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Yield Can Fuel Ethanol Expansion

March 2, Ag Outlook Forum

An aerial photograph of a vast cornfield under a blue sky with scattered white clouds. The field is divided into several distinct rectangular plots, some of which are planted with corn at different stages of growth. In the lower-left foreground, a person wearing a yellow shirt, blue jeans, and a dark cap stands in a narrow path between the rows of corn, looking down at something in their hands. The overall scene depicts a large-scale agricultural experiment or a well-managed commercial farm.

Dr. Robb Fraley
Chief Technology Officer
Monsanto Company

Forward-Looking Statement

Certain statements contained in this presentation are “forward-looking statements,” such as statements concerning the company’s anticipated financial results, current and future product performance, regulatory approvals, business and financial plans and other non-historical facts. These statements are based on current expectations and currently available information. However, since these statements are based on factors that involve risks and uncertainties, the company’s actual performance and results may differ materially from those described or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, among others: continued competition in seeds, traits and agricultural chemicals; the company’s exposure to various contingencies, including those related to intellectual property protection, regulatory compliance and the speed with which approvals are received, and public acceptance of biotechnology products; the success of the company’s research and development activities; the outcomes of major lawsuits, including proceedings related to Solutia Inc.; developments related to foreign currencies and economies; successful completion and operation of recent and proposed acquisitions, including Delta and Pine Land Company; fluctuations in commodity prices; compliance with regulations affecting our manufacturing; the accuracy of the company’s estimates related to distribution inventory levels; the company’s ability to fund its short-term financing needs and to obtain payment for the products that it sells; the effect of weather conditions, natural disasters and accidents on the agriculture business or the company’s facilities; and other risks and factors detailed in the company’s filings with the SEC. Undue reliance should not be placed on these forward-looking statements, which are current only as of the date of this presentation. The company disclaims any current intention or obligation to update any forward-looking statements or any of the factors that may affect actual results.

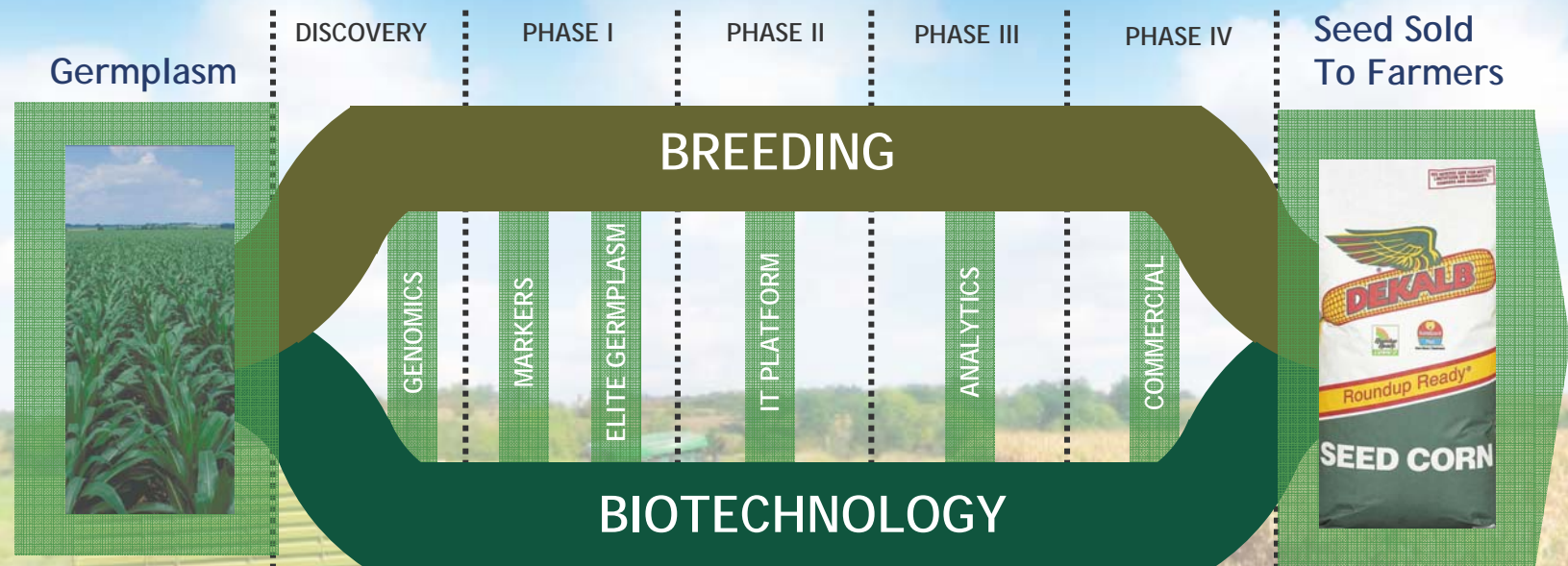
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RR = Roundup Ready; YGCB = YieldGard Corn Borer; RR2 = Roundup Ready Corn 2; HVC = High Value Corn; YGVT = YieldGard VT; YGRW = YieldGard Rootworm; YGPL = YieldGard Plus; RR2Y = Roundup RReady2Yield; RRF = Roundup Ready Flex; BG = Bollgard

