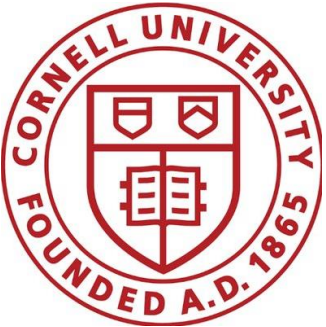




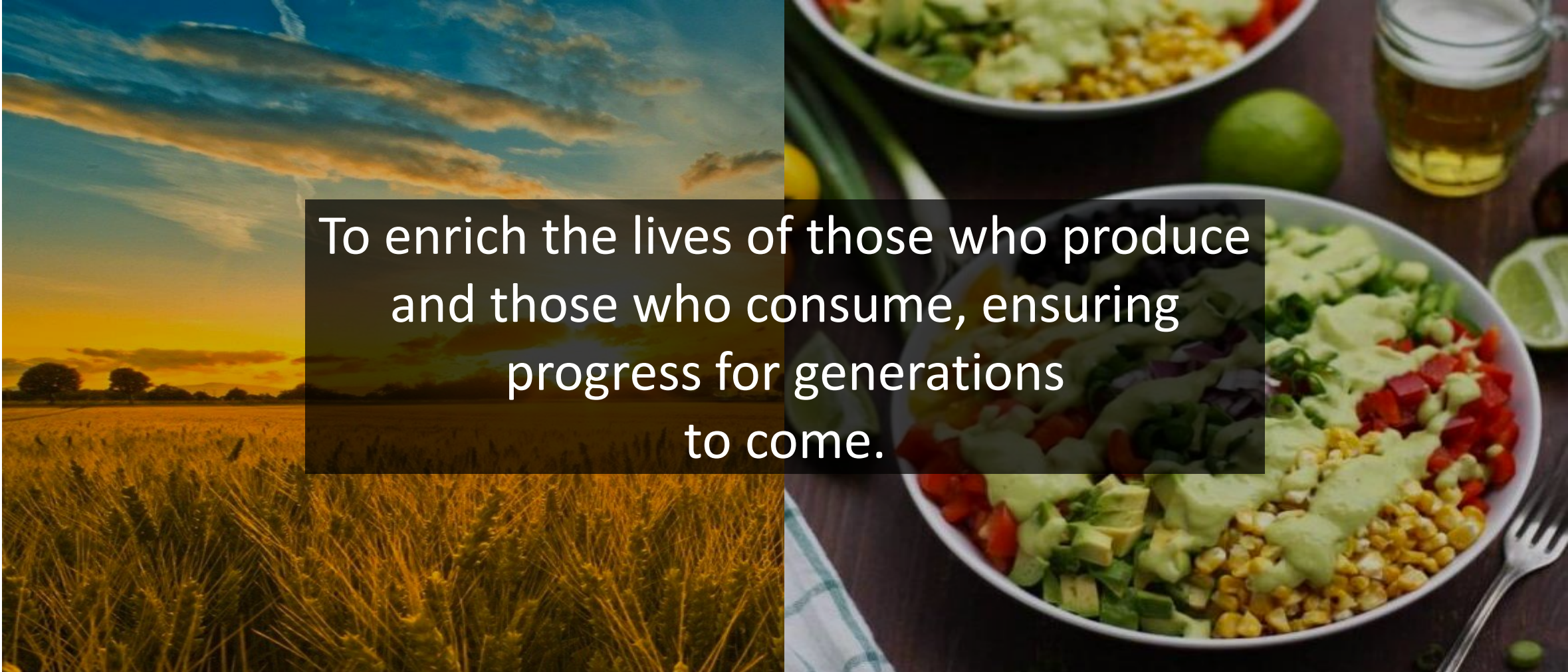
# Commercial Breeding Pipelines at Corteva™

