

# Pioneer Technology Update

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# Overview

- AYT™ System (Accelerated Yield Technology)
- Optimum® GAT® Herbicide Tolerance



# **First Yield Screen: Progeny Row Yield Test**

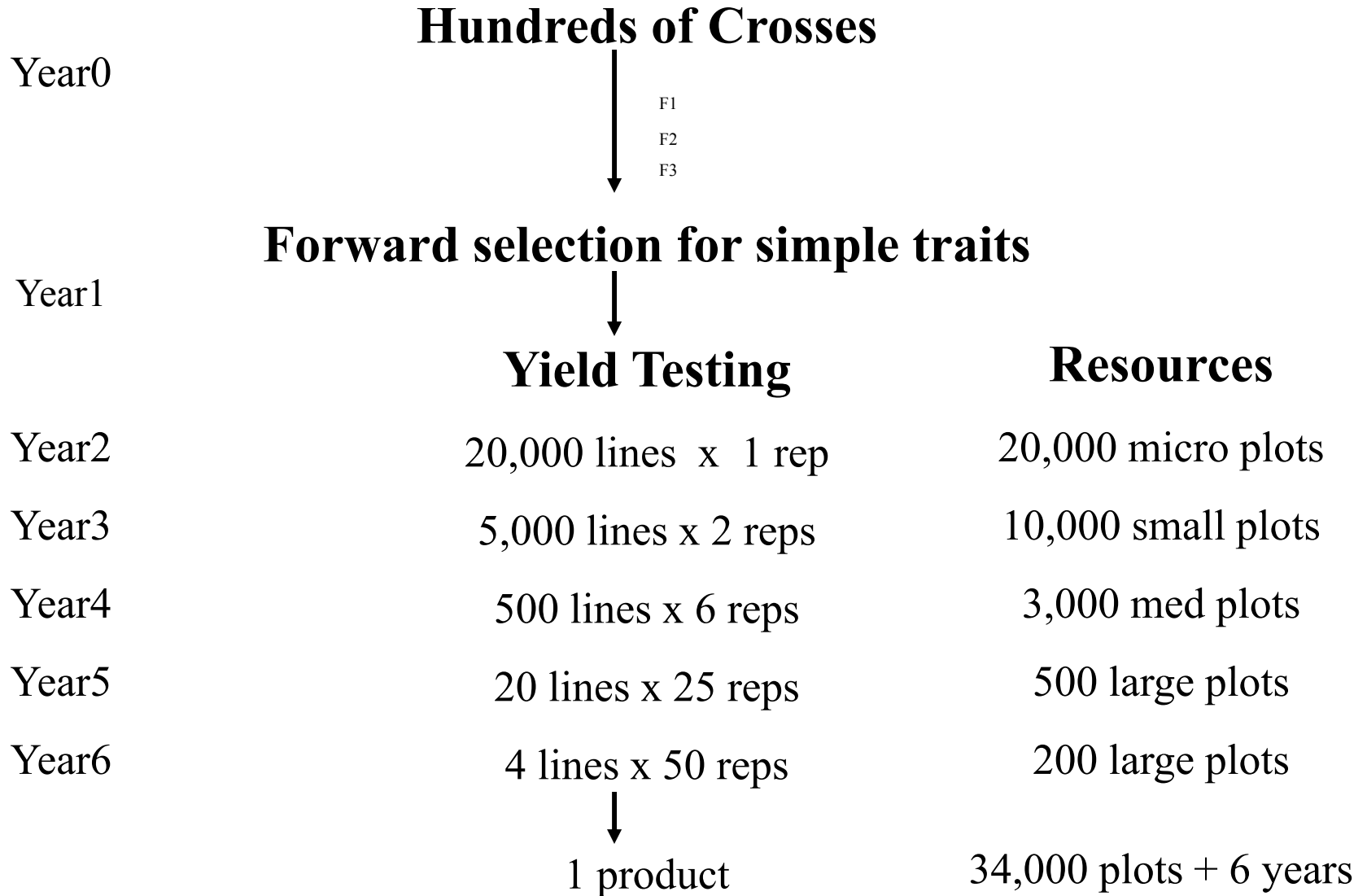
**~ 85% of plot-to-plot variation is not heritable**