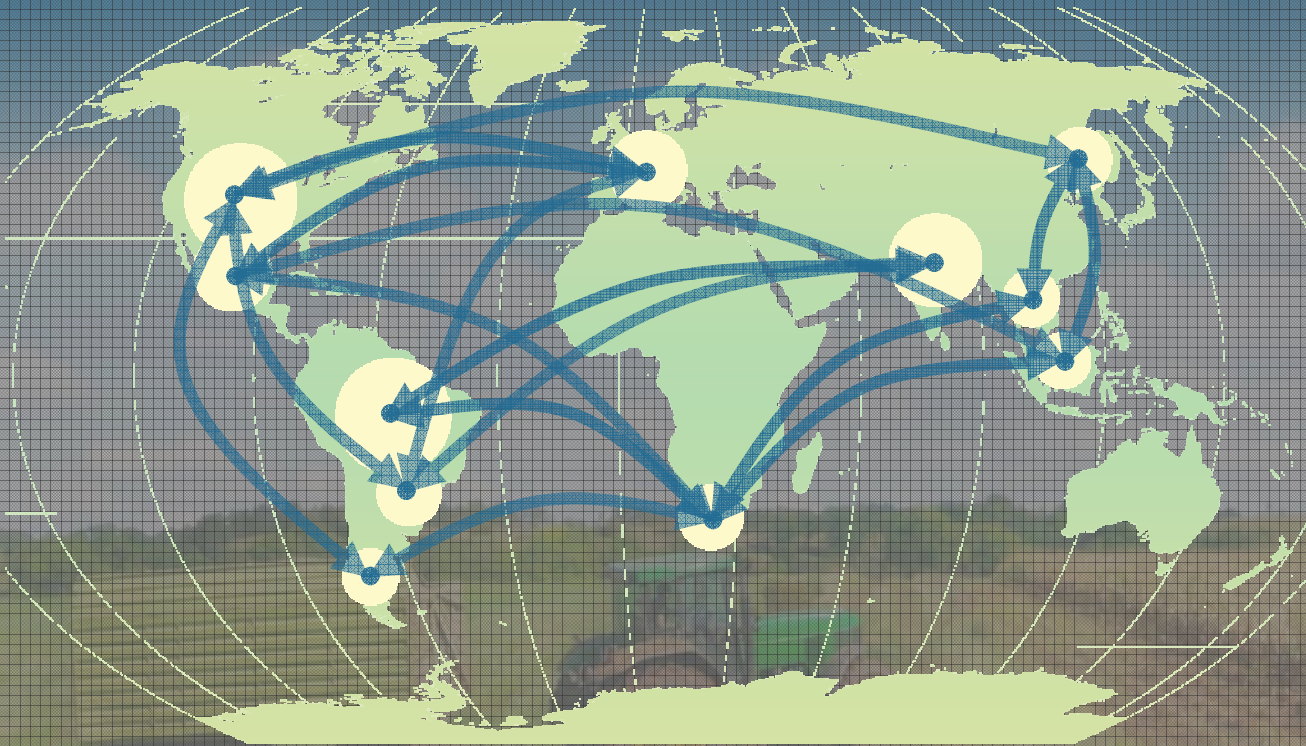
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Breeding and Biotech Provide Parallel R&D Paths to Commercial Products

Development Pathways



Most Diverse Genetic Pool Increases Depth and Breadth of Germplasm



- Increased Yield
- Disease Resistance
- Stress Tolerance
- Grain Quality / Added Value
- Build on strength of current germplasm as well as Molecular Breeding and Crop Analytics Capabilities

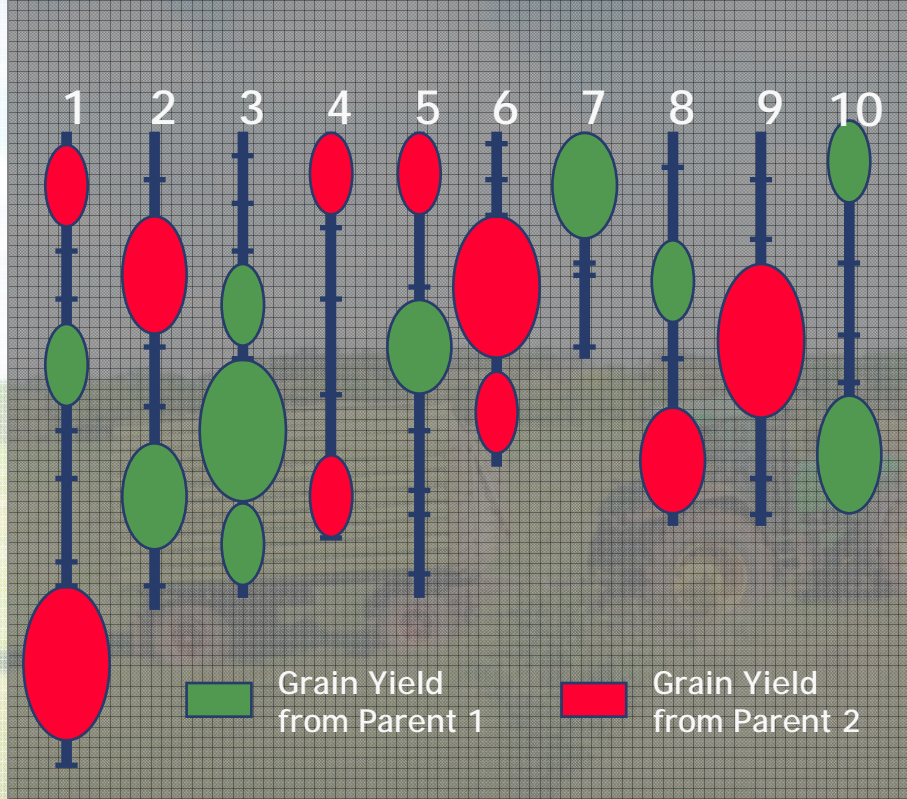


Magnetic Resonance (MRI) and Near Infrared (NIR) Hyperspectral Imaging for Composition analysis

Markers Allow Breeders to Get Best Combinations of Germplasm Faster With Greater Predictability

Marker-Assisted Breeding Rate of Gain is a 2X to 3X Improvement vs. Conventional

TRACKING CHARACTERISTICS FOR YIELD:
Yield Related Areas On Corn Chromosomes



- Corn plant has 40,000 genes spanning 10 chromosomes.
- Characteristics (traits) are built from different pieces on different chromosomes. Markers indicate where particular genes are located
- Using markers to make better selections, breeders can improve the probability of success:

Probability of finding 1 trait that is controlled by 20 genes

"Random"

