






Investing to Deliver the Varieties That Farmers and Growers Need

UPOV Symposium on the Benefits of Plant Variety Protection
for Farmers and Growers
Stephen Smith
DuPont Pioneer
Geneva, November 2, 2012



Outline

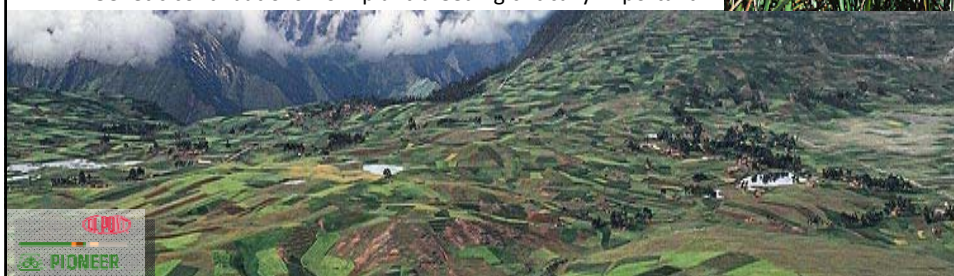
- **Need for More Productivity on Farms**
- **Genetic Plant Breeding Solutions**
 - Investments
 - Intellectual Property Protection
- **Global View of DuPont Pioneer**
- **Integrated Approach to Satisfying Farmer-Customer Needs**
 - Identifying the Needs of Farmer-Customers
 - Translating Farmer-Customer Needs to Breeding Goals
 - Evaluating New Potential Varieties
 - Quality Seed Production
 - Testing, Testing, Testing
 - Continual Learning About Farmer-Customer Needs and Product Performance
- **Conclusions, Q&A, Discussion**



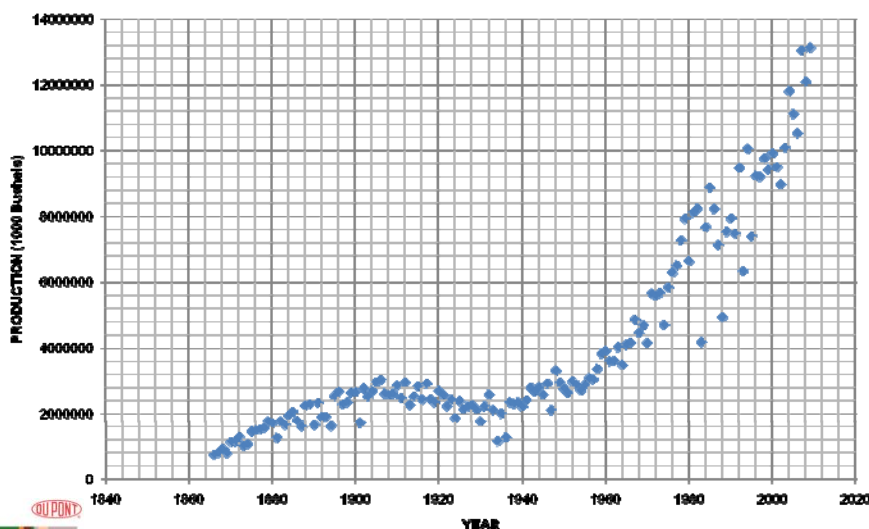

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In the Next 50 Years

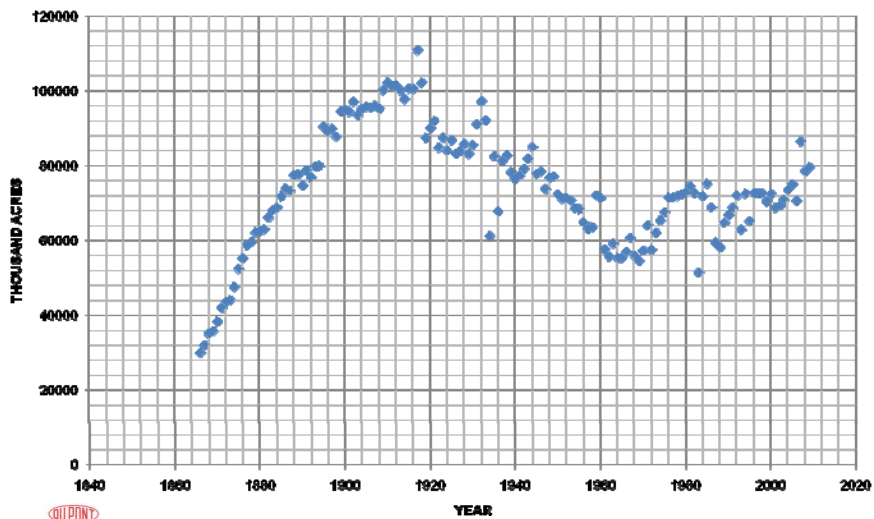
- World population will double
- 2-3X increase in food production needed
- Reduce soil and ecosystem degradation
- Maximise effective use of available water and minimise contamination of natural waters
- Decrease net CO₂ emissions and other greenhouse gases
- Sustainable increase in agricultural productivity essential
- Genetic contributions from plant breeding critically important