Emily Ziemke, Dave Bubeck, Dean Podlich, other colleagues at Corteva™

# About Me



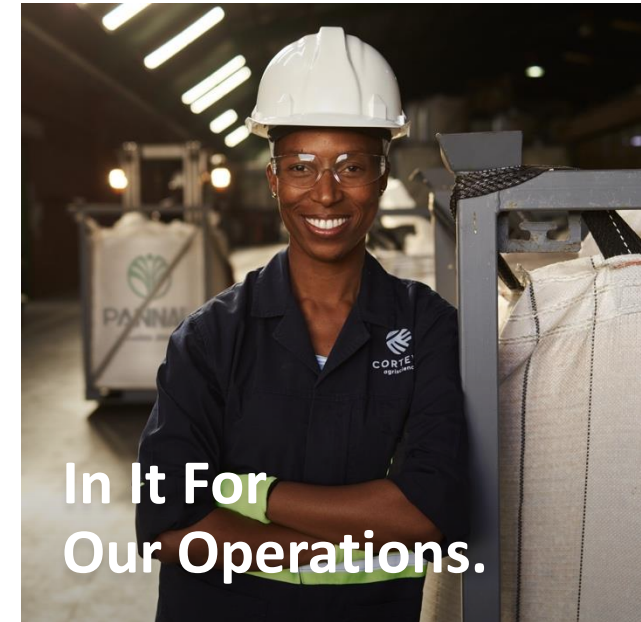
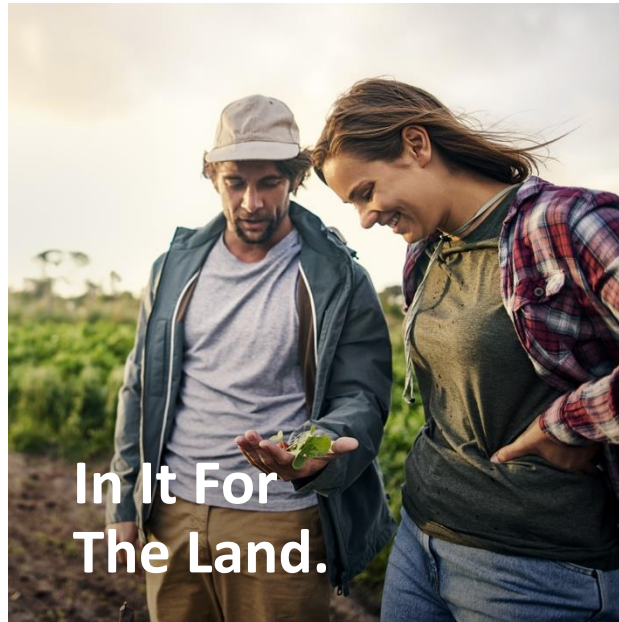
# About Corteva™ Agriscience



To enrich the lives of those who produce  
and those who consume, ensuring  
progress for generations  
to come.

# Our 2030 Commitments to Sustainability

Learn more at [sustainability.corteva.com](https://sustainability.corteva.com)



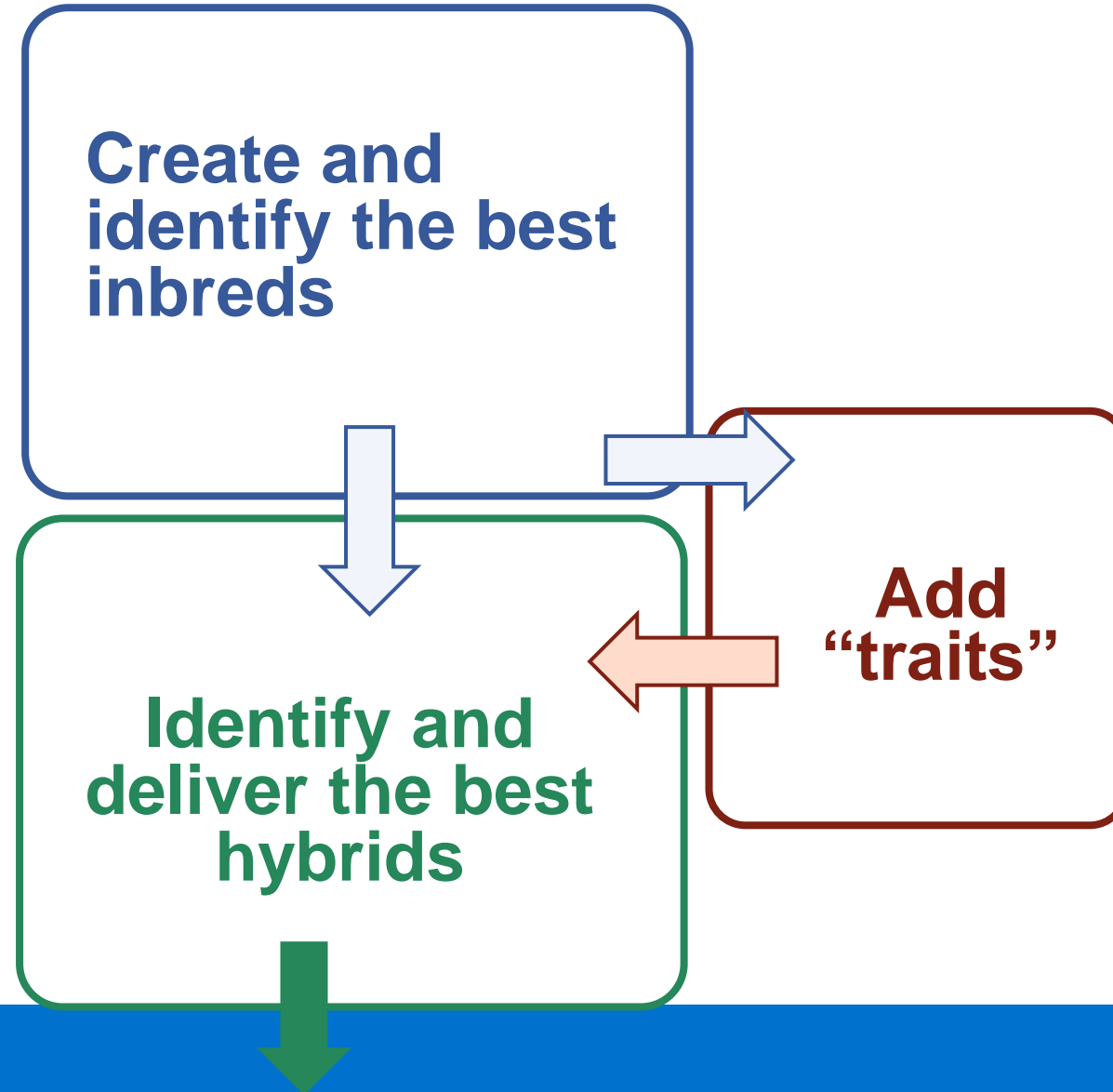
- Provide training to 25 million farmers
- Enrich the lives of 500 million smallholder farmers
- Decrease greenhouse gas emissions while increasing yields

