



BREEDING AND GERMPLASM

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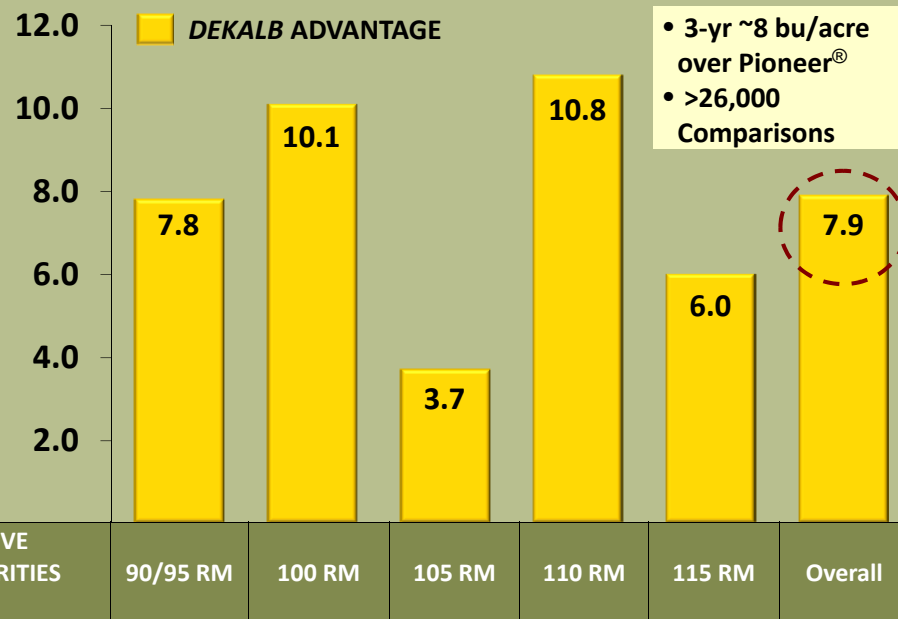
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Germplasm Drives Platform Advantage and is Key to Ongoing Mix Lift

3-YEAR AVERAGE YIELD ADVANTAGE

2009 ENDING COMPARISONS: *DEKALB* VS. *PIONEER*®

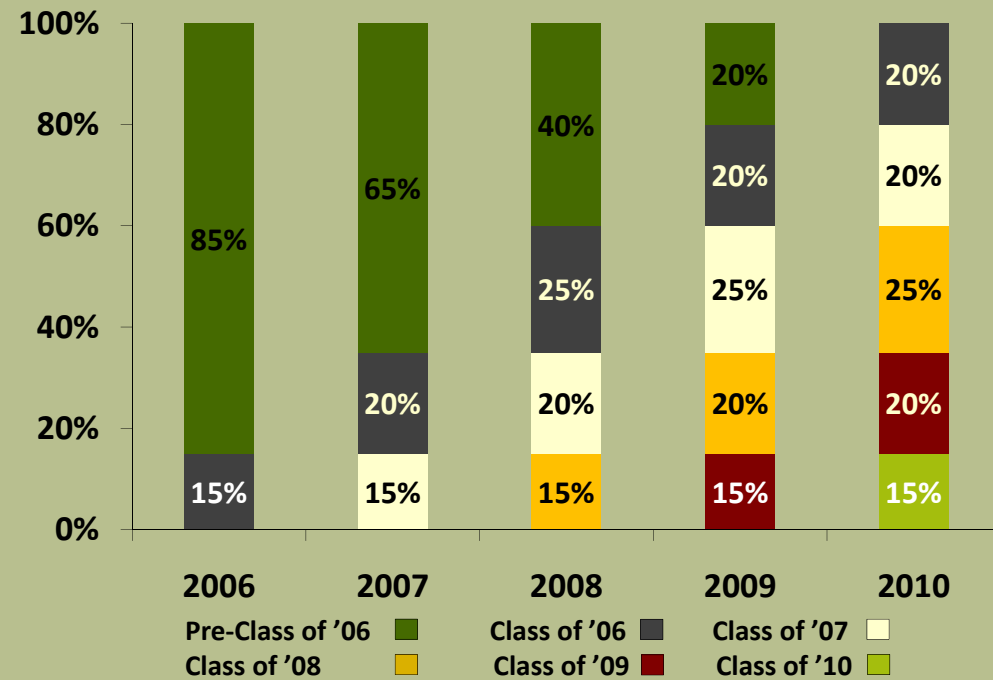


Lead over Pioneer across all maturity zones

- 3 year average total is almost 8 bu/acre and growing
- Recent gains show incremental lift in the 110 RM +
- Class of '11 shows continued strength