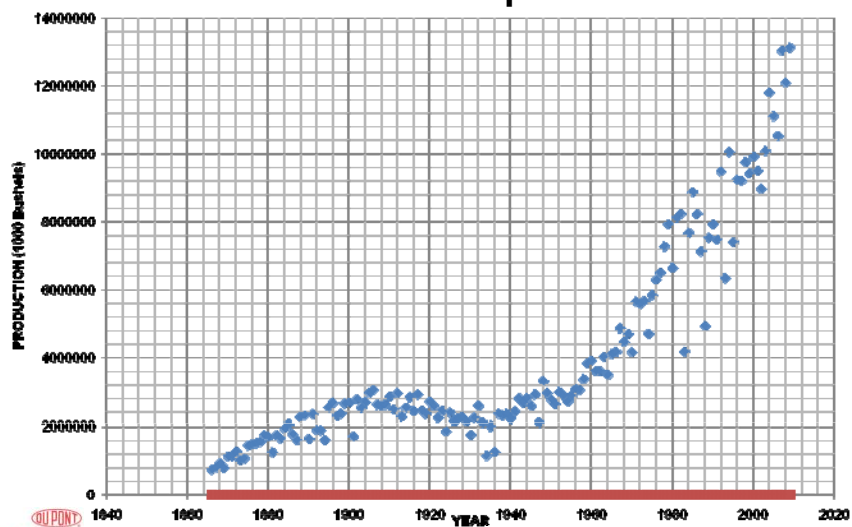
US Maize Production (1865 – Present)

