



Evaluating Pod Sealants for Direct-Combined Canola

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Indian Head Agricultural Research Foundation



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- **Western Applied Research Corporation** (Sherrilyn Phelps)
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- **Agriculture & Agri-Food Canada** (Stu Brandt, Guy Lafond, Bill May & too)



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Incentives for Straight-cutting



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Incentives for Straight-cutting

- **Increased profit** (eliminates cost of swathing and potential for ↑ yield)

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Reasons for Swathing



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Pod Sealants



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Pod Sealants

- Pod sealants available to western Canadian canola growers since 2008
- Two major products:
 1. Pod Ceal DC (Brett Young)
 2. Pod-Stik (United Agri-Products)



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2009 Straight-Cutting Study



Investing in Canola Research...
Growing a Bright Future!

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2009 Straight-Cutting Study

Objective:

- To evaluate the ability of two currently available pod sealant products, Pod-Ceal DC and Pod-Stik, to reduce shattering losses and increase grain yields in several cultivars of direct-combined canola.

2009 Straight-Cutting Study

4 locations

- Indian Head, Scott, Melfort & Swift Current

5 Cultivars

- 5440, 4362, 45H26, 5020, 8571 (*juncea*)

4 Harvest Treatments

- Swathed, SC-untreated, SC-Pod Ceal, SC-Pod-Stik

Experimental Design



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Experimental Design

- **Factorial combination of 5 cultivars and 4 harvest methods (20 treatments)**

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Experimental Design

G REP 3 (51-60) G

G REP 3 (41-50) G

G REP 2 (31-40) G

G REP 2 (21-30) G

G REP 1 (11-20) G

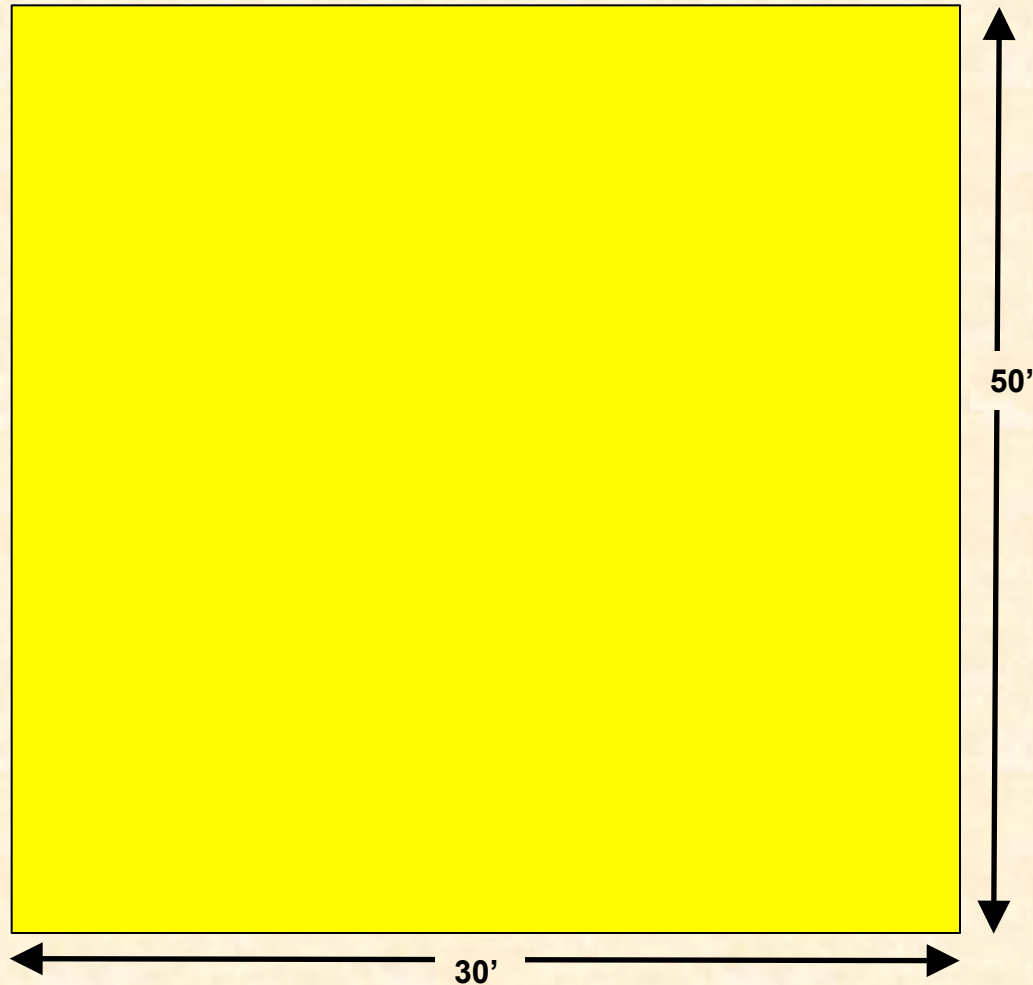
G REP 1 (1-10) G

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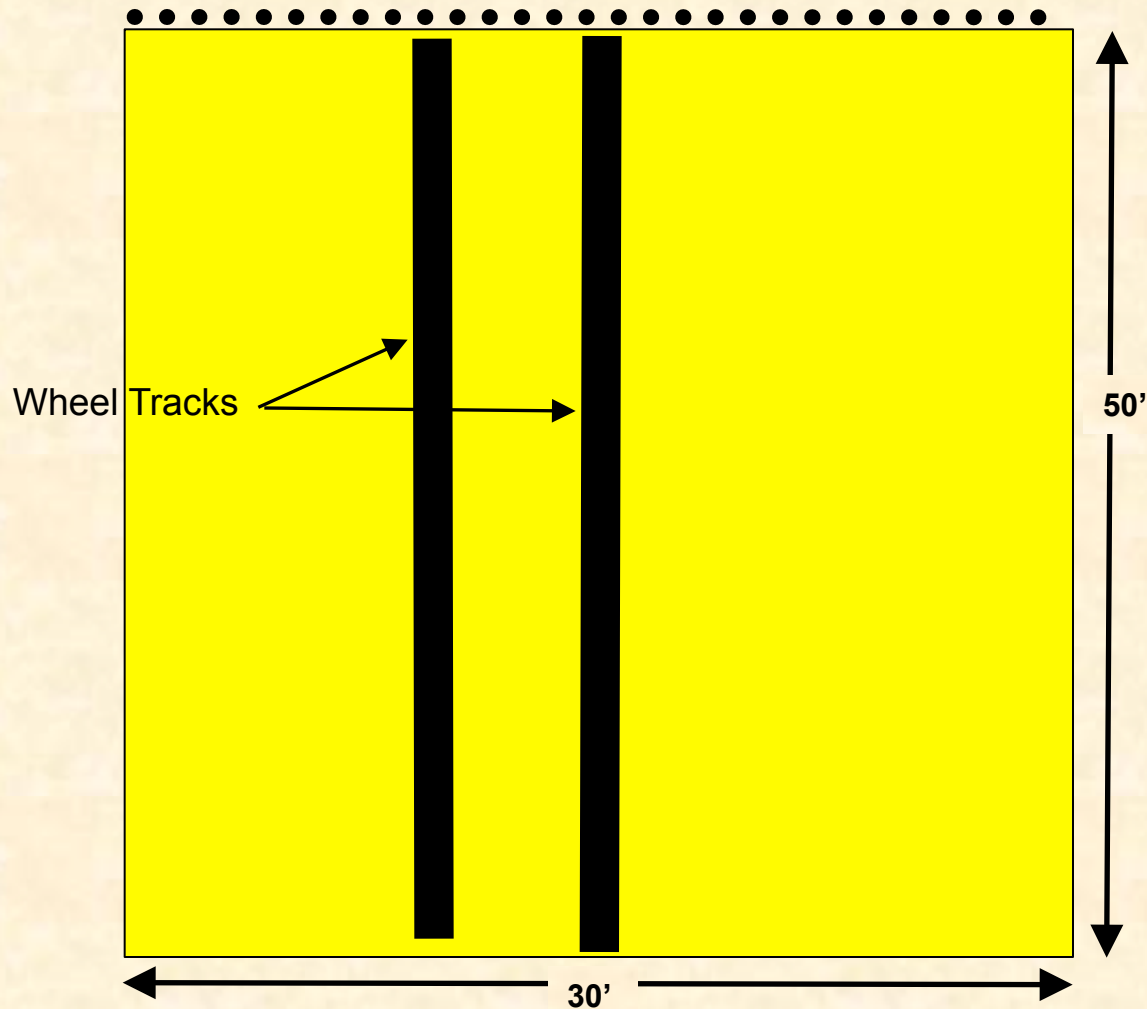
Field Operations (Indian Head)