PRODUCT LIFE CYCLE

EXAMPLE: CORN HYBRID



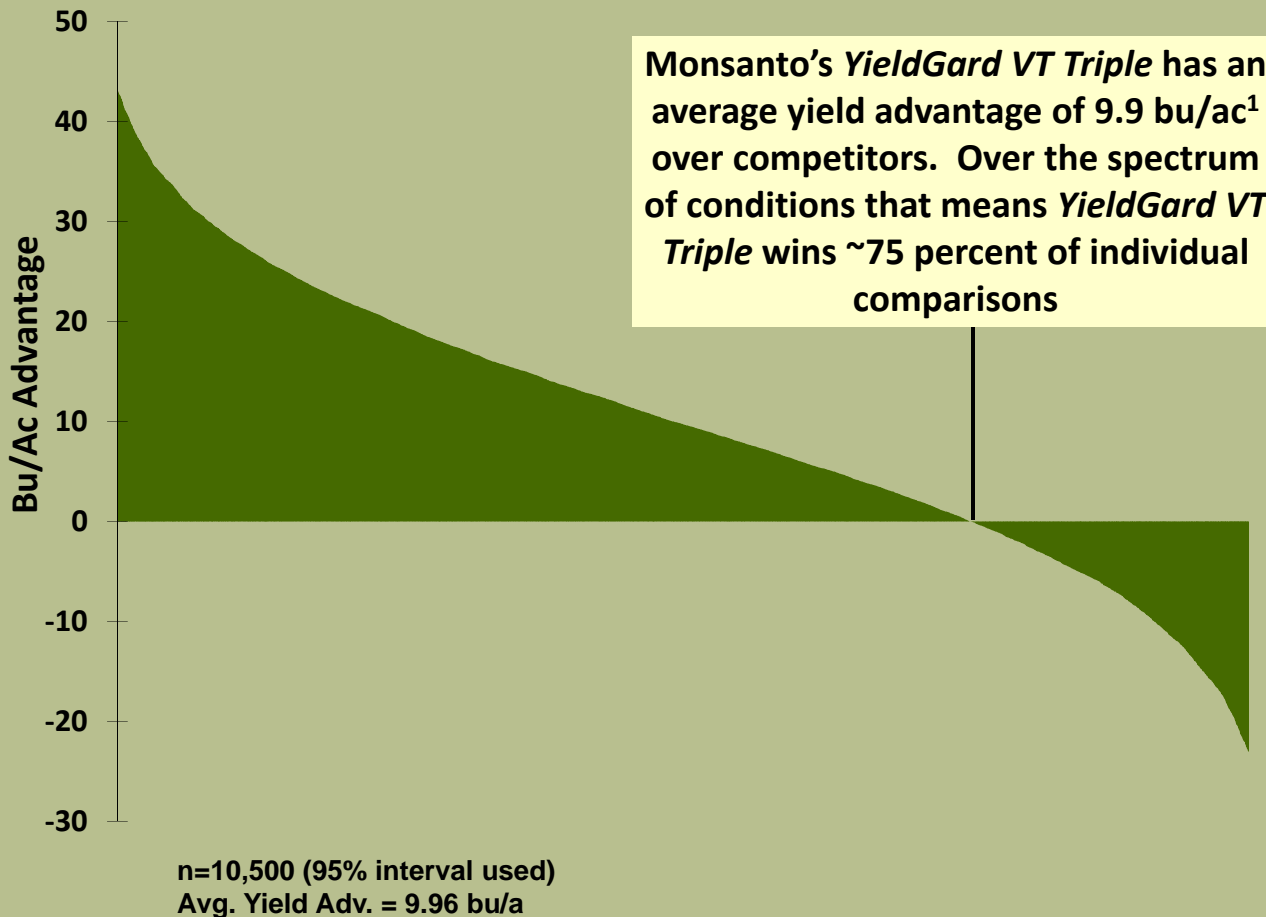
Yield Advantage Enables Mix Lift

- Each class delivers incremental yield over prior year
- Average price lift created as 5+ year old hybrids exit portfolio
- Newer hybrids create lift through unit expansion over lifespan