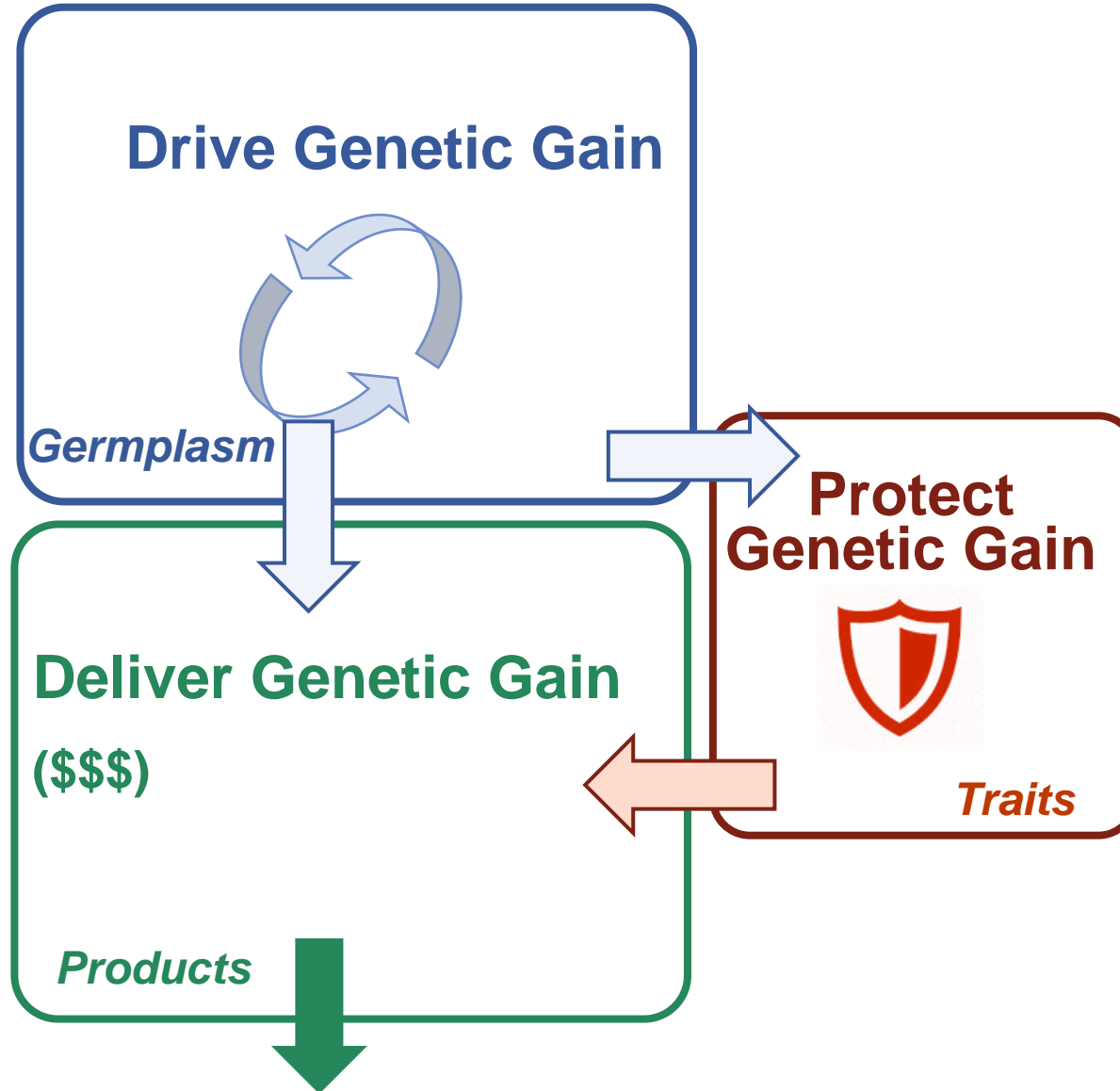
- Improve soil health on 30 million hectares
- Advance water stewardship
- Enhance biodiversity on 10 million hectares

