

A vertical strip on the left side of the slide shows a close-up of several bright yellow flowers with green centers and stems.

# Scott Horner *P.Ag.*

@ScottH456

HyTech Production Ltd.



Hytech Production Ltd. – Lethbridge, AB

Head Office Location

# HyTech Production Ltd.

- 
- Independent Seed Production Services
    - Since 1998
    - Operations in Canada, Chile & USA
    - Hybrid Crops
      - Hybrid Canola & Mustard
      - Hybrid Wheat, Hybrid Rye, Sugar Beets
  - Family/Employee Owned



# *AAC Brown 18*



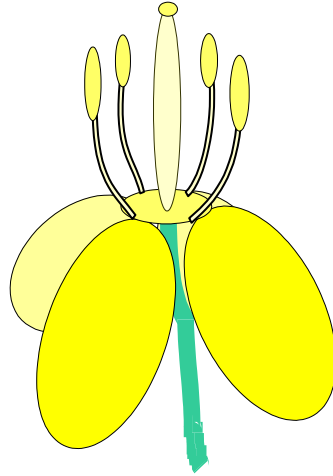
# HyTech Role

- Provide Streamlined, Fully Integrated, Breeder To Certified Seed Program Mangement
- Breeder Plots - Chile Nursery & Alberta Yield Trials
- Parent Seed Production – Chile & BC
- Hybrid Seed Production – Chile, WA, AB
- Production Research – Chile & AB
- Sampling & Quality Assurance Testing
- Inventory Management
- Treating & Packaging
- Shipping Logistics, Docs, Customs Clearance
- Regulatory Affairs – CFIA & CSGA + Chile & USA

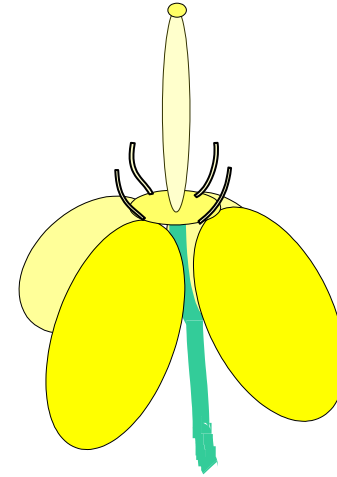
# What Is A Hybrid ?



# Hybrid = Male x Female



X



Pollinator (Rf)

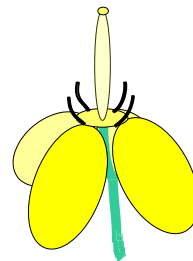
Female (A)

- Cross a fertile male parent with a sterile female parent to produce a hybrid with superior performance.

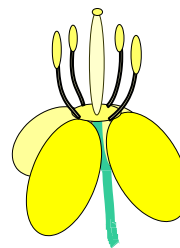


# 3 Parent Lines = 1 Hybrid

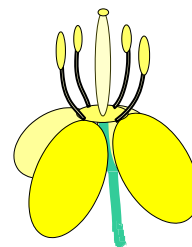
Female (A)



Maintainer (B)



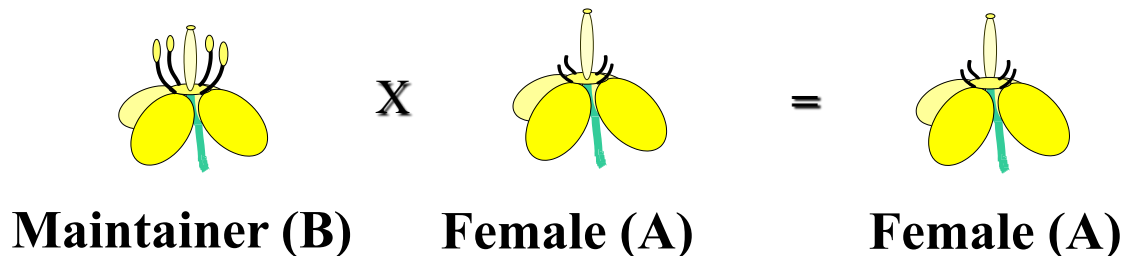
Pollinator (Rf)



AAFC Provides 100 grams of each Parent Line

# Making A Hybrid = 3 Parent Lines

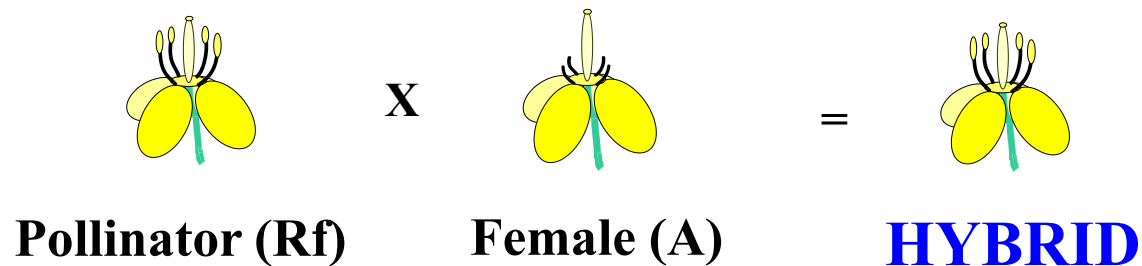
**Female**



**Maintainer**



**Male**



# Hybrid Seed Production

- **Good News & Bad News**
  - 1 : 1000 Multiplication Rate
- **Genetic, Physical, Other Risks**
- **Hybrid System**
  - 6 Multiplications to get to 50,000 ac's
  - 2 Multiplications for an OP to get to 50,000 ac's
  - Male / Female Nik
- **Pollination**
  - Without Pollination there is no hybrid seed
  - Bee quality, weather impacts, transport, cost...