Superior Germplasm Wins Approximately 75 Percent of Trials

MONSANTO YIELDGARD VT TRIPLE VS. PIONEER® TRIPLE

In Zone 1 (2007 – 2009)



TRIAL RESULTS WILL VARY

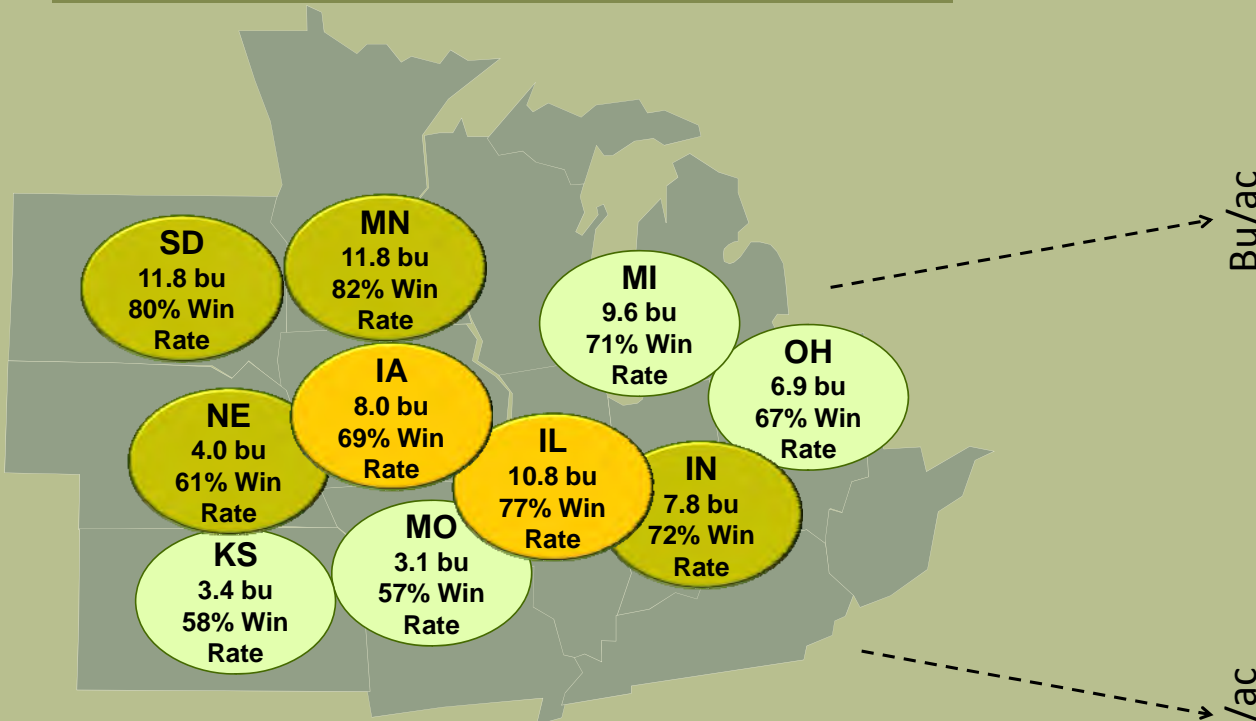
- Yields are a result of genetics by environment
- Local conditions such as soil type and moisture create variability
- True superiority is statistically achieved over many trials, sites, and competitors

1. Source: 2009 Monsanto and third party head-to-head comparisons as of December 02, 2009 for Zone 1 from 2007 to 2009

Germplasm Momentum In Key Corn-Growing Regions

GEOGRAPHIC BREAKDOWN:

DEKALB YIELD DATA ADVANTAGE VS. ALL 2009¹



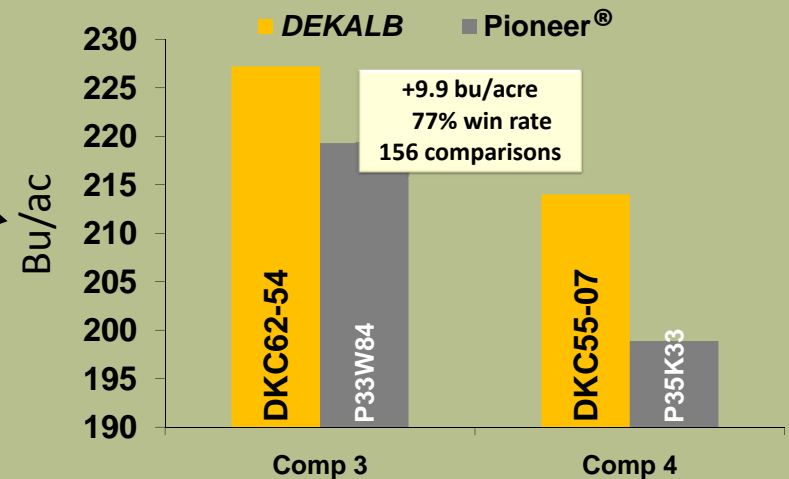
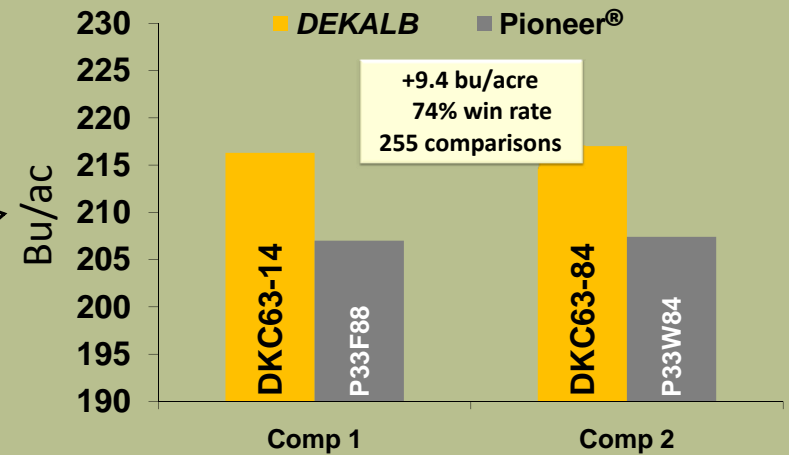
- >10M USDA CORN PLANTED ACRES STATES
- 5 – 10M USDA CORN PLANTED ACRES STATES
- <5M USDA CORN PLANTED ACRES STATES

1. Source: 2009 head-to-head comparisons of 5 leading DEKALB hybrids within each RM zone to competitors containing similar crop protection traits as of Dec. 2, 2010. Weighted average of all RM zones resulted in a 9.9 bu/acre advantage over competitors calculated to 15% moisture.

2. Source: 2009 Monsanto and Pioneer® head-to-head comparisons of top selling DEKALB and Pioneer® hybrids containing similar crop protection traits as of December 02, 2009. Included in these trials are trial results from corn breeding mini-strips, FACT Trials, Market Development Trials and Sides by Sides.