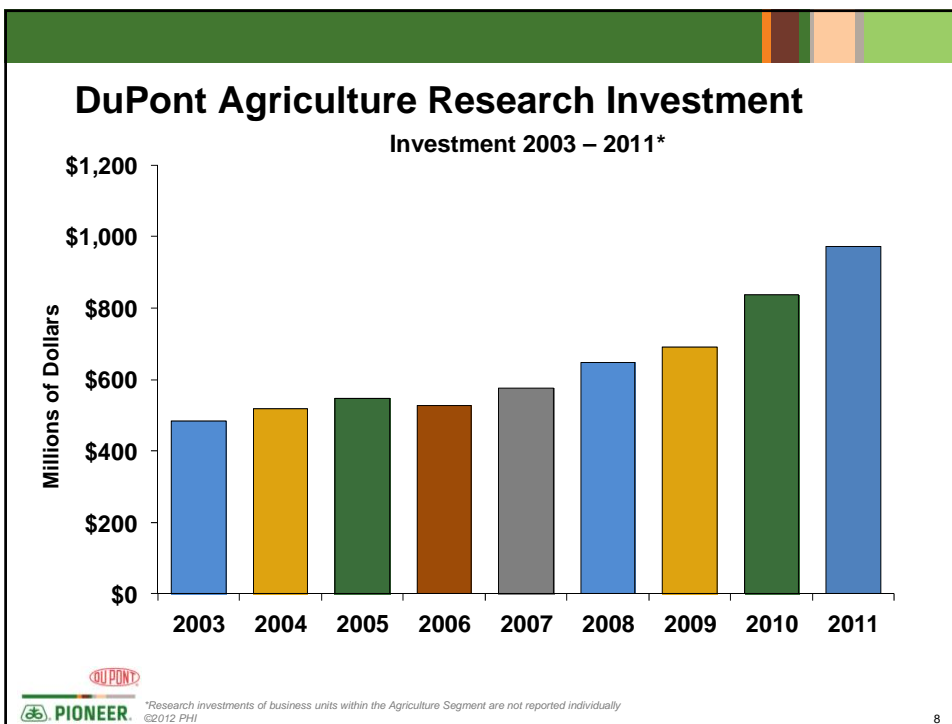
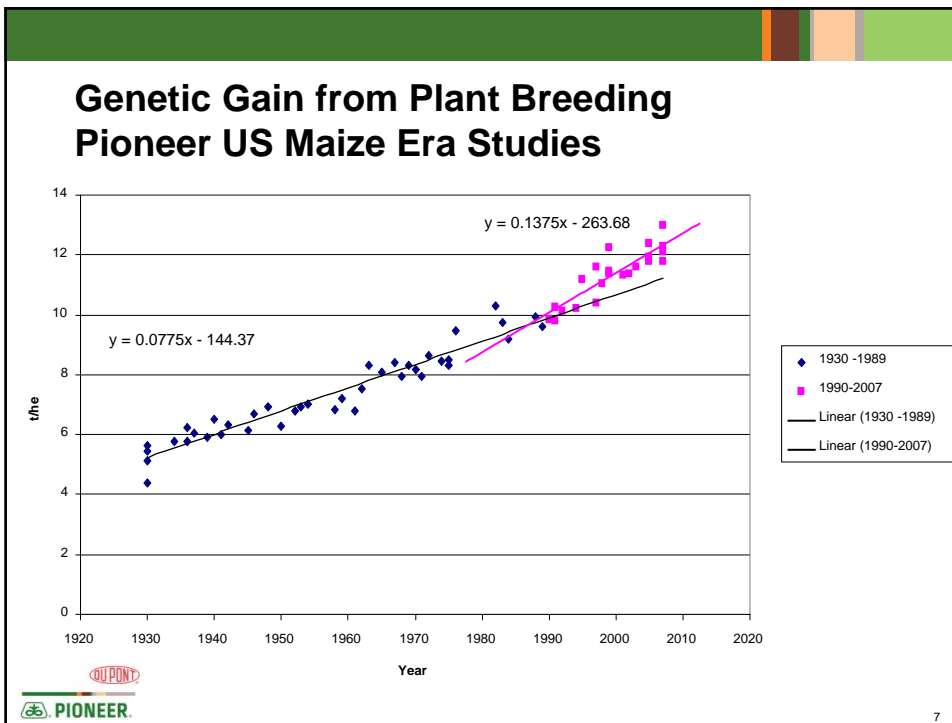


US Maize Production (1865 – Present) Due to area cultivated?



US Maize Yields (1865 – Present) Due to Genetic Gain and Improved Cultivation!





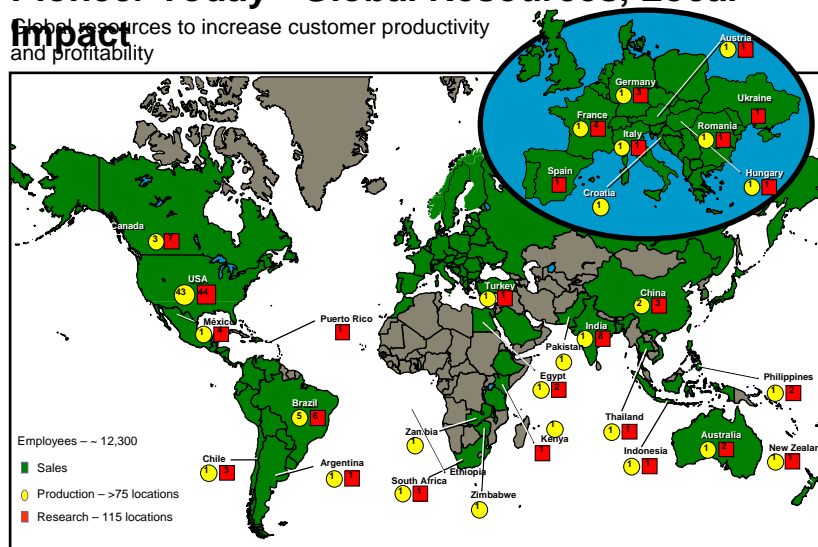
Intellectual Property Protection

- **PVP**
 - Available globally
 - Essential level of protection
 - UPOV 91 balances multi-trait breeding with more specific trait improvement
- **Patents**
 - Essential to encourage longer-term, higher-risk R&PD
 - For example:
 - Develop transgenics
 - Introduce genetic diversity from initially unadapted sources
- **Trade Secrets**
- **Contracts**



Pioneer Today - Global Resources, Local Impact

Global resources to increase customer productivity and profitability



A Huge Diversity of Farmer-Customers



The Goal: Very Satisfied Customers



Know Your Customers' Environment. Know Your Product. Right Product, Right Acre.

