



## Outline



- Background on XCEED
  - Attributes
  - Development history
- 2008 Demo program
- Agronomy
  - Seeding and fertility
  - Weed control
  - Varieties
  - Harvest
- Markets
- Breeding objectives



XCEED™ canola

## Background

- XCEED (*Brassica juncea*) canola is a product of the Viterra breeding program with the following traits:
  - Canola quality oil
  - Increased frost tolerance
  - Increased heat tolerance
  - Increased drought tolerance
  - Reduced pod shattering, giving producers the opportunity to straight-cut combine their crop
  - CLEARFIELD herbicide tolerance
- *B. juncea* canola will be marketed as XCEED canola by Viterra
- Registered two XCEED varieties this year
  - XCEED 8570
  - XCEED 8571



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## Viterra develops first 10 stack canola

### *B. napus* – new trait research

- Shatter resistance
- Frost tolerance
- Drought tolerance
- Heat tolerance
- Yellow seed coat – low fibre
- Improved protein
- Low chlorophyll
- 50:30:15 “healthy oil” profile
- Yield enhancement
- Improved blackleg resistance

### *B. juncea*

- Inherent trait
- Inherent trait
- Inherent trait
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- Inherent trait
- Inherent trait

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## *B. juncea* (1991-95)

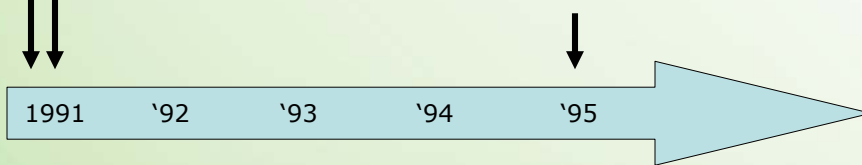


# Milestones

VT & AAFC begin joint project

VT & NRC develop DH Protocol

Canola fatty acid profile developed at VT



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## *B. juncea* (2000-05)

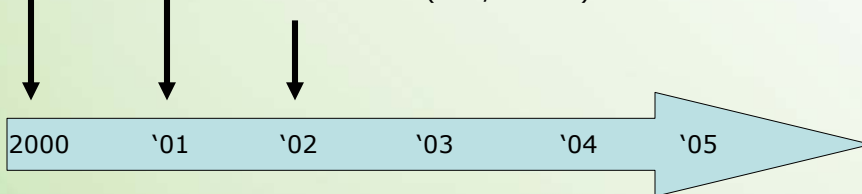


# Milestones

FDA GRAS status approval

- Health Canada Approval
- Feed Approval in Canada & the US

Registration of 1<sup>st</sup> Juncea canola varieties in the world (Arid/Amulet)



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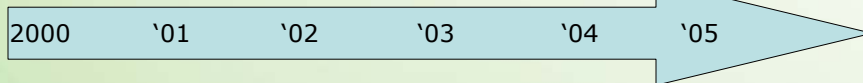
*B. juncea* (2000-05)



## Milestones

Estlin Registered with Improved Oil & Yield

Variety stream continues with  
Dahinda & Davin Registered



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*B. juncea* (2006-08)