- Keep employees safe
- Empower women, enable youth, and engage communities
- Volunteer 1 million hours
- Increase supply chain transparency

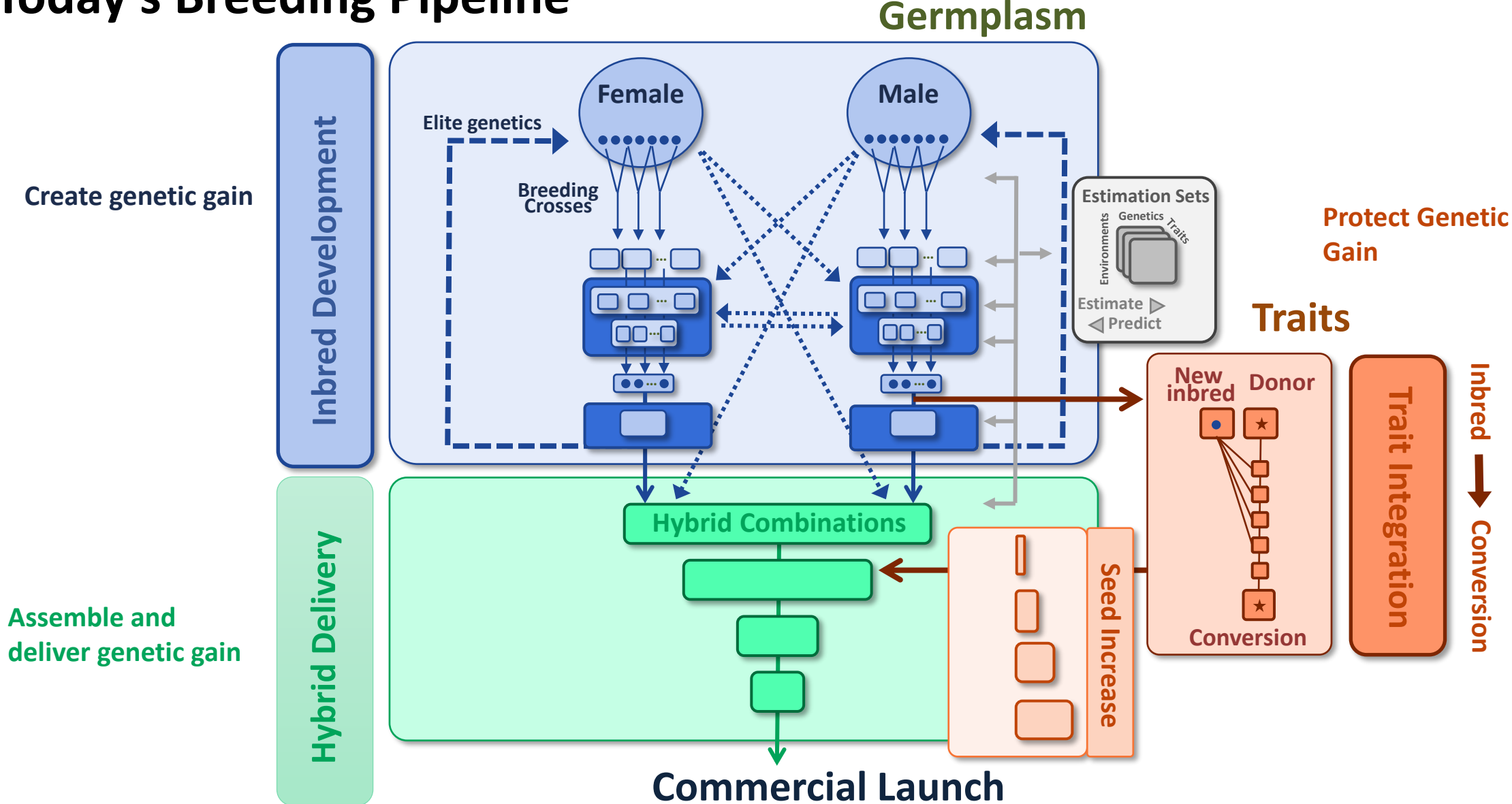
- Require sustainability criteria for new products
- Manage our greenhouse gas emissions
- Use only sustainable packaging
- Increase our sustainability efforts