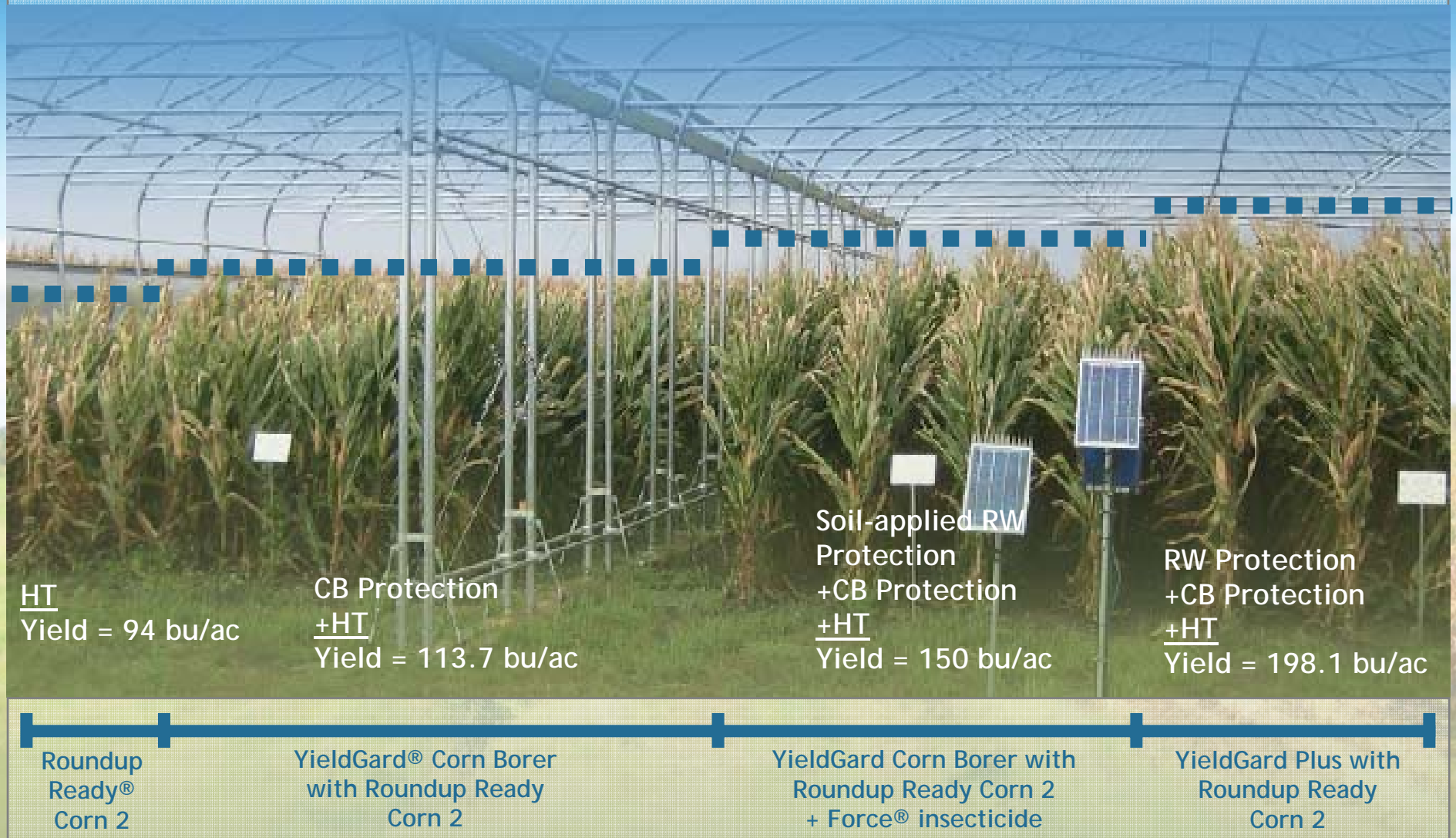
1 per trillion

After application of markers and breeding technology

1 in 5

Positive Effects of Stress Mitigation Are Compounded by the Power of Trait Stacking

Rain Shelter Trial Corn Plot at A Monsanto Research Site



*Yields representative of similar trial. All yield corrected to No. 2 yellow corn.

Biotechnology R&D Portfolio Will Continue to Grow, Providing Benefits in Five Key Areas

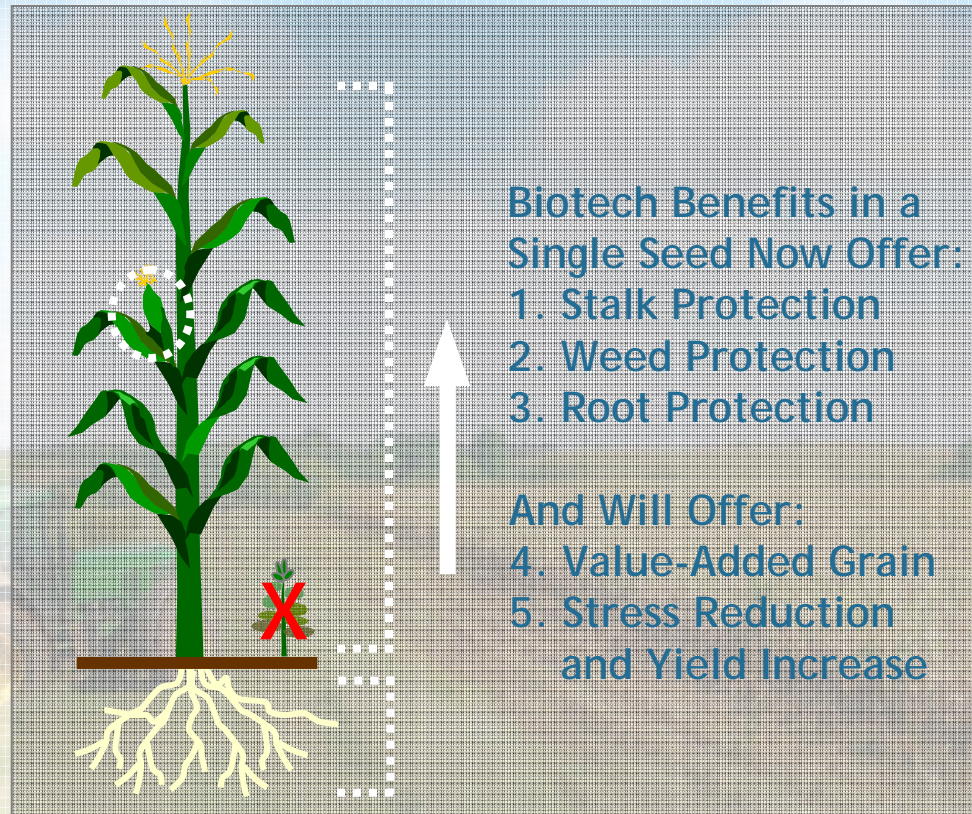
Protection Above and Below the Ground Today, Boosting Yield and Grain Value Tomorrow

TODAY'S TRAITS

YieldGard® Corn Borer
Roundup Ready® Corn 2
YieldGard Rootworm

TOMORROW'S TRAITS

YieldGard VT™ Stacks
Mavera™ high-value corn with lysine
YieldGard VT PRO™ Stacks
Drought Tolerance I
2nd Gen. high-value corn with lysine
Corn Rootworm III
Yield I
Nitrogen Utilization
Drought Tolerance II
Cold Tolerance



Today's traits will be supplemented by tomorrow's, delivering a "total package."