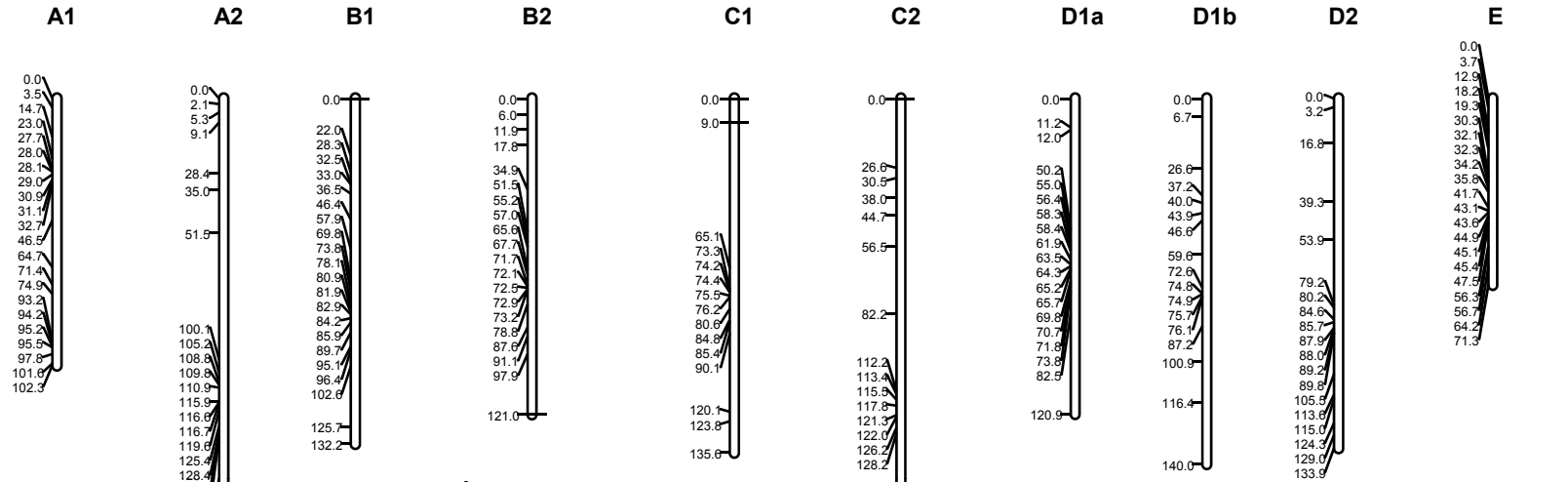
# Environmental variation: the Breeder's Nemesis