2009 "I" STATES LEADING HYBRIDS

DEKALB VS. PIONEER®²

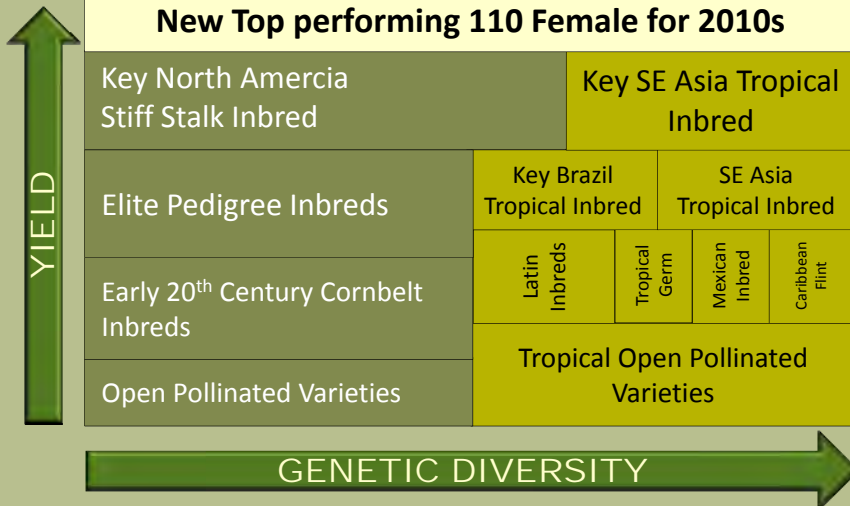


Monsanto's Yield Advantage Has Grown Through Breeding and Diverse Germplasm

BREEDING ADVANCES DRIVE YIELD GAINS

EXAMPLE: NEW CORN HYBRID EVOLUTION

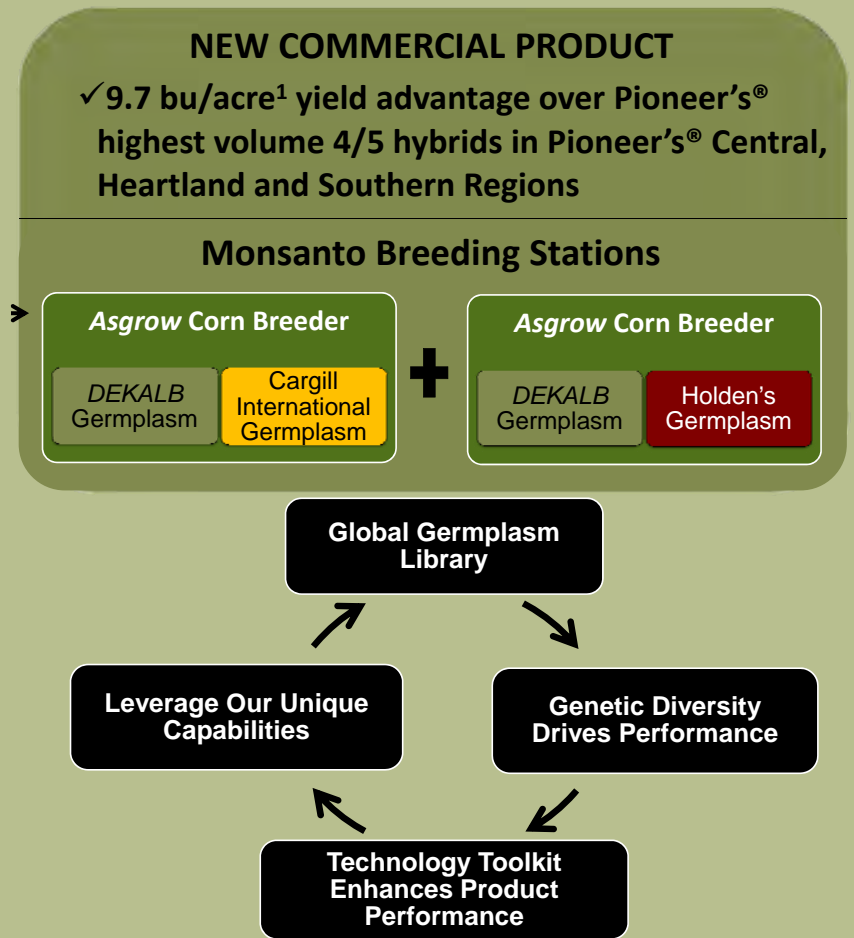
	1930	1960	1970	1980	1990	2000	2009	2010
U.S. CORN BU/ACRE	20	55	72	91	118	137	165	164



GENETIC VARIATION DRIVES YIELD

- Global germplasm library contains unique genetic variation
- Global breeding network identifies favorable genetic variation – Ex. Resistance to pathogen
- Unique crosses unlock hybrid performance

GERMPLASM LIBRARY AND UNIQUE ASSEMBLE CREATE INCREASING GROWER ADVANTAGE



NEW COMMERCIAL PRODUCT
 ✓ 9.7 bu/acre¹ yield advantage over Pioneer's® highest volume 4/5 hybrids in Pioneer's® Central, Heartland and Southern Regions