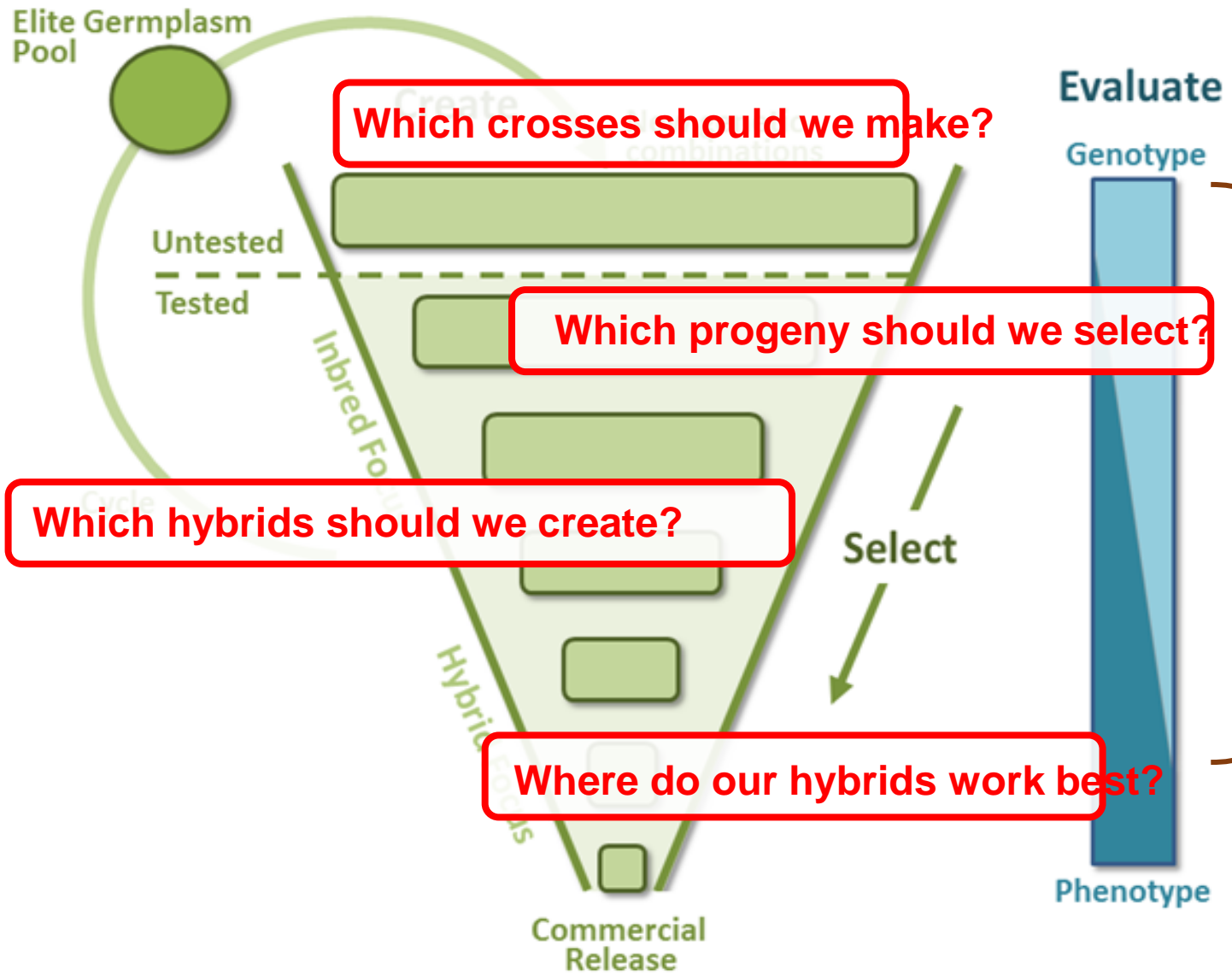
# End-to-End Breeding Pipeline





# Today's Breeding Pipeline





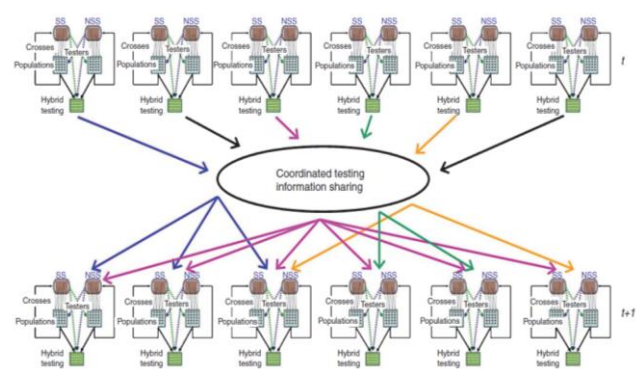