# Product Development without AYT

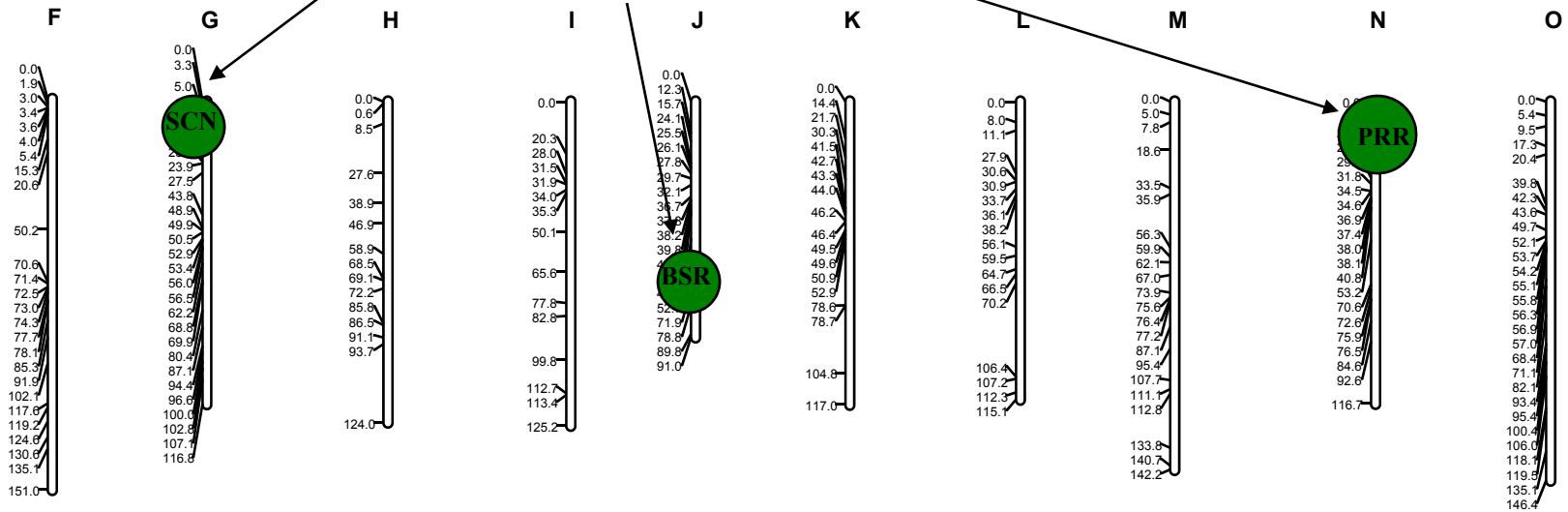


# Genetic Map of 20 Soybean Chromosomes