Monsanto Breeding Stations

Asgrow Corn Breeder

DEKALB Germplasm

Cargill International Germplasm

Asgrow Corn Breeder

DEKALB Germplasm

Holden's Germplasm

Global Germplasm Library

Leverage Our Unique Capabilities

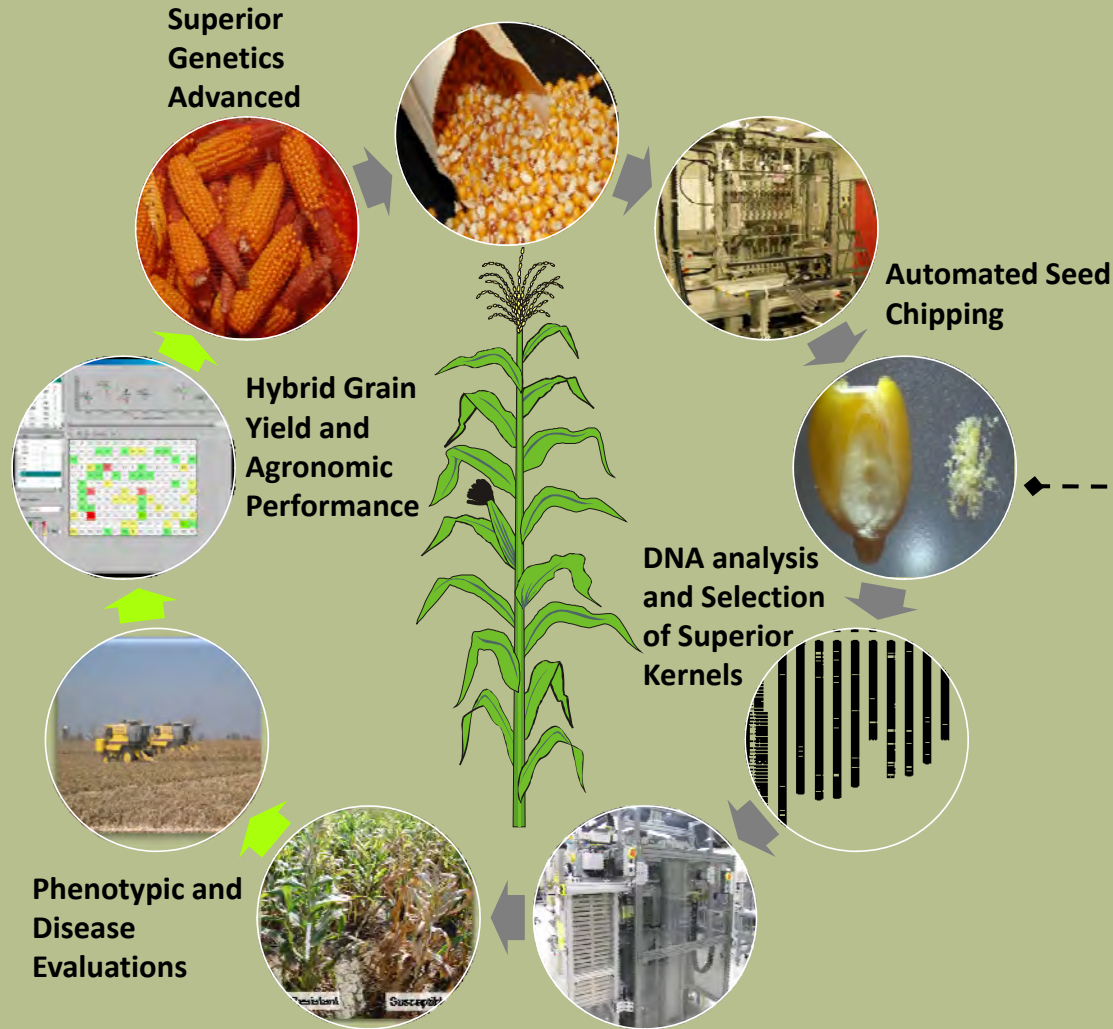
Genetic Diversity Drives Performance

Technology Toolkit Enhances Product Performance

1. Source: 2009 Monsanto and Pioneer® head-to-head comparisons of top selling DEKALB and Pioneer® hybrids containing similar crop protection traits as of December 02, 2009. Weighted average 9.7 bu/acre advantage and 69% win rate. N = 510 comparisons

Technology Toolkit Enhances Next Level of Yield Gains

SELECTION IN THE LAB ENHANCES SELECTION IN THE FIELD



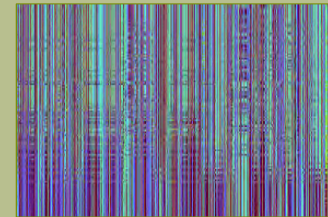
DEPLOYING THE TECHNOLOGY TOOLKIT

➤ ① Analyze – Global Database of 10 Years of Mapping



- **High-resolution trait knowledge enhances phenotypic selection**
 - Over 40 million marker-trait associations
 - Derived from over 630,000 hybrids from more than 3,400 breeding pedigrees

② Select – High-Density SNPs and Seed Chipping



- **DNA selection identifies superior seeds based on genotype**
 - 100s of millions marker data points every year
 - 10s of millions of samples every year
 - Whole genome SNP knowledge
 - 75,000 SNP assays