Overcoming Insufficient Fresh Water for Crop Usage

Drought Tolerant Corn

- Yield enhancement demonstrated again in 2006 under water-stress conditions in U.S.
- Lead gene chosen
- 2007 trials expected to demonstrate yield enhancement in multiple hybrids under dryland conditions

2006 Testing Yield Improvement of Lead Event Under Drought Stress



In third year field testing in U.S., drought-tolerant leads are consistently delivering higher yields with gene with controls under drought-stressed conditions

Reduced Leaf Rolling

Discovery

Phase 1
Proof of Concept

Phase 2
Early Development

Phase 3
Adv. Development

Phase 4
Pre-Launch

Launch

Providing Tailored Seed Offerings Necessary to Fuel Ethanol Markets

Maximizing Co-Product Value

Ethanol Draw Area

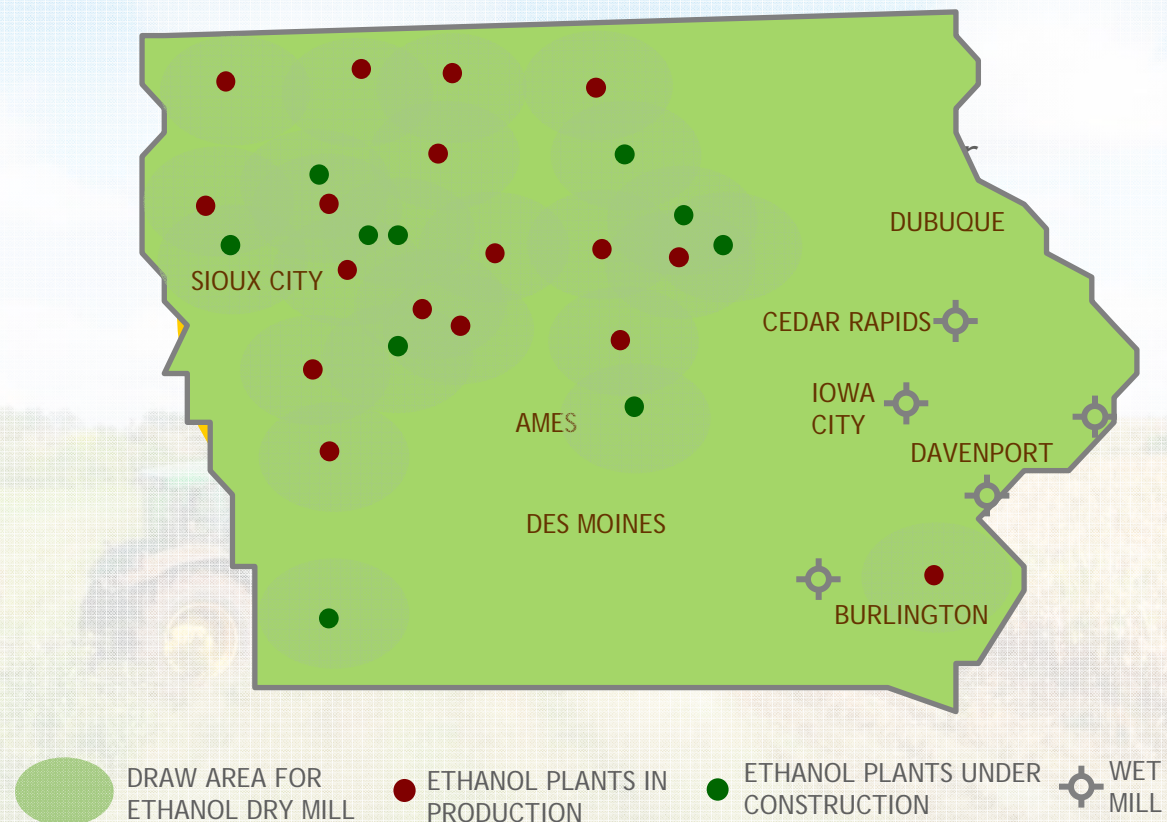
290K corn acres required to supply a 100M gallon dry mill

Opportunity

Ethanol draw acres are likely to be highly “technified” with elite Processor Preferred® germplasm combined in a future stack

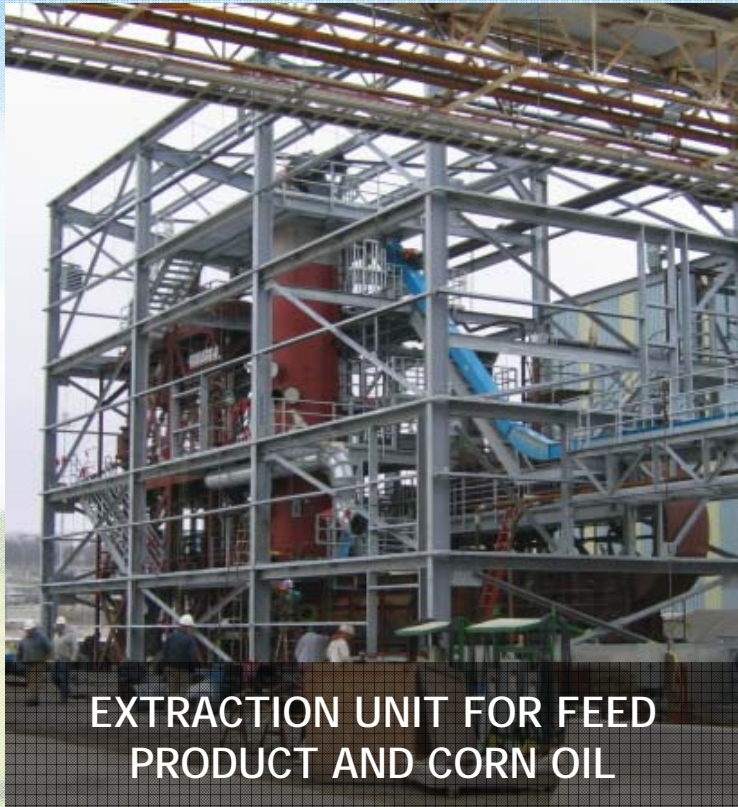
Monsanto’s molecular breeding increases the rate of genetic gain versus conventional breeding

Example: Iowa Ethanol Refineries



Corn Processing Technology Increases Yield and Product Bundle Value

Renessen's Extrax™ Process Bolts on to a Conventional Dry Mill Process



EXTRACTION UNIT FOR FEED
PRODUCT AND CORN OIL

1

Start with a nutritionally dense corn developed through biotech and advanced breeding technologies.