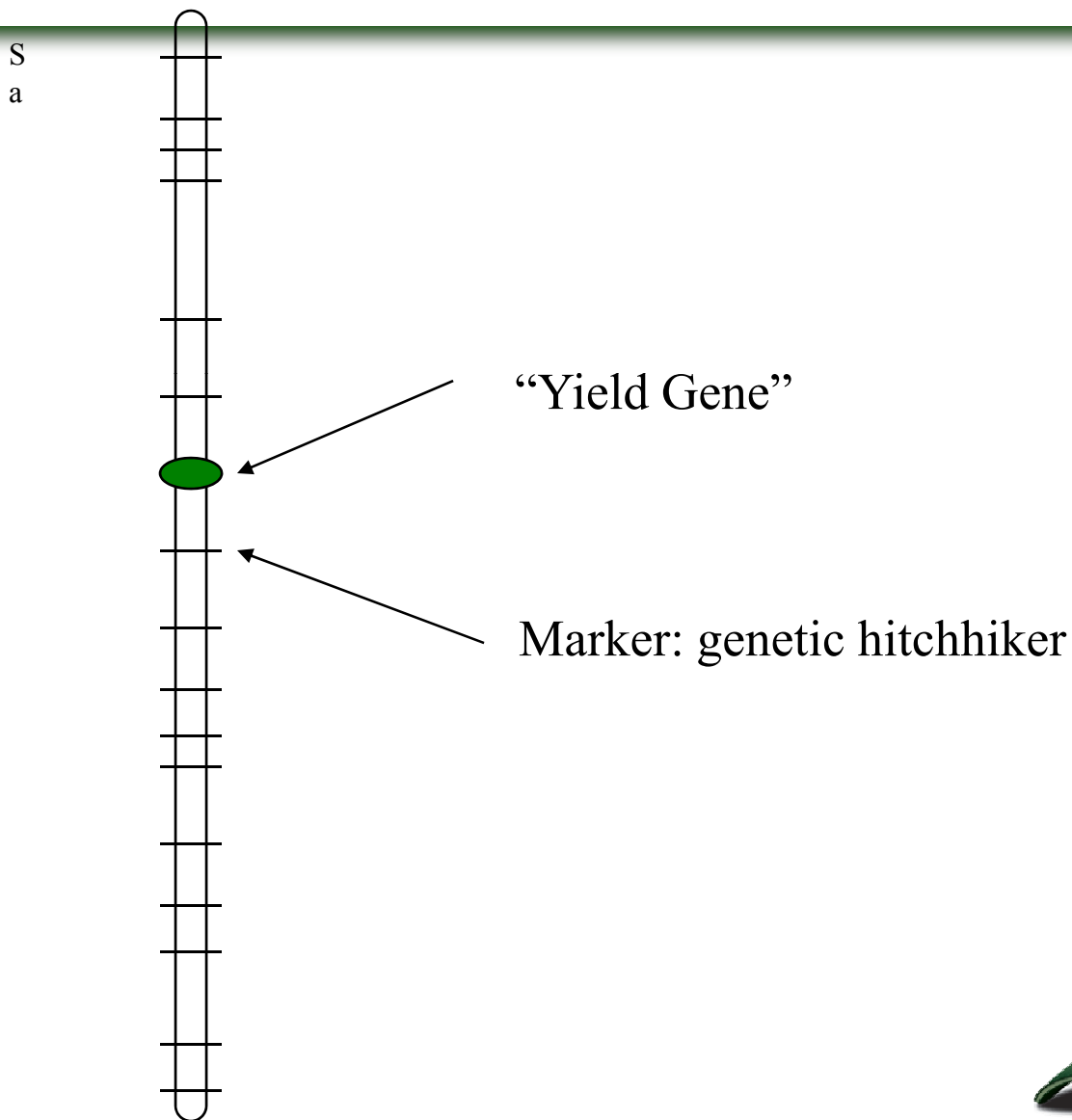


Disease genes

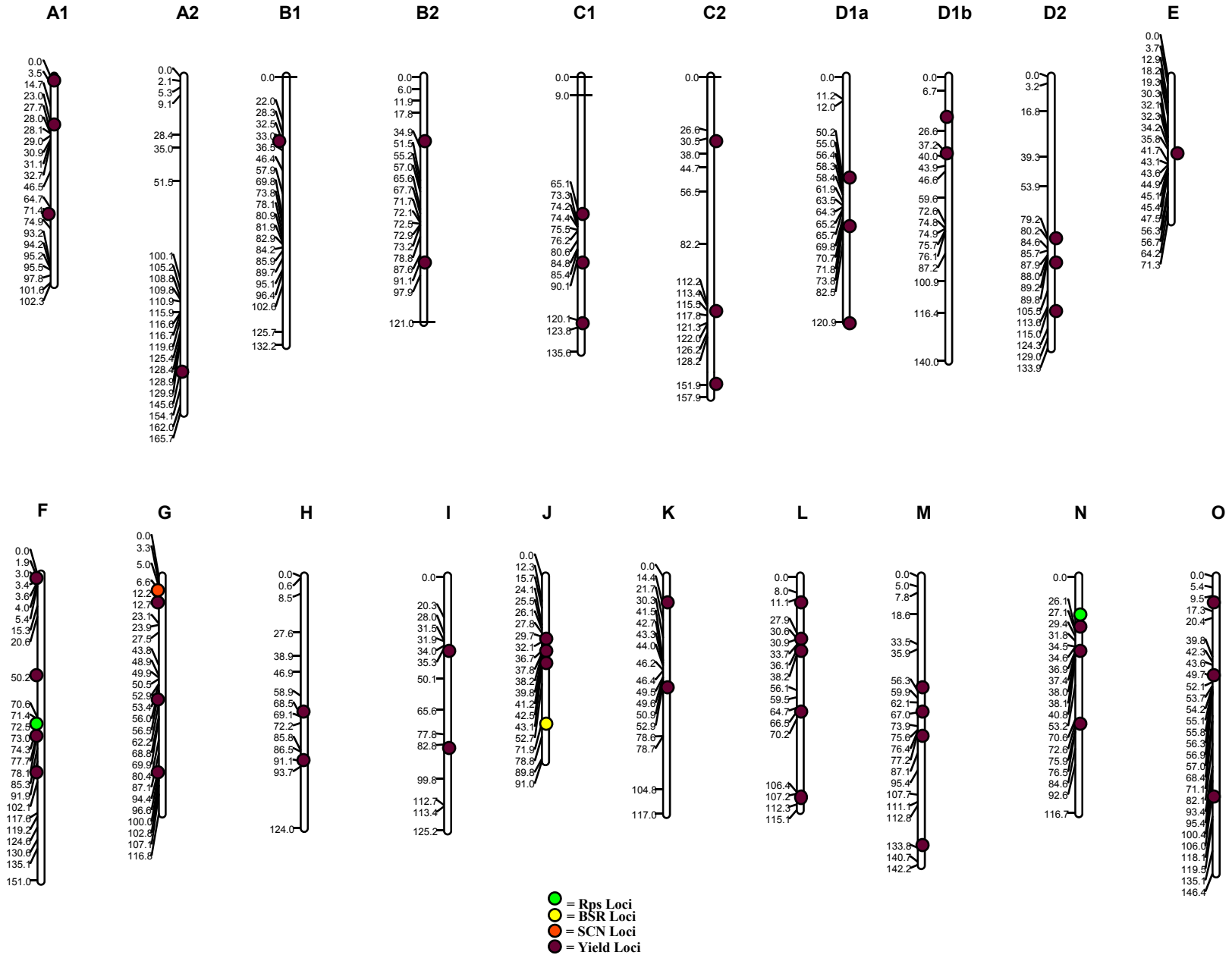
'additive' genes = predictable effect