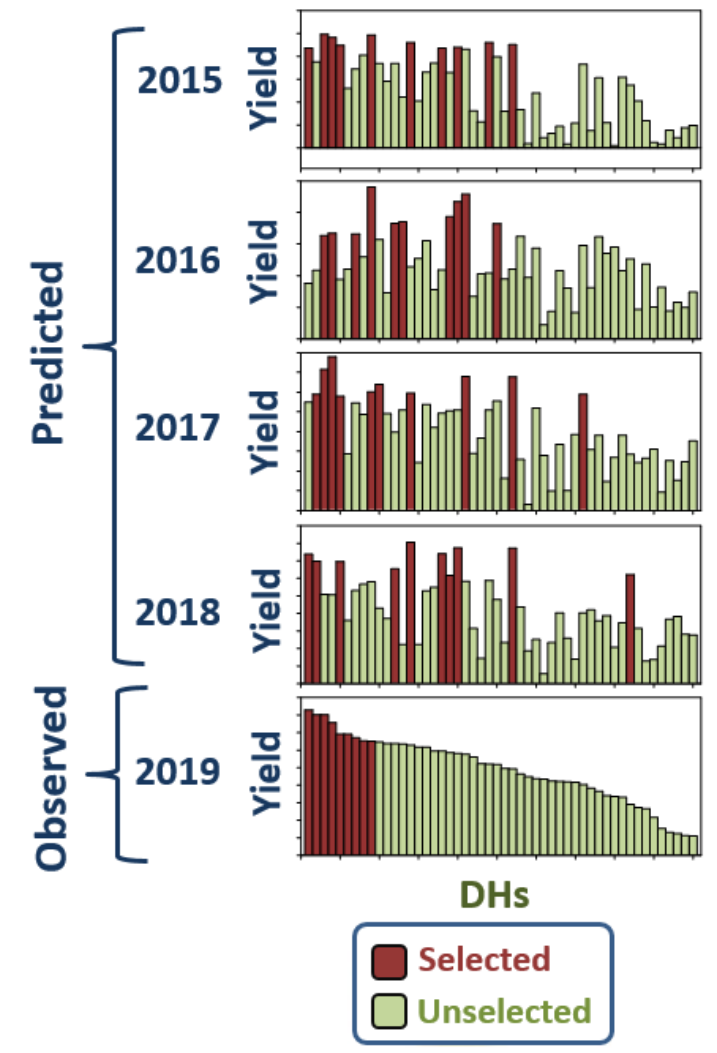
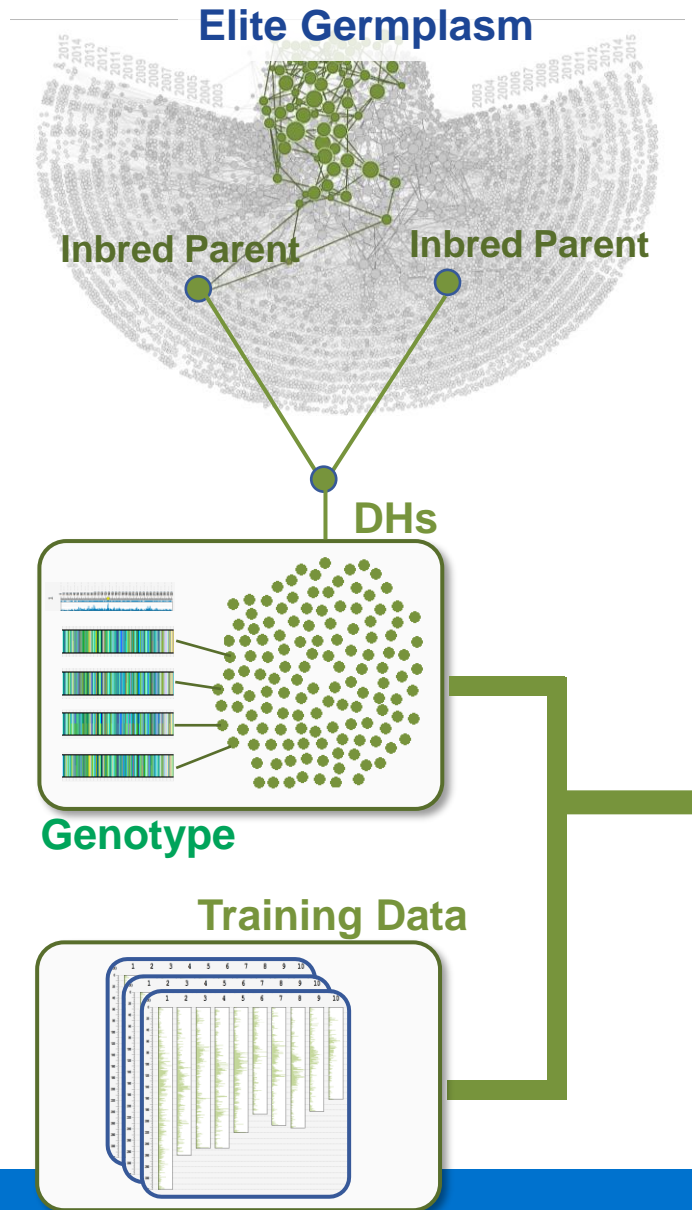
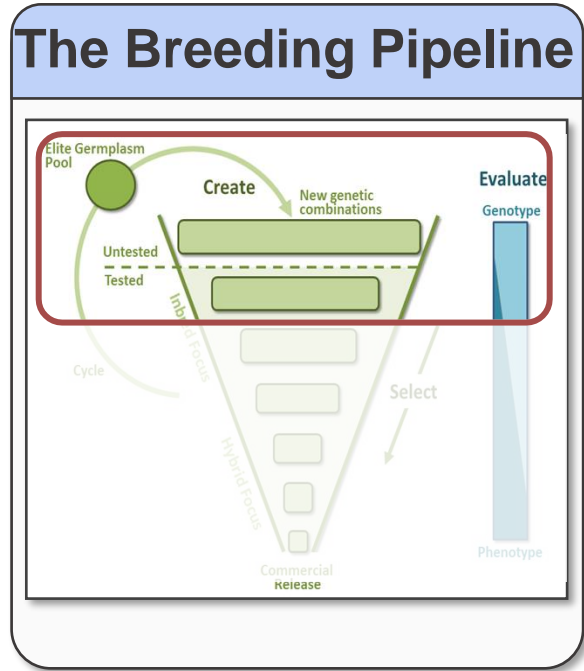
## Prediction Framework