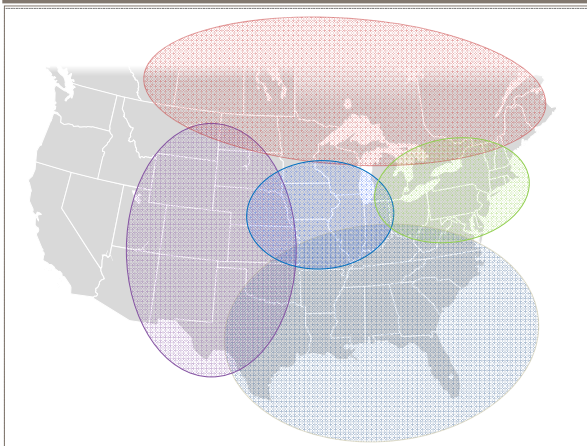


Product Evaluation Zones – Corn

Local issues drive our local product development

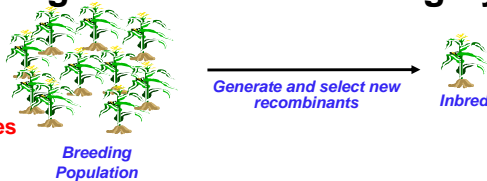
Native Traits in the N.A. Portfolio
Drought Tolerance
Gray Leaf Spot
Northern Leaf Blight
Goss's Wilt
Root Strength
Brittle Stalk
Head Smut
Ear Molds (Fusarium, Gibberella, Diplodia)
Rusts (Common/Southern)

Breeding and native trait development targeted through local evaluation zones



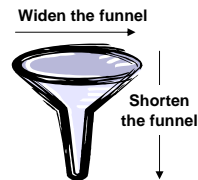
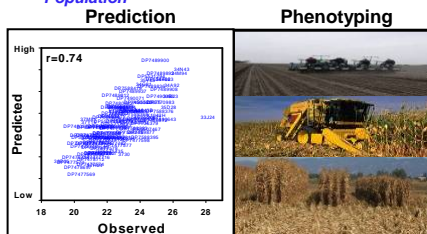
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Pioneer Integrated Maize Breeding System