2

Separate it through a novel process technology developed by Cargill and Renessen

3

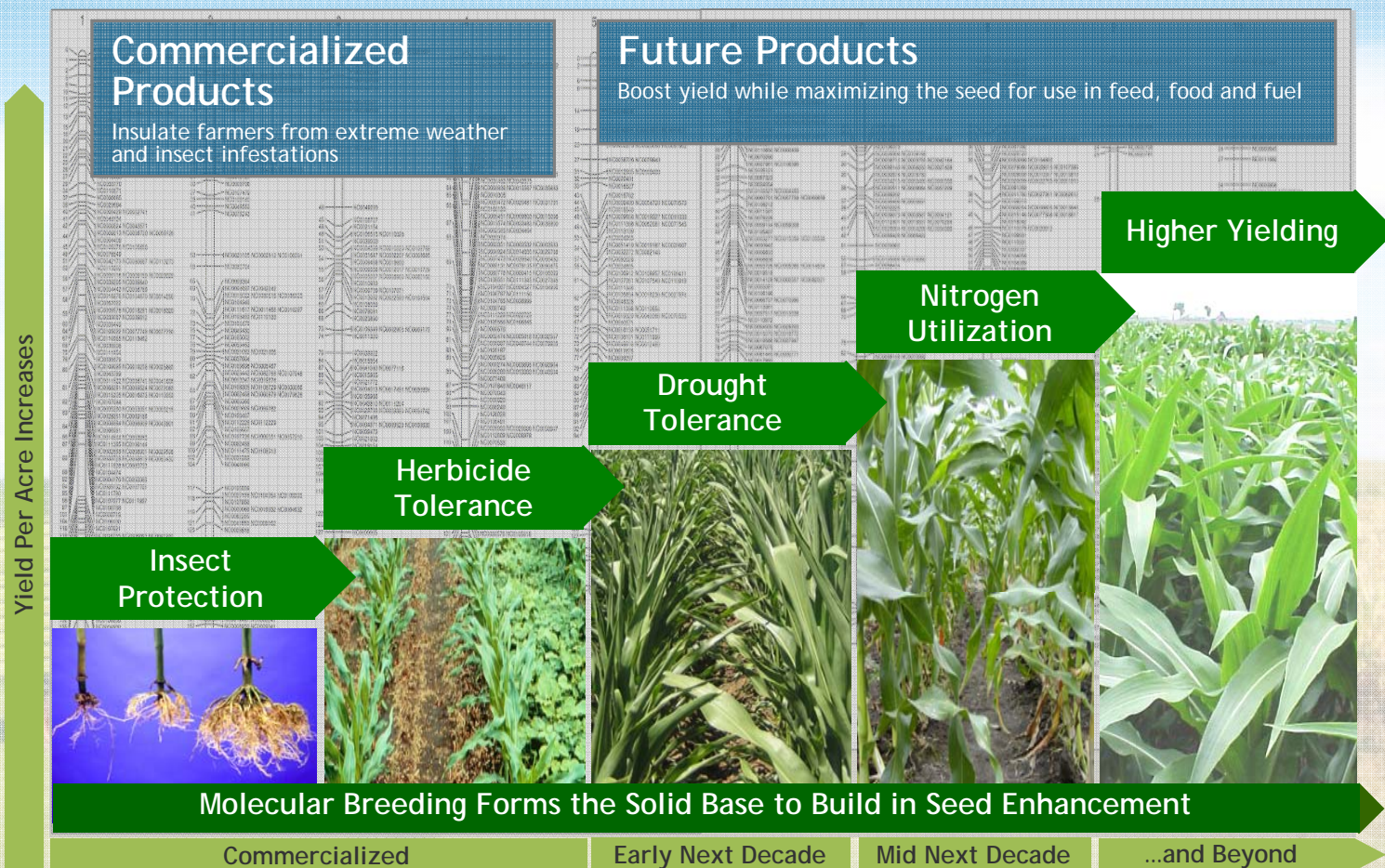
Deliver four high value revenue streams:

- A. Corn oil and / or biodiesel
- B. High value swine & poultry feed
- C. Highly fermentable starch
- D. High protein, low oil DDGs

THE PILOT PLANT IN EDDYVILLE, IOWA, IS IN OPERATION, CO-PRODUCTS BEGINNING FEEDING TRIALS WITH PORK PRODUCERS.

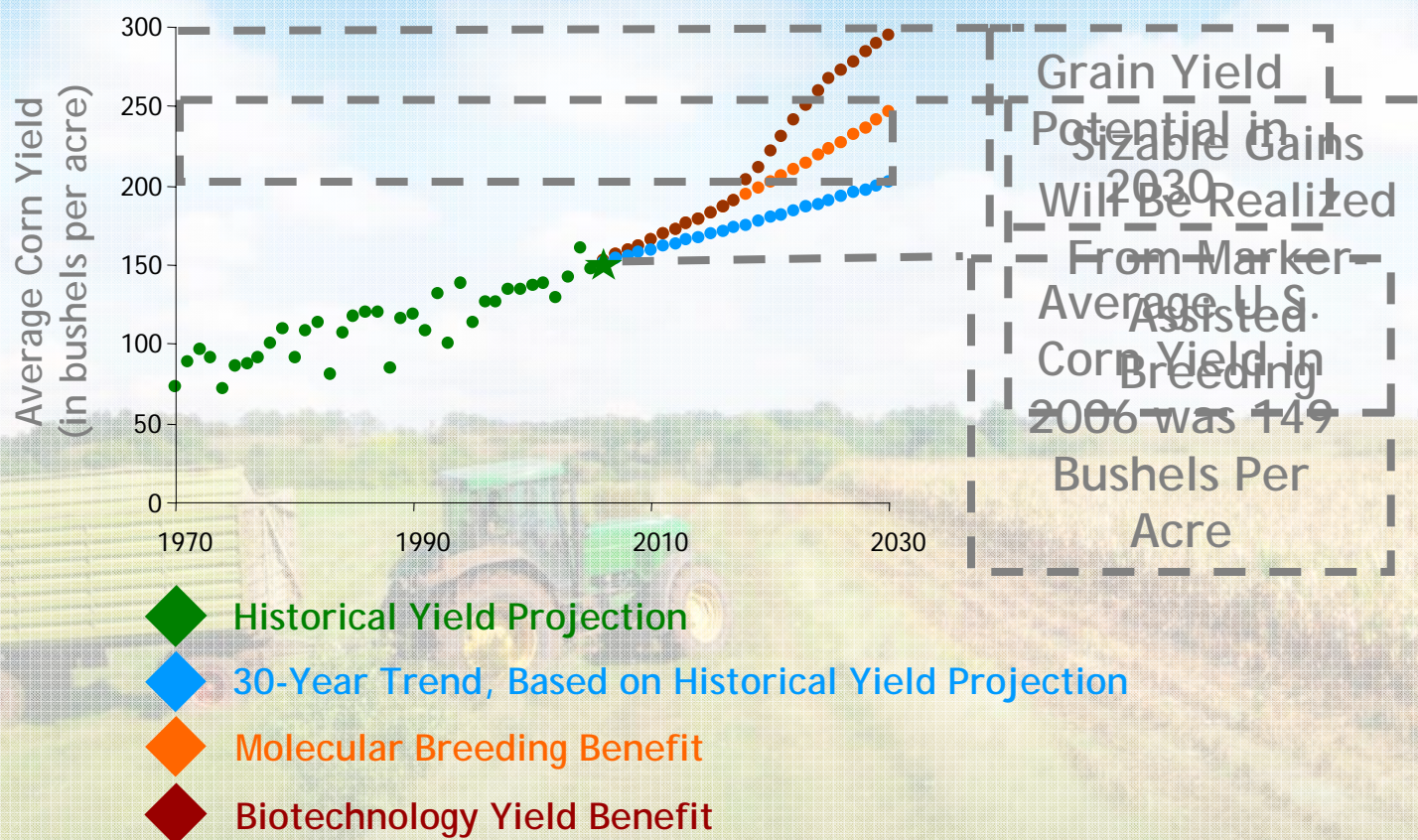
Scientific Advancement Resulting in Current and Future Yield Enhancement