- G
- GxE
- GxExM



# Using predictions to load the pipeline

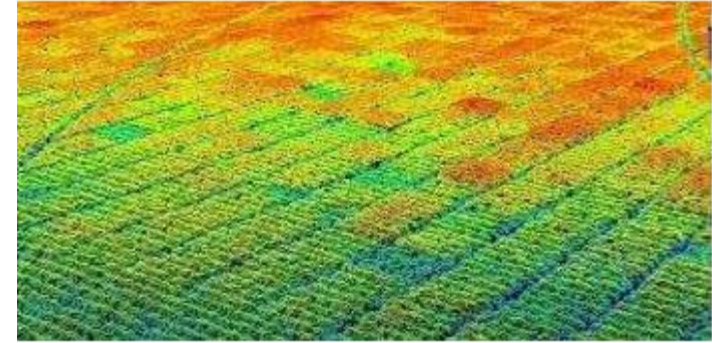
## Predicted & Observed Performance



Cooper et al (2014) Crop and Pasture Science 65(4) 311-336

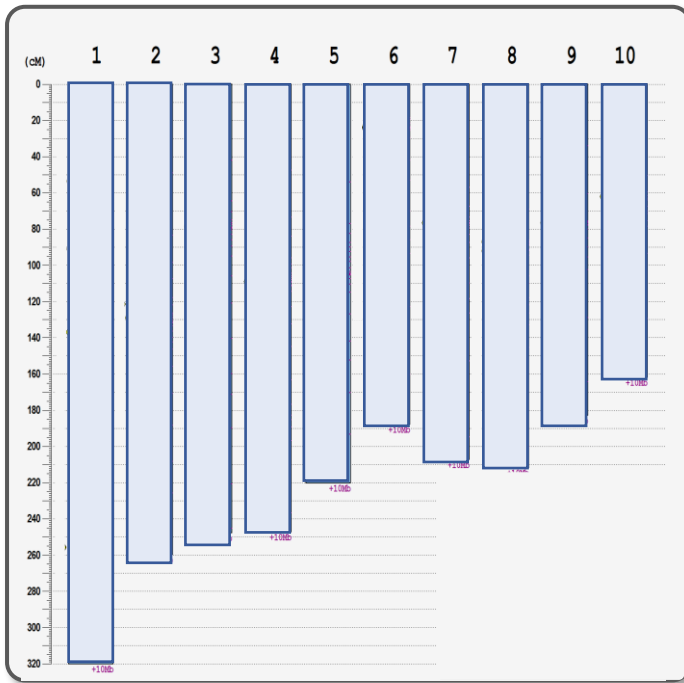
# Using advanced phenotyping + statistics to understand performance

- Specialized phenotyping equipment
- 150+ R&D facilities in 32 countries working together
- Analytics pipeline to drive insight and enable decision making