Enabling Technologies

- Genotyping**
- IM Systems**
- Doubled Haploids**

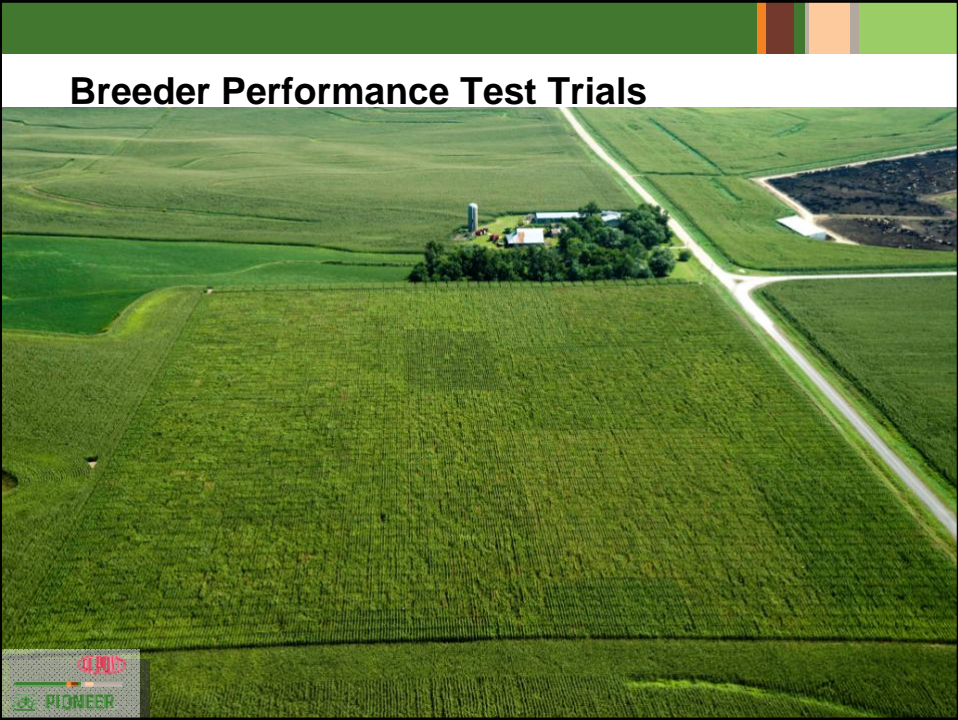


Better Hybrids – Quicker!

Goal: Increase the size of the Pioneer breeding program 10X over the next 5 years.



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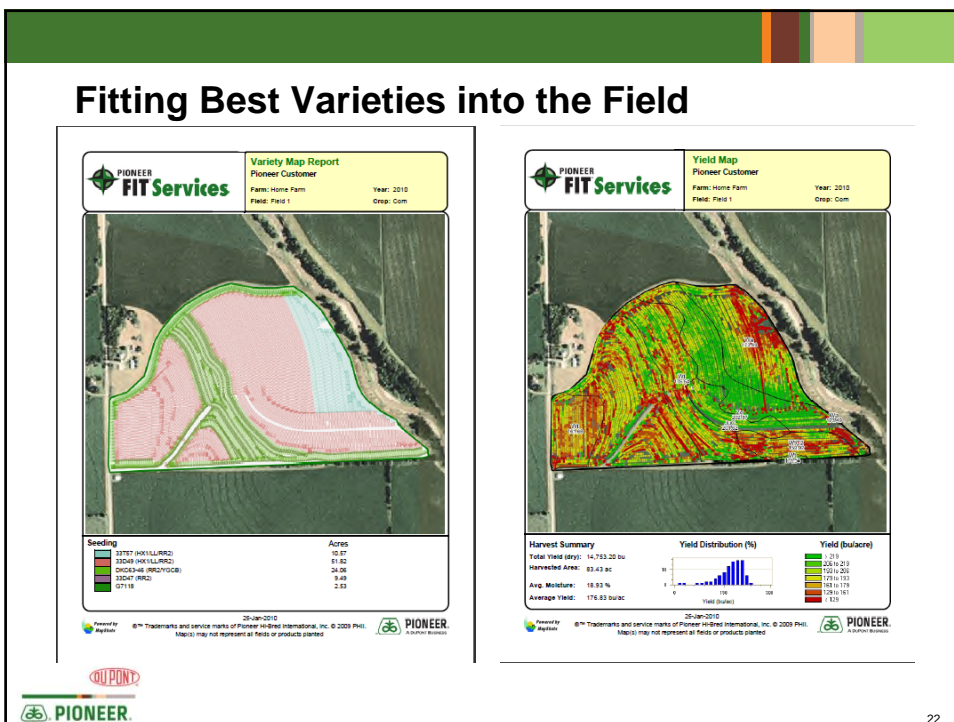
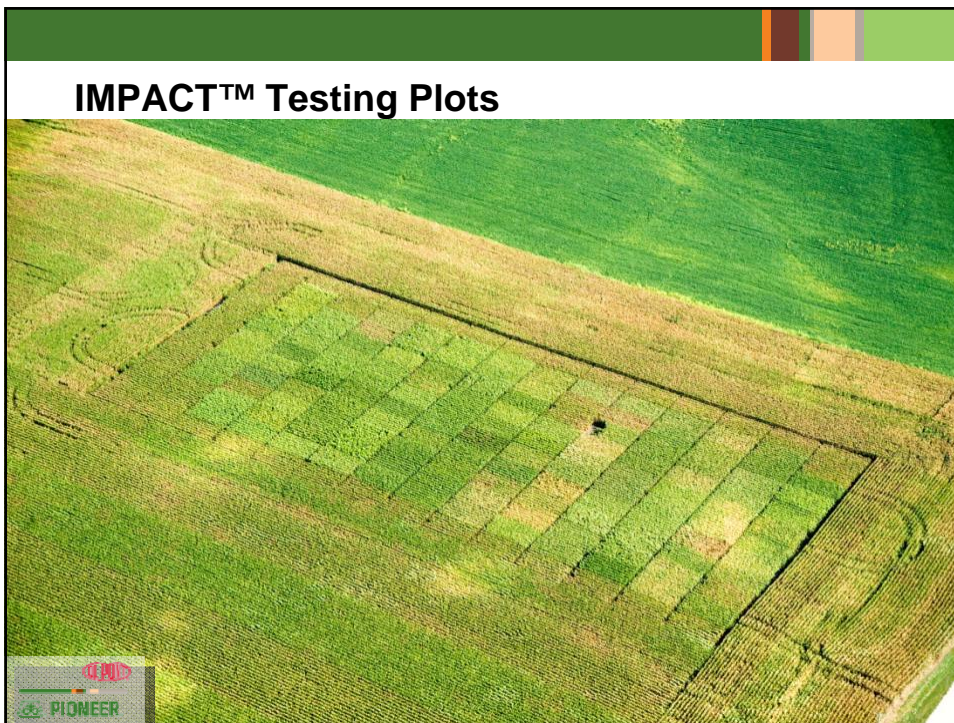