Advances Assisting in Protecting and Boosting Yields



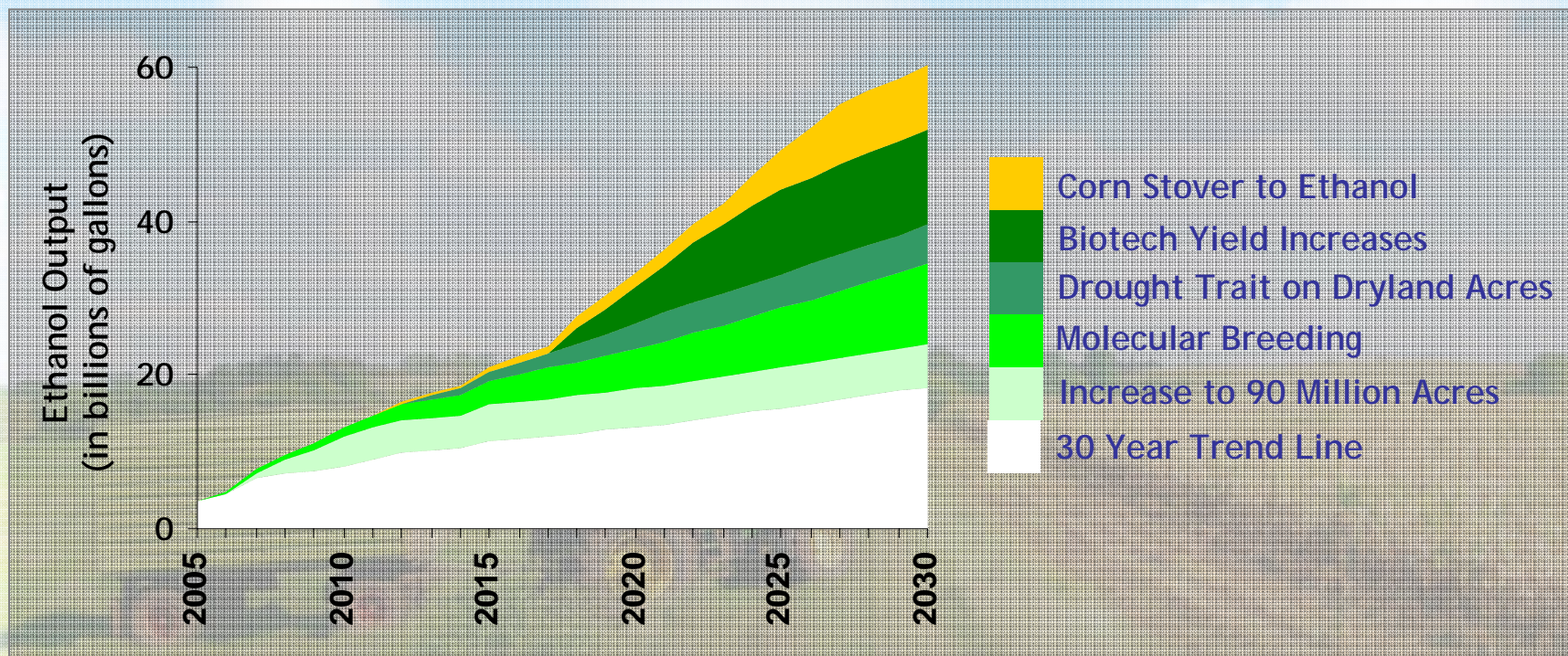
The Combination of Biotechnology and Breeding Can Maximize Gains

Step-Changes in Grain Potential



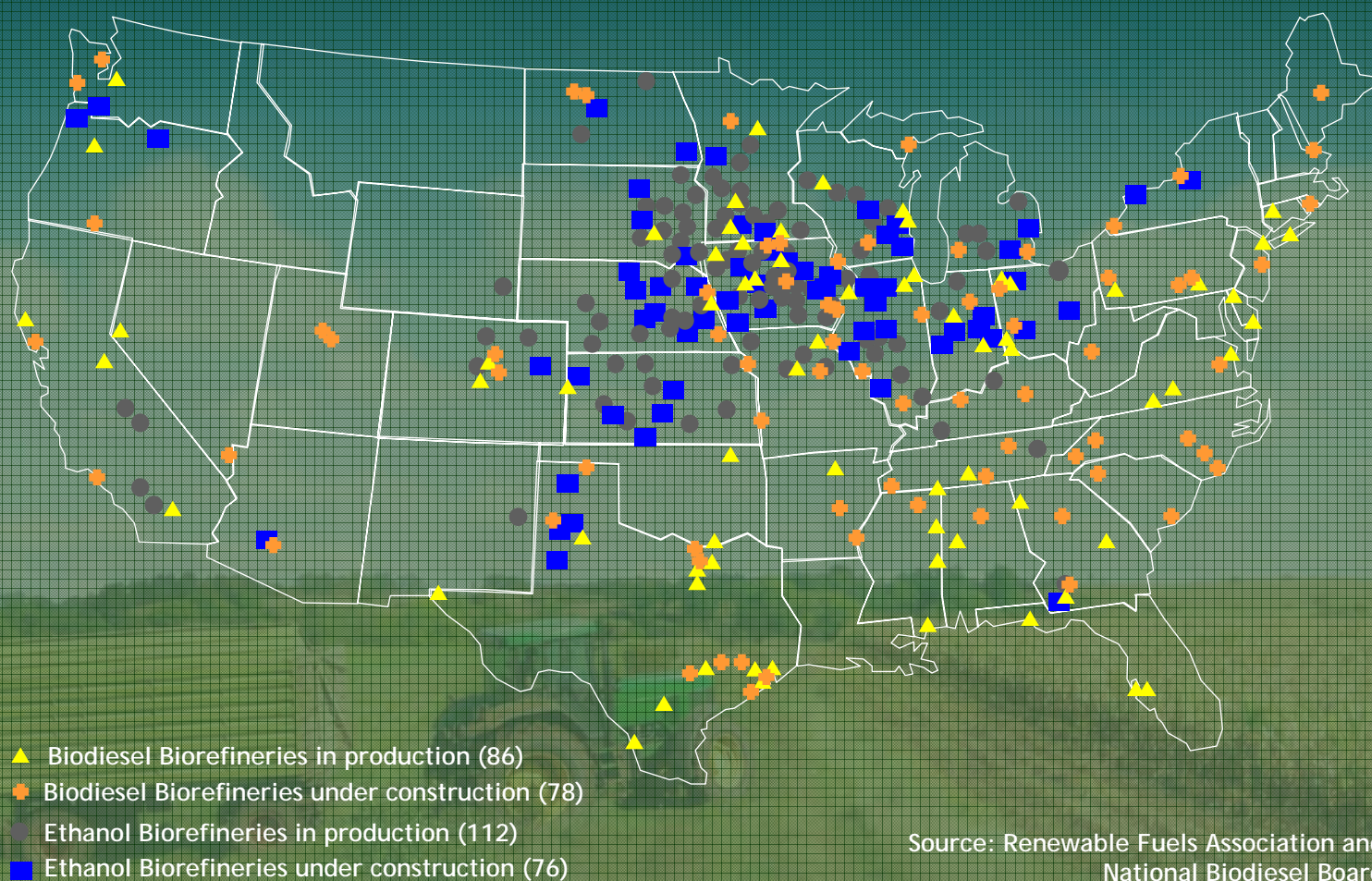
What Can Corn Do?