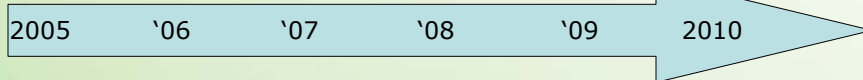


## Milestones

CF XCEED granted unconfined release by CFIA

**Registration of 1<sup>st</sup> CF XCEED canola  
Varieties in the world**

Variety Dune released in Australia



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## 2008 Demo program

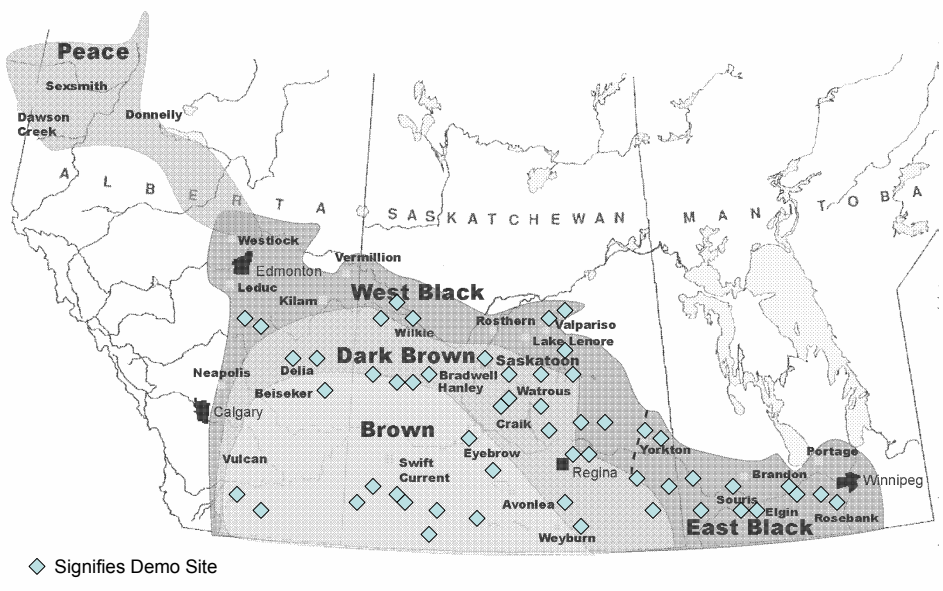
- 55 cooperators across Western Canada conducted 20 acre demo plots
  - gathered yield data
  - helped quantify inherent traits
  - produced true farmer tested data and feedback
- XCEED also in 22 Proven Performance Check plots across Western Canada



Rod Selby harvesting his XCEED plot at Elstow, SK

## Proven Testing Zones

Western Canada



## 2008 Demo Program



- “I couldn’t believe it came up so much quicker and it was the last canola seeded.”
- “XCEED had more frost tolerance than the napus I had beside it.”
- “XCEED was extremely easy to straight-cut harvest, standability was very good.”
- “My XCEED matched the napus in terms of yield and saved me the time swathing the napus.”



Mark Weisshaar harvesting his XCEED plot at Wilcox, SK

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## Agronomic Characteristics



- **XCEED Canola – *So what’s different from regular canola?***
  - **For the most part it can be treated the same as canola, with some slight modification.**
    - Upright plant with less branching
    - Shatter resistance – ability to straight-cut combine
    - Yellow seed coat
    - Similar appearance as oriental mustard
    - Seeding rate
    - Flea beetle damage
    - Swath timing
    - Field selection – low kochia pressure

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## XCEED Canola Visual

- Upright plant with less branching
- Yellow seed coat
- Pod structure



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## Fertility & Seeding



- Fertility
  - Similar to mustard or OP canola
  - 25 bu crop requires:
    - 80 lbs available N and 18 lbs of S
  - Less tolerant to seed-placed P than *napus*
    - Do not exceed 20 lb/ac (11% SBU; 1" spread, 9" rows)
- Seed Depth
  - ½ to ¾ inch deep



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## CLEARFIELD XCEED Herbicide Options



### ODYSSEY

- Reliable broad-spectrum grass and broadleaf weed control
- 1-pass flushing weed control - Brassica species, green foxtail, chickweed, cleavers, stork's-bill, stinkweed & redroot pigweed
- Excellent cleaver control
- Group 1 resistant wild oats and green foxtail control



### SOLO

- Freedom to grow any type of canola or flax the following year
- Broad-spectrum grass and targeted broadleaf weed control
- Group 1 resistant wild oats and green foxtail control

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## CLEARFIELD XCEED Herbicide Precautions



- “Absolutely **NO** ABSOLUTE or TENSILE!”
  - Clopyralid (Lontrel) will cause crop injury to CLEARFIELD XCEED canola



- A precautionary statement has been added to the case packaging on the top flap
  - “ABSOLUTE will cause crop injury to XCEED canola”

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## Straight Cut & Swath Recommendation



- **Straight Cut – Header Selection**
  - Draper Header, Auger Header, Stripper Header
- **Straight Cut - Timing**
  - Moisture content = 9.5%
  - Appearance
    - Earlier than expected (stalks may be green)
    - Pods will have ripened
- **Swath – Timing**
  - Later than napus canola
    - Seed color change = 60 - 70%
    - Better for yield and oil



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## Benefits of Straight-Cut Combining



- **Time savings**
  - Harvest is the busiest time of year
  - Harvest other crops while the XCEED is curing, standing safely
- **Labour savings**
  - Save the cost of a hired man
- **Cost of extra capital**
  - Swather
- **Cost of operation**
  - SAF - \$16.50/ac custom rate