Customers Learning About Products: Viewing



Meeting with Customers on Their Farms





Variable Rate Seeding, Fertiliser Placement

BottomLINE

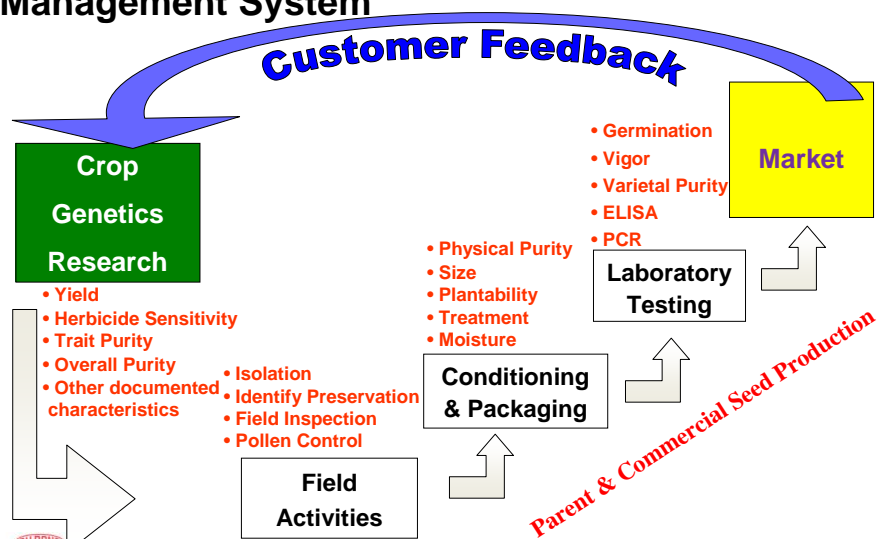
Pioneer's partnership with growers is centered on our customers achieving their business goals. Both parties can benefit from understanding and applying VRS as a strategy to achieve optimal profitability, acre by acre.



Developed in partnership between:
Pioneer Hi-Bred and Dr. Matt Darr at Iowa State Univ.