Step-Changes in Grain Potential



Biofuel Production Provides Local Economic Boost

U.S. Biorefinery Locations



By 2030, ethanol and biodiesel production and sales could account for hundreds of thousands of jobs in local communities.

Stacking Beneficial Traits in Soybeans Has the Potential to Make Each Acre More Productive and Valuable

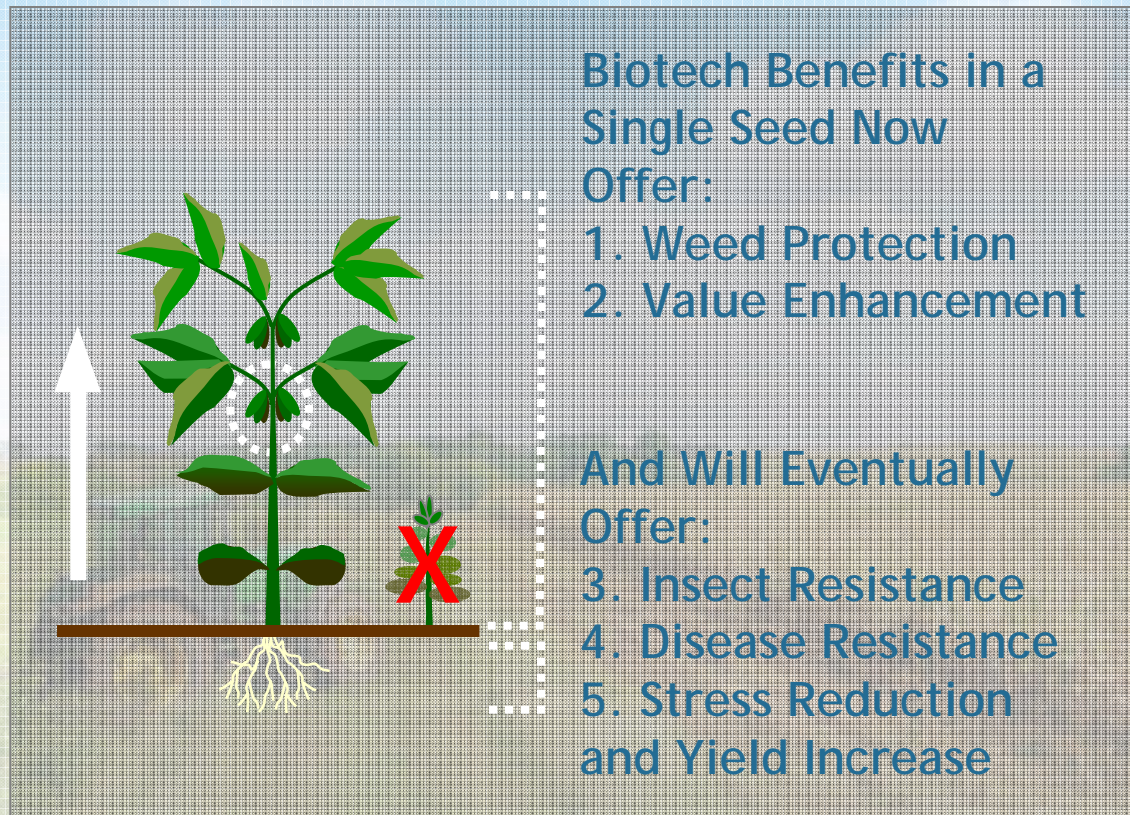
Weed Protection and Value Enhancement Today, Boosting Yield and Generational Improvements Tomorrow

TODAY'S TRAITS

Roundup Ready®
Vistive™ low-linolenic

TOMORROW'S POTENTIAL TRAITS

Roundup RReady2Yield™
Dicamba Tolerance
Vistive III
Omega-3
Soybean Cyst Nematode
Higher Yielding
Insect Control



Today's traits will be supplemented by tomorrow's, delivering a "total package."

Delivering Increased Yield in Soybeans

Two Pipeline Traits That May Deliver a Powerful One-Two Yield Punch



2006 trials averaged 3 to 5 bushels more than experimental lines of Roundup Ready® soybeans in same developmental phase



Monsanto's Higher Yielding Soybeans

In multiple seasons of field testing, Monsanto's Higher-Yielding Soybeans averaged more than four bushels an acre more than the control, in head-to-head tests of similar varieties.



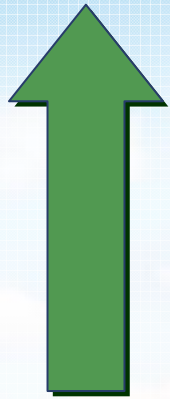
COMBINED,
THESE TRAITS
FIELD A
1000 acres
POTENTIAL 15%
~42,700 bu.
TO 20% YIELD
ADVANTAGE IN

SOME AREAS,
WHICH CAN
ALLOW MORE
FIELD B
800 acres
SOYBEAN
PRODUCTION
ON FEWER
~40,500-
42,700 bu.
ACRES

BIOTECHNOLOGY CAN DELIVER MORE PRODUCTIVITY PER ACRE

Biotech Crops Bringing Benefits to Agriculture, Growers and the Environment

The Global Impact of Biotechnology 1996 - 2006



Productivity

- Increased by 30M acres in the U.S. from 2005 to 2006
- \$6.2B global value of biotech crops in 2006



Economic Return

- Global accumulated impact of biotech crops since 1996 is estimated at \$35.5 billion

Biofuels: Research indicates biofuels initiatives could result in a net savings of 65% in energy resource depletion.