# Applying marker technology to “Yield Genes”



# Yield Gene Hot Spots



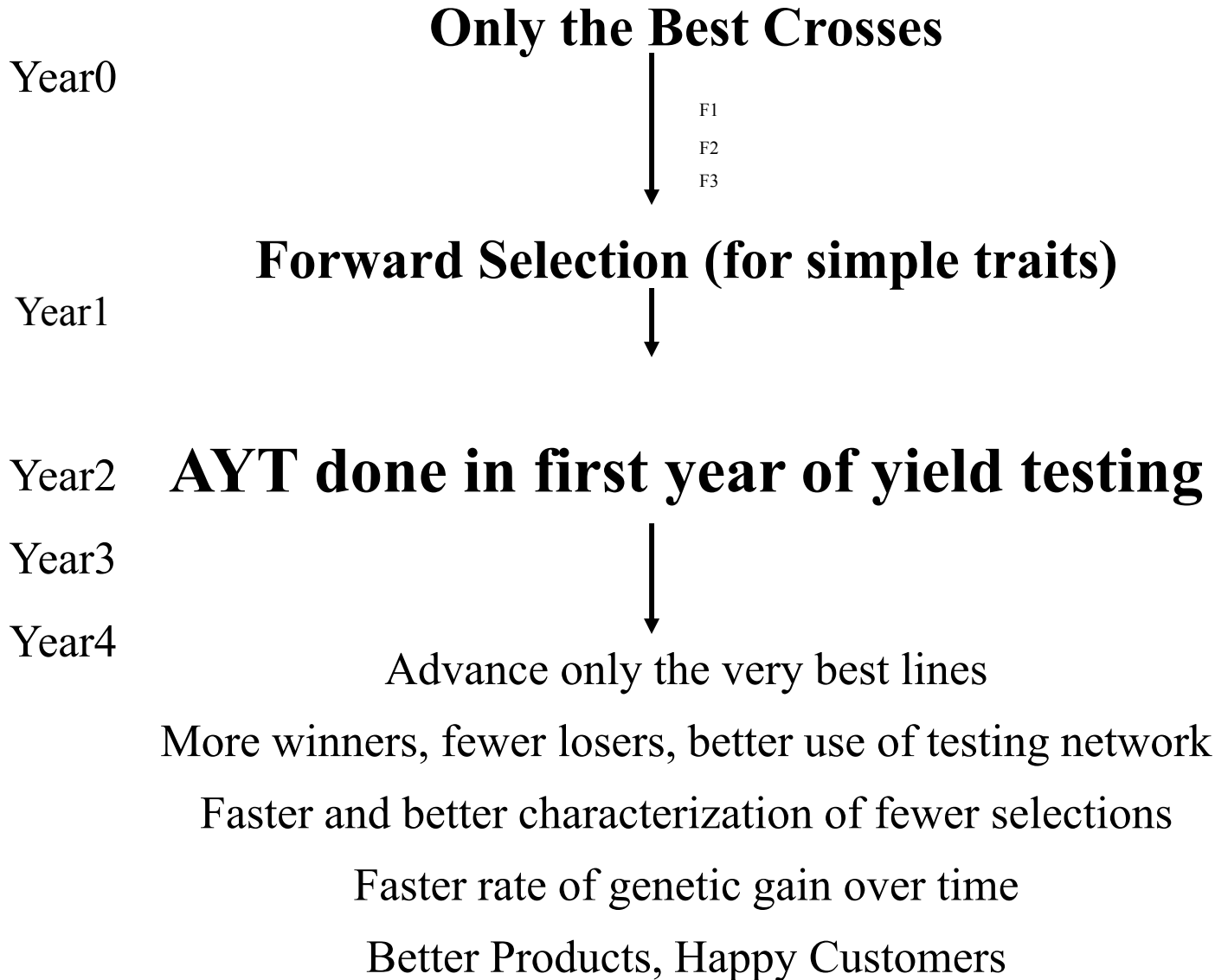
# AYT: markers as 'heritable covariates'