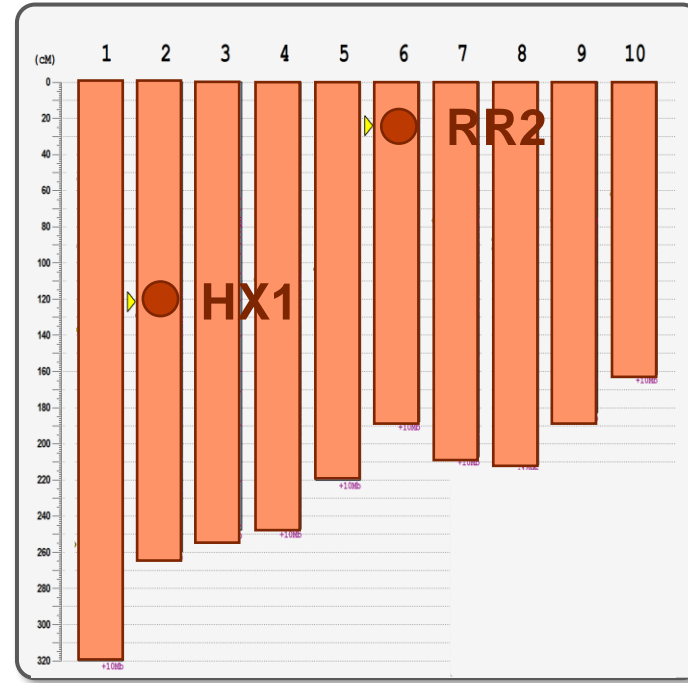
# Delivering traits to farmers

## Base Inbred



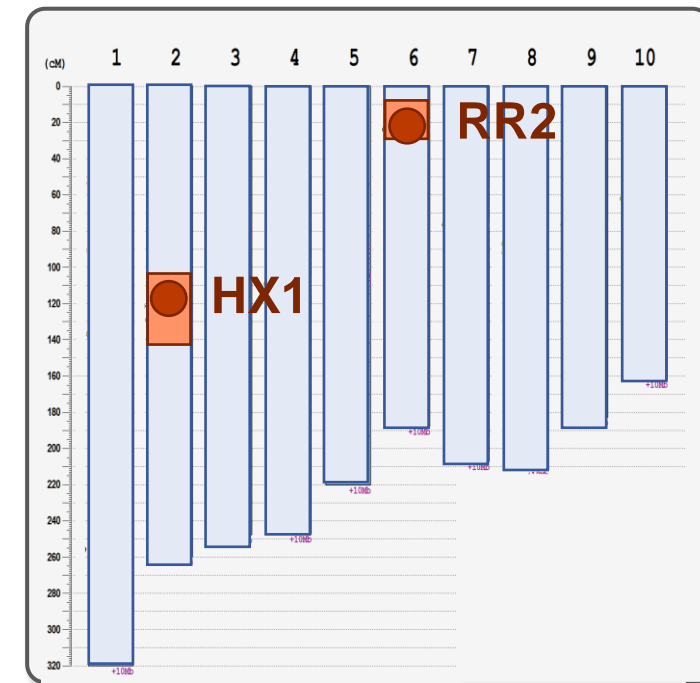
+

## Donor



Backcrossing

## Conversion



# Understanding and summarizing product performance

## P1366AM (AM,LL,RR2)

**CRM:** 113  
 Silk CRM: 111  
 GDUs to Silk: 1380  
 Phy. CRM: 114  
 GDUs to Phy. Mat.: 2760

### MANAGEMENT COMMENTS

- Yield leader 113 CRM product with high yield potential and solid trait package.
- Average to above average root strength.
- Short statured product.
- Above average Northern Corn Leaf Blight tolerance.
- Monitor Gray Leaf Spot and late season stalks.
- Companion Product to P1197AM with high yield potential and good roots.



### REFUGE

*Integrated Refuge*

- 95% (YGCB, HX1, LL, RR2)
- 5% (LL, RR2)

### SUITABILITY RATINGS

#### KEY ENVIRONMENTS

High Yield Environment Highly Suitable

#### SUITABILITY

Corn After Corn Manage Appropriately

High Residue Suitable

Late Harvest Suitable

#### SOILS

Drought Prone Soils Suitable

Early Planting/Cold Soils Suitable

Poorly Drained Soils Suitable

### CHARACTERISTIC SCORES

Drought Tol.	6
Root Strength	7
Stalk Strength	5
Mid-Season Brittle Stalk	7
Stress Emergence	5
Ear Ht.	7
Plant Ht.	5

### DISEASE SCORES

Gray Leaf Spot	4
No. Leaf Blight	6
Goss's Wilt	6
Anthr. Stalk Rot	5

TRAIT SCORE RATINGS: 9 = Excellent; 1 = Poor; Blank = Insufficient Data.

# Today's Breeding Pipeline