③ Introgress – Accelerate Breeding with DH

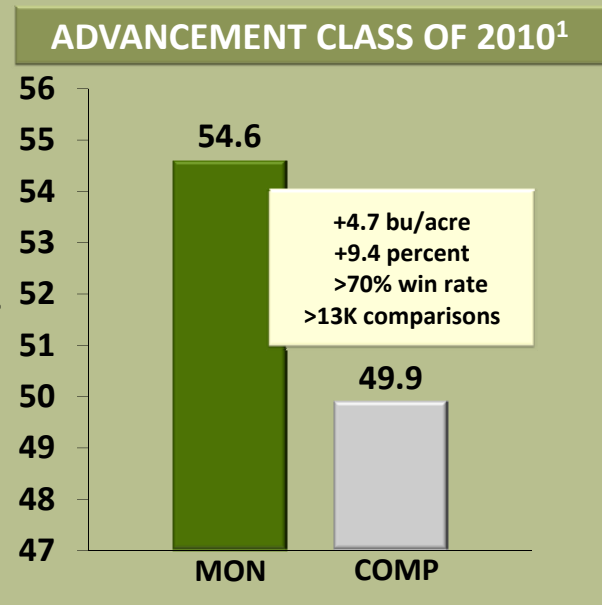
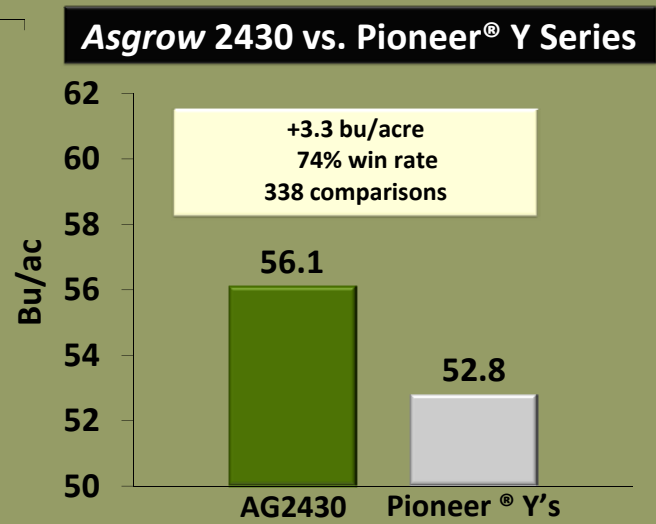
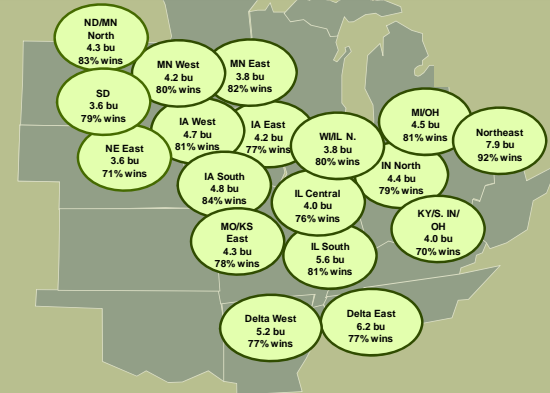
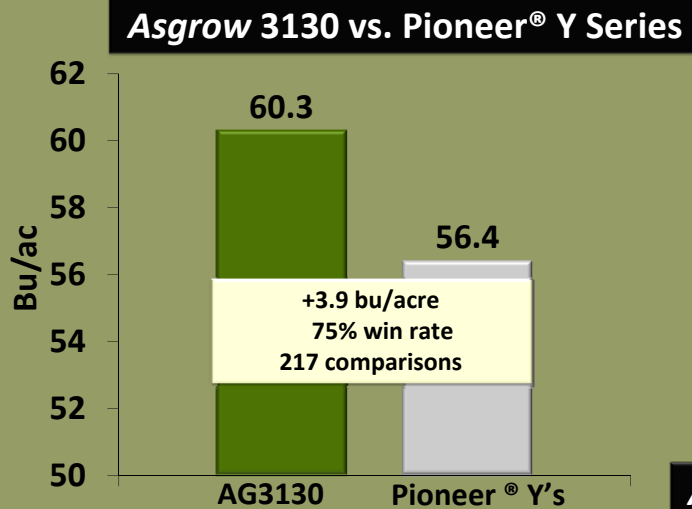