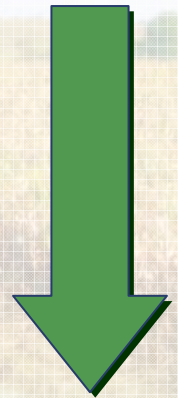
Pesticide Reduction

224,000 Tons, 15% reduction



Greenhouse Gas Emissions

Reduced >11B Kg Carbon Dioxide Emission
Equal to removing 6 M cars from the road for a year



Source: Graham Brooks, 2006, www.agbioforum.org ; NCFAP report, 2006; Ford Runge & Barry Ryan 2005

Pesticides registered by the U.S. Environmental Protection Agency will not cause unreasonable adverse effects to man or the environment when used in accordance with label directions.

Summary

■ Breeding

- Molecular breeding has increased the rate of genetic yield gain by a factor of between two and three.

■ Traits

- Innovative traits are helping to drive yield increases and yield stability.

■ Compositional Improvements

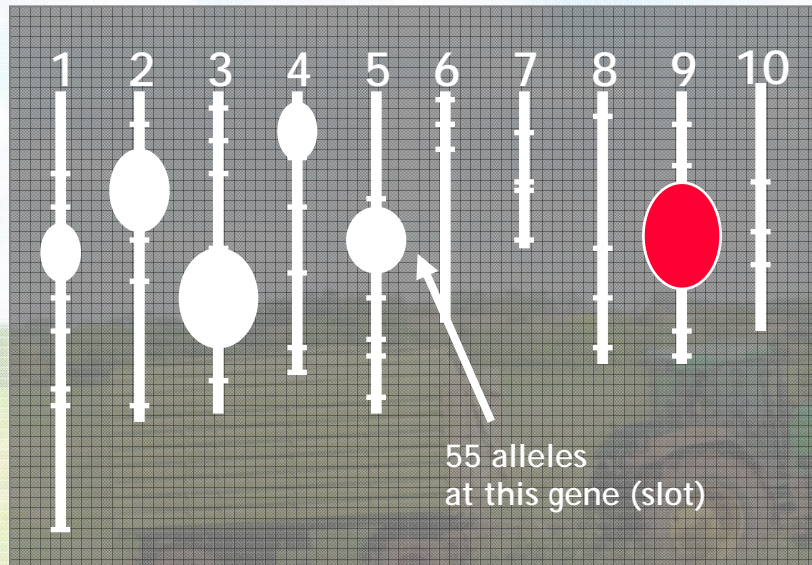
- Improvements to grain composition and processing can contribute to increased ethanol production and higher-value co-products.

**Technology Is Raising the Bar Significantly on
Future Yield Potential**

Getting the Best Genetic Combination is a Numbers Game

Step-Changes in Grain Potential

Ten Chromosomes of Corn



Lottery

- 5 white balls selected from a set numbered 1-55
- 1 red ball selected from a set numbered 1-42
- Probability of matching the 6 numbers is ~1 in 146 million

Genetic Combinations

- Slots (1 red and 5 white balls) equal genes
- The different numbers on the balls are different alleles (variant) at each gene
- Probability of getting the "best" (match) 6 numbers is ~1 in 146 million

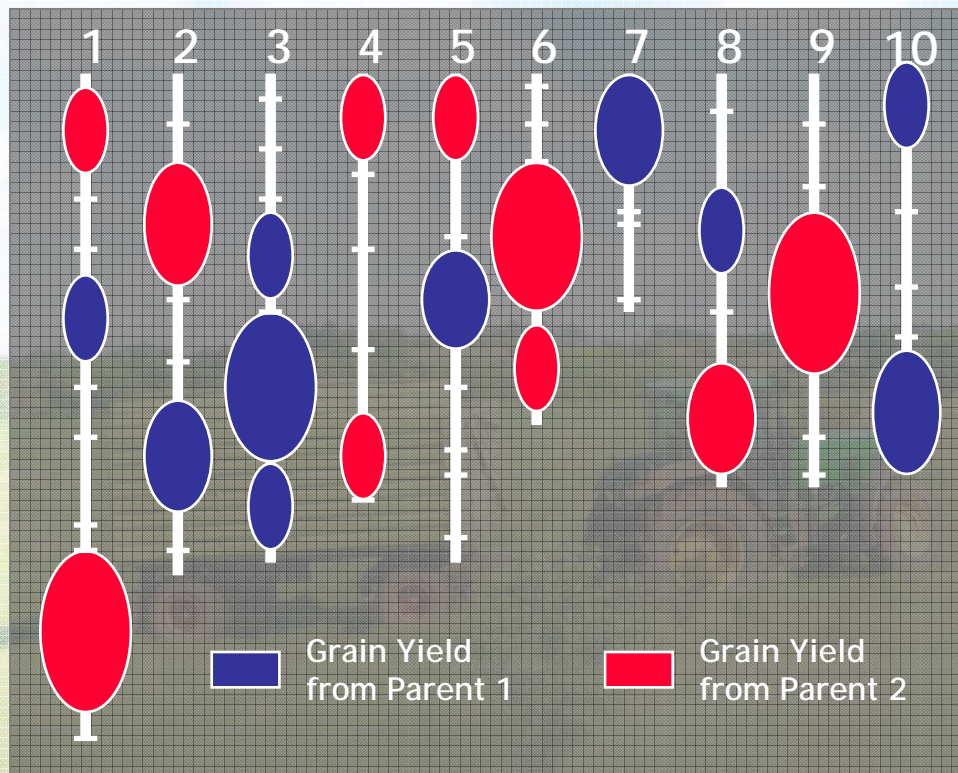
Getting the Best Plant Product is Much Harder

- Corn as tens of thousands of genes (slots)
- Monsanto's elite global germplasm pool has lots of genetic variation (alleles)
- With just 20 genes and 2 alleles, the probability is ~1 in 1 trillion of getting the "best" plant

Monsanto is Changing the Numbers Game in Plant Breeding

Step-Changes in Grain Potential

Use Molecular Markers to Identify Which "Ball" We Want to Pick



With a Few Selection Cycles, We Can Quickly Improve Probability of Success

| Cycle | Frequency of Best Genotype |
|-------|----------------------------|
| 0 | 1 Per Trillion |
| 1 | 5 Per Billion |
| 2 | 1 Per 5,000 |
| 3 | 1 in 5 |