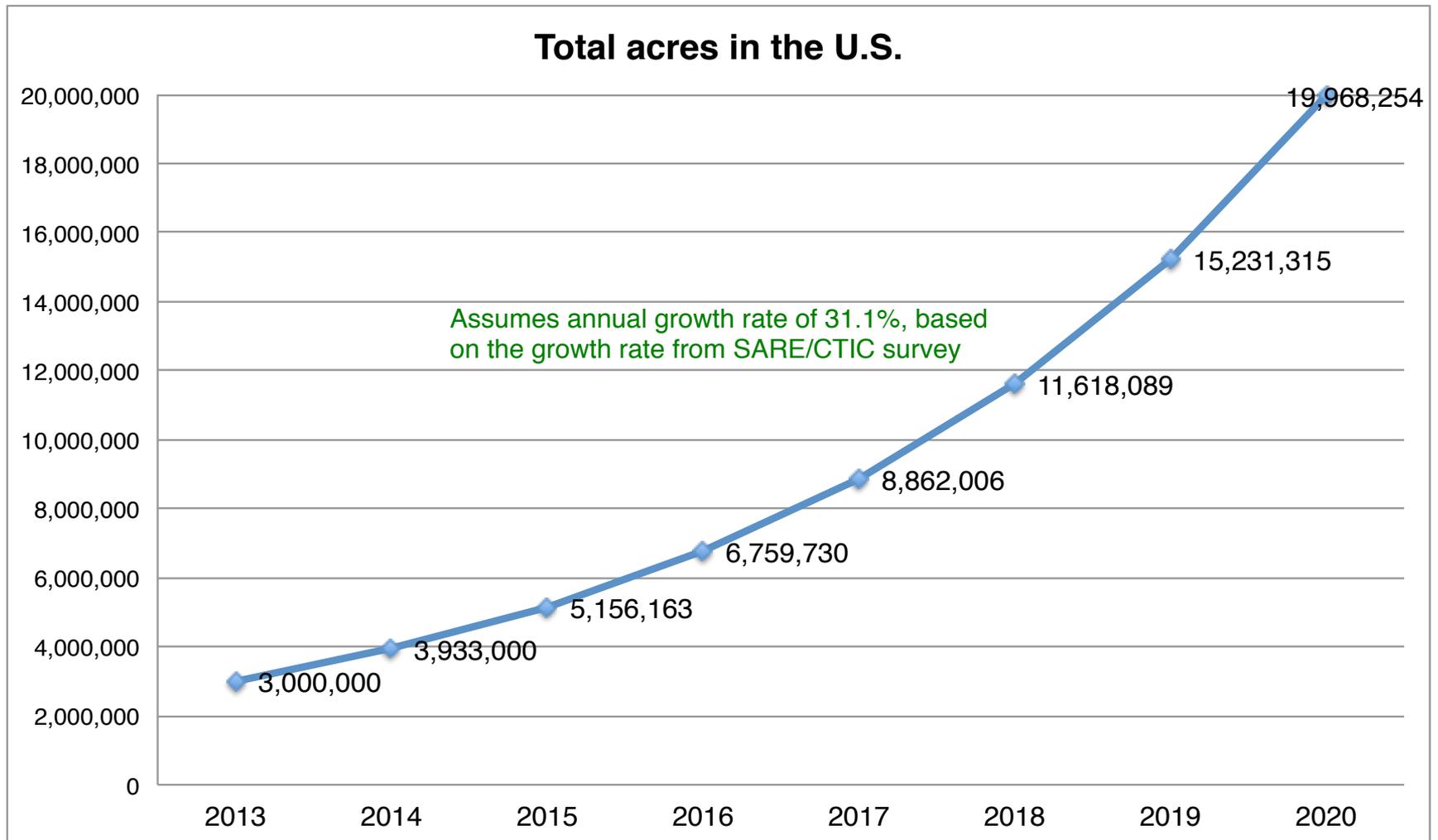


SEEDS
75-18



Gandy
Harvest Seeder
with Combine

Can We Get to 20 Million Acres of Cover Crops by the Year 2020?





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