# Hybrid Seed Production

- **Genetic Risk - Outcrossing**
  - Cross Pollination - Isolation
  - Volunteers - Rotation
  - Off Types
- **Physical Risk - Mixing**
  - Equipment – planters, swathers, combines, sampling, storage, transport, cleaning & treating
- **Other Risks**
  - Environment – rain, wind, heat, hail, frost, snow
  - Wildlife – cows, deer, elk, birds, gophers, rabbits,
  - Human Error – spraying...



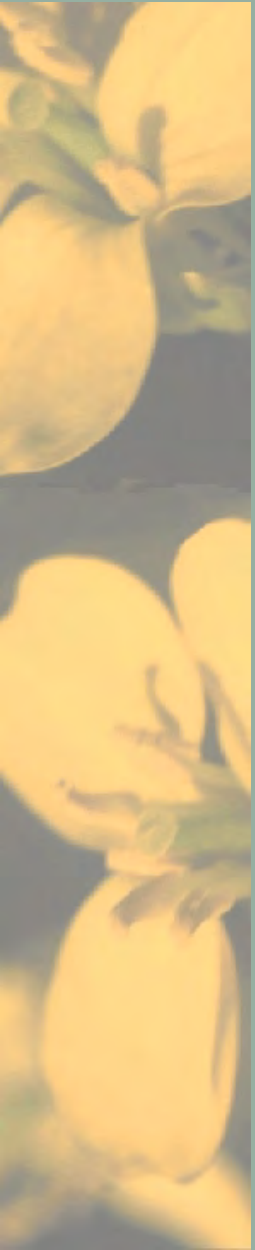
# Control Risk & Reduce Cost

- Systems & Processes
  - Audited ***Quality Management System***
  - ***HyCrop*** – Field Data Collection & Report
  - ***Hypr*** – QA & Inventory
    - Real Time Access = Immediate Decisions
    - Continuous Improvement
  - Production Research
    - Identify Risks... Implement Strategies
  - Quality Assurance Testing

# Production Research



# Production Research

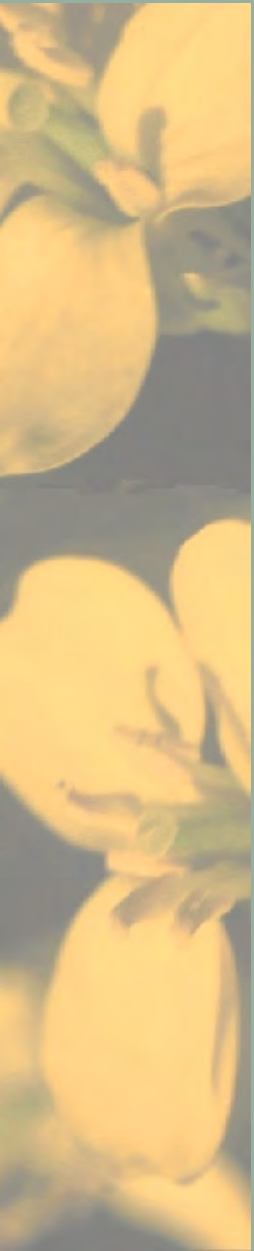
- 
- Parent Line Evaluation Trials
    - Pollen production, flower nix, bay widths
    - Pollinators & Pollination
  - Parent Trimming vs Split Planting
  - Field management influence
    - Planting rates, trimming, timing, etc.
    - Fertility
    - Fungicides, Micronutrients, Biologicals
    - Irrigation
  - Effect of Off Types.... Isolation...

# Parent Seed



# Parent Seed

- Genetic Purity Most Critical
  - Isolation, Rotation, Equipment, Protocols
- Extreme Isolation
  - B.C., USA, Chile
- Intensive Management
  - Planters, Sprayers, dedicated Combines & Cleaning Lines
  - Hand Labor



# Hybrid Production

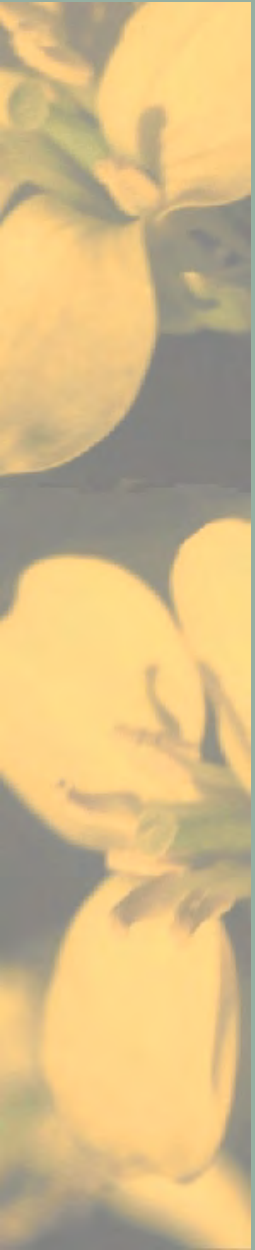


# Hybrid Production

- Focus on Physical & Genetic Purity
- Alberta, Washington, Chile
  - Long Term Producer Relationships
  - Pollination & Rogueing Contracts
- Customized Quality Assurance
  - Standards & Protocols In Place
- Field Inspection & Seed Certification
- Detailed Records & Regular Reports

# Hybrid Production

- Critical Success Factors
  - Minimum Isolation Distances
  - Intensive Crop Management
  - Weed & Insect Control
  - Pollination Management
  - Water Management
  - Male Management
    - Split plant, trim, removal
  - Harvest Management
  - Storage, Delivery & Seed Cleaning



# Quality Assurance







*Questions?*