Daryl Moen harvesting his XCEED plot at Colonsay, SK

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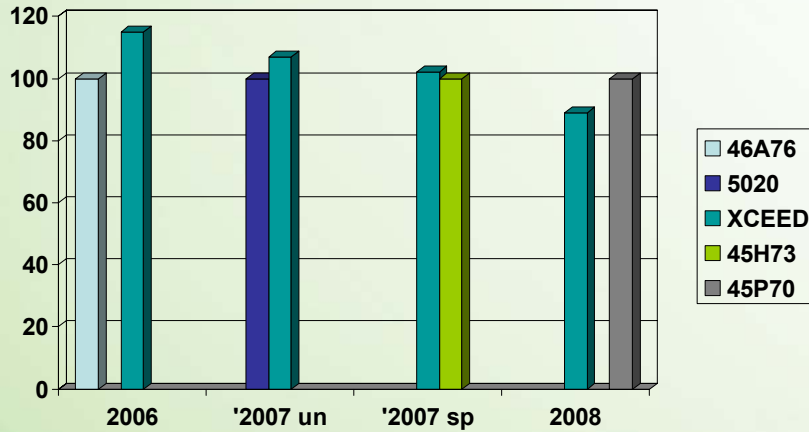
## XCEED Varieties



- **Registered two new XCEED varieties for 2009:**
  - XCEED 8570
  - XCEED 8571
- **What's in a name?**
  - XCEED 8570
    - 8 – *Brassica juncea* canola
    - 5 – Mid-maturity (compared to the current checks)
    - 7 – Herbicide system ( 7 – CLEARFIELD)
    - 0 – Sequence of registration

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## XCEED vs Napus checks 2006-08



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## Variety Characteristics



• Yield Data 2006 – 2008 (XCEED vs. Napus Canola)

	Maturity (days)	Height (cm)	Yield (%napus)
Napus Check*	89.2	113.8	100.0
<b>XCEED 8570</b>	89.5	131.4	<b>107.1</b>
<b>XCEED 8571</b>	90.7	127.5	<b>105.5</b>

\*Napus Checks: 46A76 (2006), 5020 (2007), 45H73 (2007), 45P70 (2008)

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## XCEED Canola Market

- BioExx
  - Interested in crushing XCEED in Saskatoon plant
  - XCEED has a higher protein that they can isolate and sell as protein concentrate (market in Europe)
  - Also market the oil and meal = 3 revenue stream
  - All demo plot production was sent to Saskatoon this fall Japan/Europe
  - Niche non - GMO markets
- Domestic crushers also run non-GMO programs

## Contracting

- Contract Registration & Identity Preserved (IP)
  - Due to CFIA regulations XCEED will be an IP crop for 2009
    - no visual distinguishability with oriental mustard
    - closed loop system
    - must be stored separately
    - follow Viterra's standard IP procedures
  - Production contracts will have to be signed at time of booking XCEED
- Priced the same as regular canola

## Opportunities With XCEED



- **New Acres of Canola**
  - Brown & Dark Brown Soil Zones
  - Reluctant to grow canola
    - Environmental pressures – drought, heat
- **Incremental Acres of Canola**
  - Dark Brown & Black Soil Zones
  - Producers that want to grow more canola
    - Acres of canola too large to manage due to swathing
- **Risk Management**
  - Hot & Dry happens!
  - Frost

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## XCEED Breeding Program



- Efficient doubled haploid and marker-assisted selection
- Nurseries in Canada and Chile
- Close association with Australian program
- Research trials in US in 2008 (7 states)
- Access to hybrid systems and diverse germplasm
  - Great genetic diversity within *B. juncea*
- Future plans...
  - Hybrids, seed size, oil content, high stability, disease resistance (blackleg, alternaria, white rust)

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VITERRA

*and harvest*  
**Grow canola like never before.**

**Introducing XCEED™ canola.** With increased resistance to heat, frost, and drought, new XCEED™ canola from Proven Seed provides a cropping alternative on acres where input performance is inconsistent, expanding the boundaries of canola growing across all soil zones. Plus, XCEED™'s tougher pods resist shattering, increasing the potential for multi-cropping. And XCEED™ canola delivers one-pass weed control with the Clearfield® trait. To find out more call your Viterra representative or visit [www.viterra.ca](http://www.viterra.ca).

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**Questions?**

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