- **Doubled haploid (DH) inbreds enhance rate of genetic gain**
 - 2nd generation of DH derived Commercial Products
 - All global breeding programs
 - Over 500,000 doubled haploid inbreds produced every year

Class of 2010 *Genuity Roundup Ready 2 Yield* Sets the Standard In Competitive Platforms

FARMER 2009 FIELD STRIP TEST DATA FOR MIDWEST STATES RR2Y vs. Pioneer® Y's Leading Varieties²

GEOGRAPHIC BREAK-DOWN: *Roundup Ready 2 Yield*

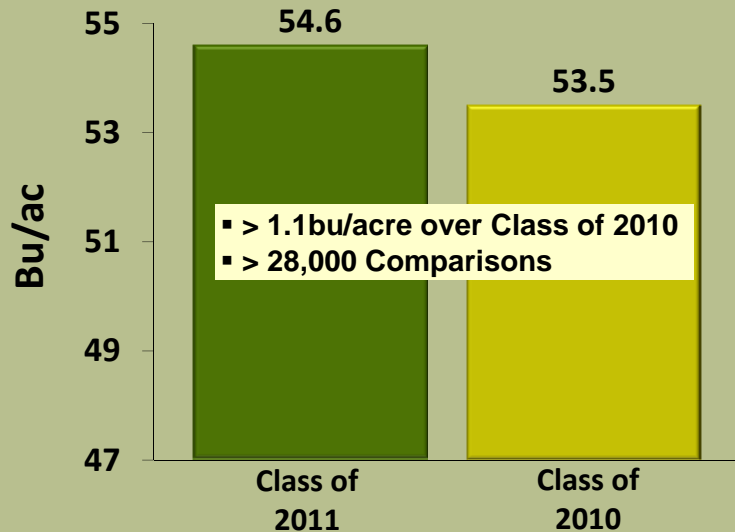


2. 2009 Farmer field strip test data for Midwest states. Comparisons to Y series of comparable maturity.

1. Class of 2010 advancements represents *Roundup Ready 2 Yield* varieties to be deployed in their projected sales geographies. Comparisons are between Class of 2010 versus national competitive *Roundup Ready* products as of Nov. 21, 2009.

Soy Germplasm Strength Underpinned By Germplasm Class Gains And Trait Integrations

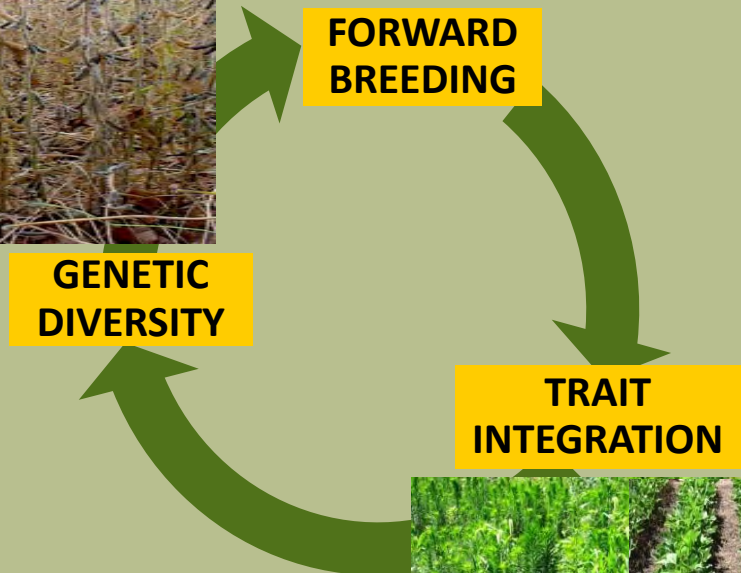
CLASS OF 2011 VS. CLASS OF 2010*



*Head to head comparisons from breeding trials between Class of 2011 candidates and Class of 2010 advancements as of Nov. 21, 2009.

TECHNOLOGY DRIVEN

- Markers
- Sequencing
- Seed Chipper
- Disease & Pest Screening
- Transgenic & Non-Transgenic Agronomic Traits



Non-treated Control
 Dicamba at 8 oz/A tank mixed with 22 oz/A of Roundup WeatherMax on Genuity Roundup Ready 2 Yield Dicamba-tolerant soybeans