Top Quality Seed Production and Delivery Management System

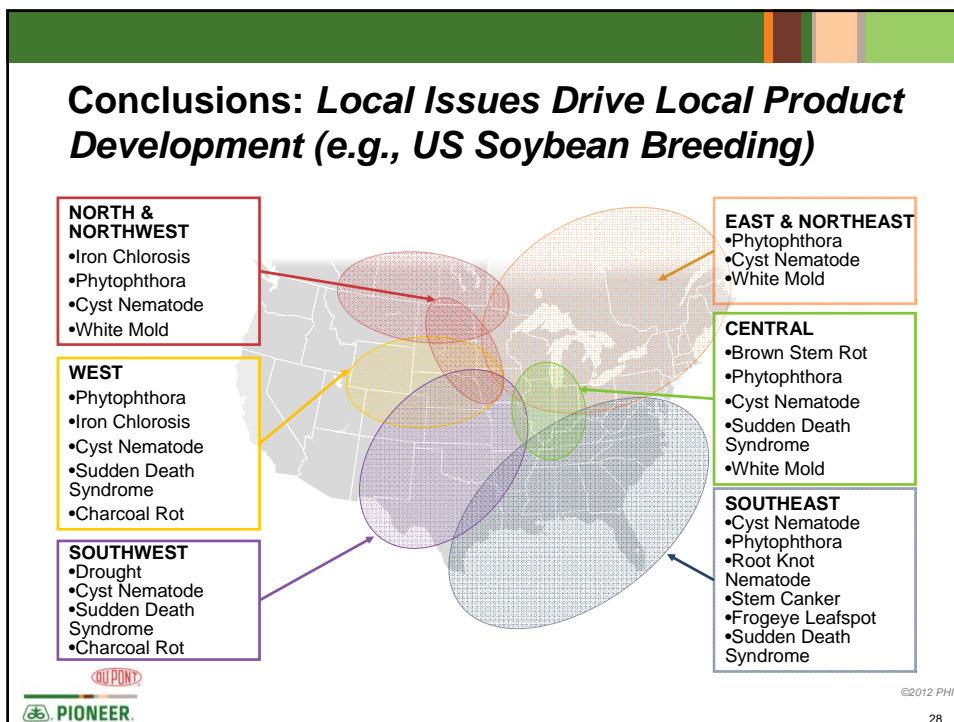
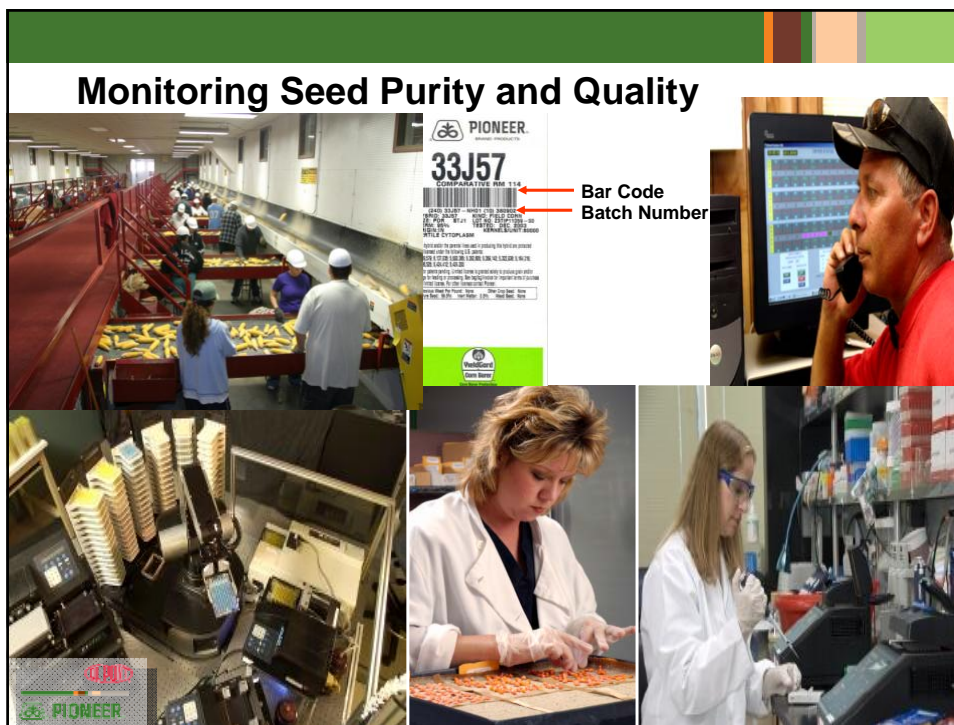


Hybrid Seed Production



Hybrid Seed Corn "Plants"





Conclusions: One Research Team

- Know the agronomic situation and needs of the farmer-customer
- Translate those needs into goals for the breeder
- Conduct most efficient and effective plant breeding
 - Well characterised genetic diversity, improved selection via genotyping and phenotyping
 - Rigorous testing of genetic basis of agronomics
- Performance trials on-farms key to determine if go commercial
- Excellence in seed production quality
- Excellence in agronomic advice services to farmer-customers
- Broad array of different commercial products
- Continuous feedback from farmer on variety performance
- Sales-Marketing-Breeders-Agronomists-Seed Production ONE TEAM
- And ONE TEAM with the farmer-customer



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A Team Approach



Questions/Comments?



THANK YOU!

