Commercial Breeding Pipelines at Corteva™

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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

- 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

Create and identify the best inbreds

Identify and deliver the best hybrids

Add “traits”
End to End Breeding Pipeline

Drive Genetic Gain

Germplasm

Deliver Genetic Gain ( $$$ )

Products

Protect Genetic Gain

Traits

Corresponding text on the image:

- End to End Breeding Pipeline
- Drive Genetic Gain
- Germplasm
- Deliver Genetic Gain ($$$)
- Products
- Protect Genetic Gain
- Traits
Today’s Breeding Pipeline

Germplasm

Inbred Development

Create genetic gain

Female

Male

Breeding Crosses

Elite genetics

Estimation Sets

Genetics

Environments

Donor

Conversion

New inbred

Traits

Assemble and deliver genetic gain

Hybrid Delivery

Hybrid Combinations

Estimate

Predict

Seed Increase

Conversion

Trait Integration

Commercial Launch

Protect Genetic Gain

Assemble and deliver genetic gain

Inbred

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Create genetic gain

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New inbred

Traits

Protect Genetic Gain

Create genetic gain
Which crosses should we make?

Which progeny should we select?

Which hybrids should we create?

Where do our hybrids work best?

Prediction Framework:
- G
- GxE
- GxExM
Using predictions to load the pipeline

The Breeding Pipeline

Elite Germplasm

Inbred Parent

Inbred Parent

DHs

Genotype

Training Data

G-P Associations

Predicted & Observed Performance

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

Conversion

Backcrossing
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.

**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
- Anthrac. Stalk Rot: 5

**REFUGE**
- Integrated Refuge
  - 95% (YGCB, HX1, LL, RR2)
  - 5% (LL, RR2)

**TRAIT SCORE RATINGS:** 9 = Excellent; 1 = Poor; Blank = Insufficient Data.
Today’s Breeding Pipeline

Create genetic gain

Inbred Development

Germplasm

Elite genetics

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