**Select winners by Target Genotype**



# Product Development with AYT



# 2008 Y Series Yields in Southern

- **Y Series vs. non Y Series Pioneer varieties**
  - 969 comparisons
  - Y Series varieties won 67% of comparisons
  - Average of 3.2% yield advantage
- **Launching 6 new Y Series varieties in 2009**
  - Two 39 RM
  - 48 RM
  - 49 RM
  - 50 RM
  - 53 RM

As of Nov 8 2008

All comparisons with 3 RM & 12 strips





More Flexibility. Maximized Results.

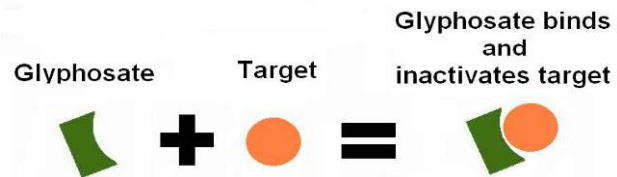
Products with the Optimum® GAT® Trait will be available for sale pending regulatory approvals.



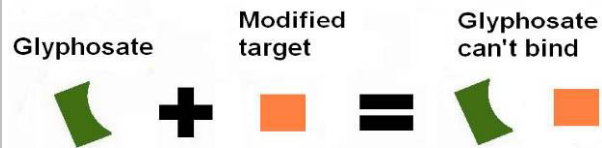
# Maximizing Yields with Breakthrough Technologies

- Proprietary technology results in unique way of achieving glyphosate crop safety:

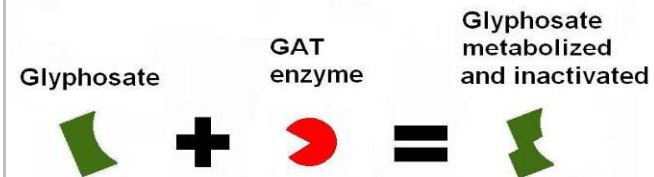
## Non-Glyphosate Tolerant Crop



## Roundup Ready® Crop



## Optimum® GAT® Crop



- High yielding products utilizing innovative technologies:

- Corn with diverse genetics stacked with leading traits like Herculex® technology
- Soybeans backed by strength of Pioneer breeding and Accelerated Yield Technology (AYT™)
- Yield protected with better weed control options

# Optimum® GAT® Trait

## Glyphosate ALS Tolerance

Pioneer® brand corn and soybean seed with the innovative Optimum® GAT® trait enables the most flexible herbicide programs on the market:

- Maximizing yields with breakthrough technologies
- Achieving broader-spectrum weed control without compromising crop safety
- Getting the most from your trait investment



Optimum® GAT® Enabled Herbicides



Glyphosate Alone

## More Flexibility. Maximized Results.



# Uncompromised Crop Safety

## Optimum® GAT® Enabled Herbicides



Optimum®  
GAT® Corn

Non-  
Optimum®  
GAT® Corn



Optimum®  
GAT®  
Soybeans

Non-  
Optimum®  
GAT®  
Soybeans

# Herbicides Designed for Optimum® GAT® Trait

## DuPont™ Instigate™ (corn) & Diligent™ (soybean)

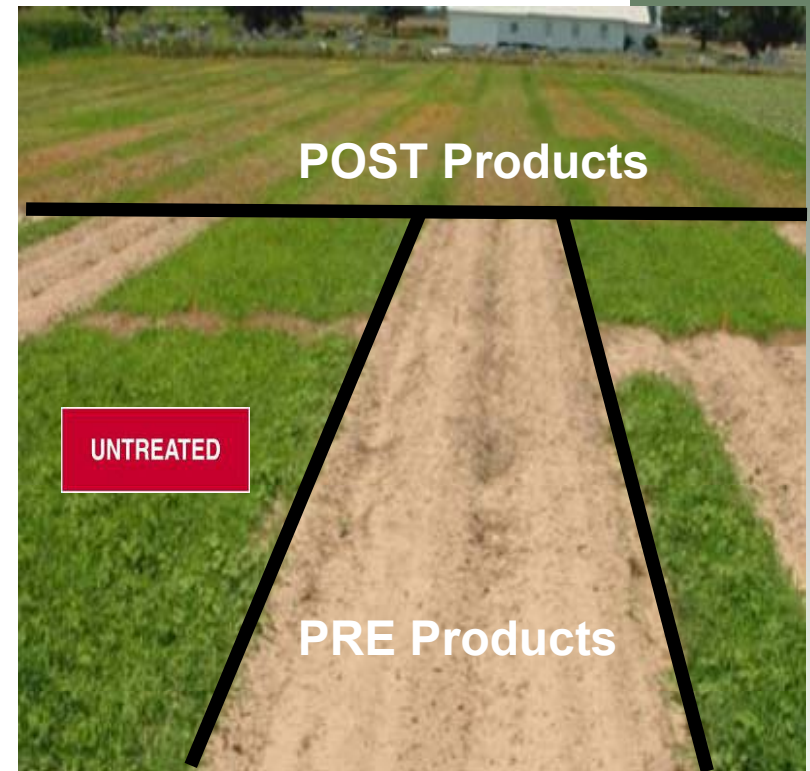
### Post + residual herbicides

- Manage tough weeds
- Enable multiple modes of action for “built-in” resistance management
- Provide contact plus residual

## DuPont™ Traverse™ and Freestyle™ herbicides

### Pre / post w/ longer residual

- Expand application timing
- Maximize crop rotation flexibility
- Deliver uncompromised crop safety



Herbicide Product Development Trials  
No Crop Planted  
England, Arkansas; June, 2007



The miracles of science™

# **Optimum® GAT® launch in Southern BU**

## **In Southern Bred genetics**

- **Corn & Soybean field trials in 2009**
- **Limited launch in Southern corn genetics in 2010**
- **Extensive field trials in 2010**
- **Full launch of corn and soybean in 2011**



**Thank you**