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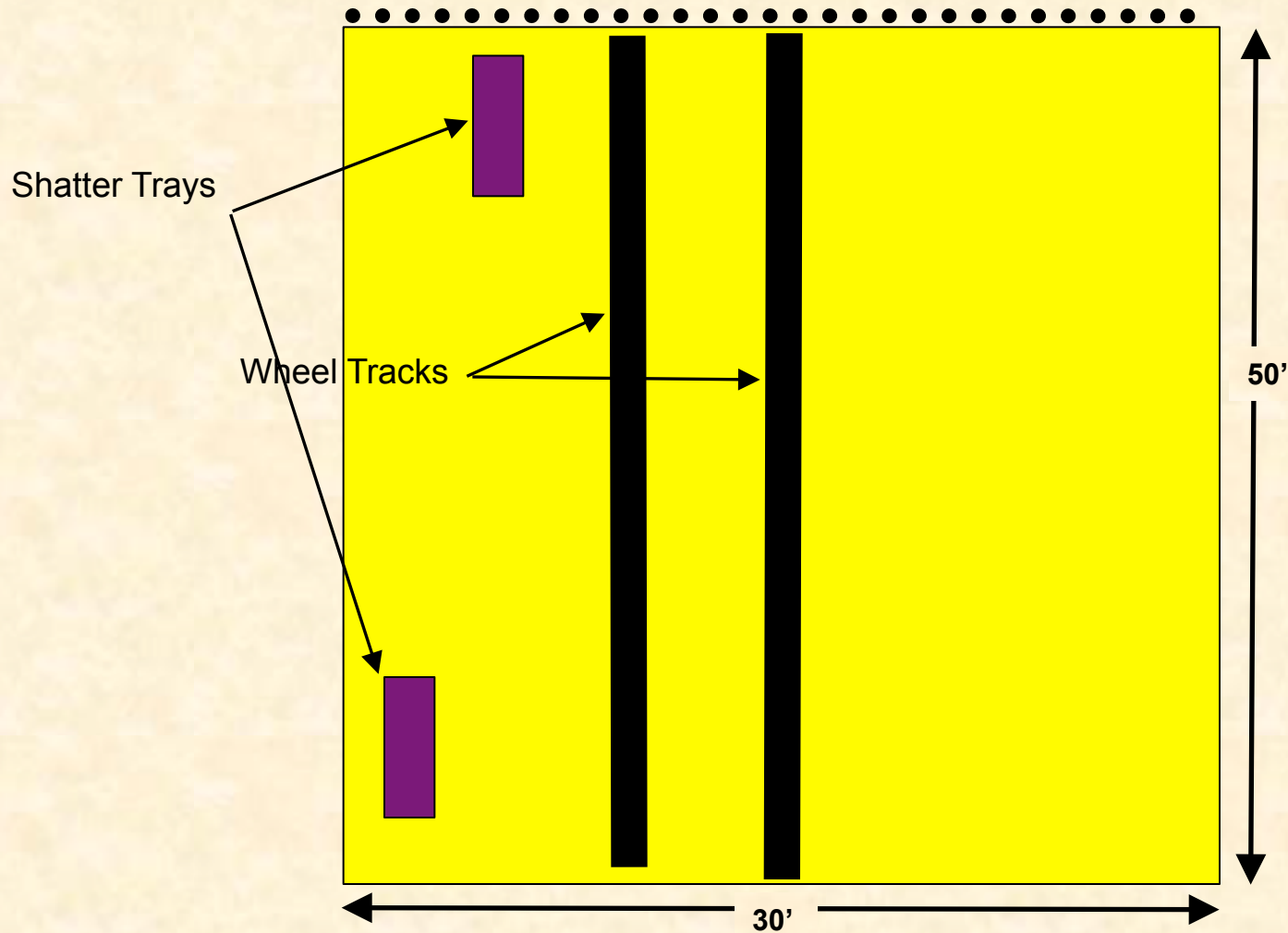
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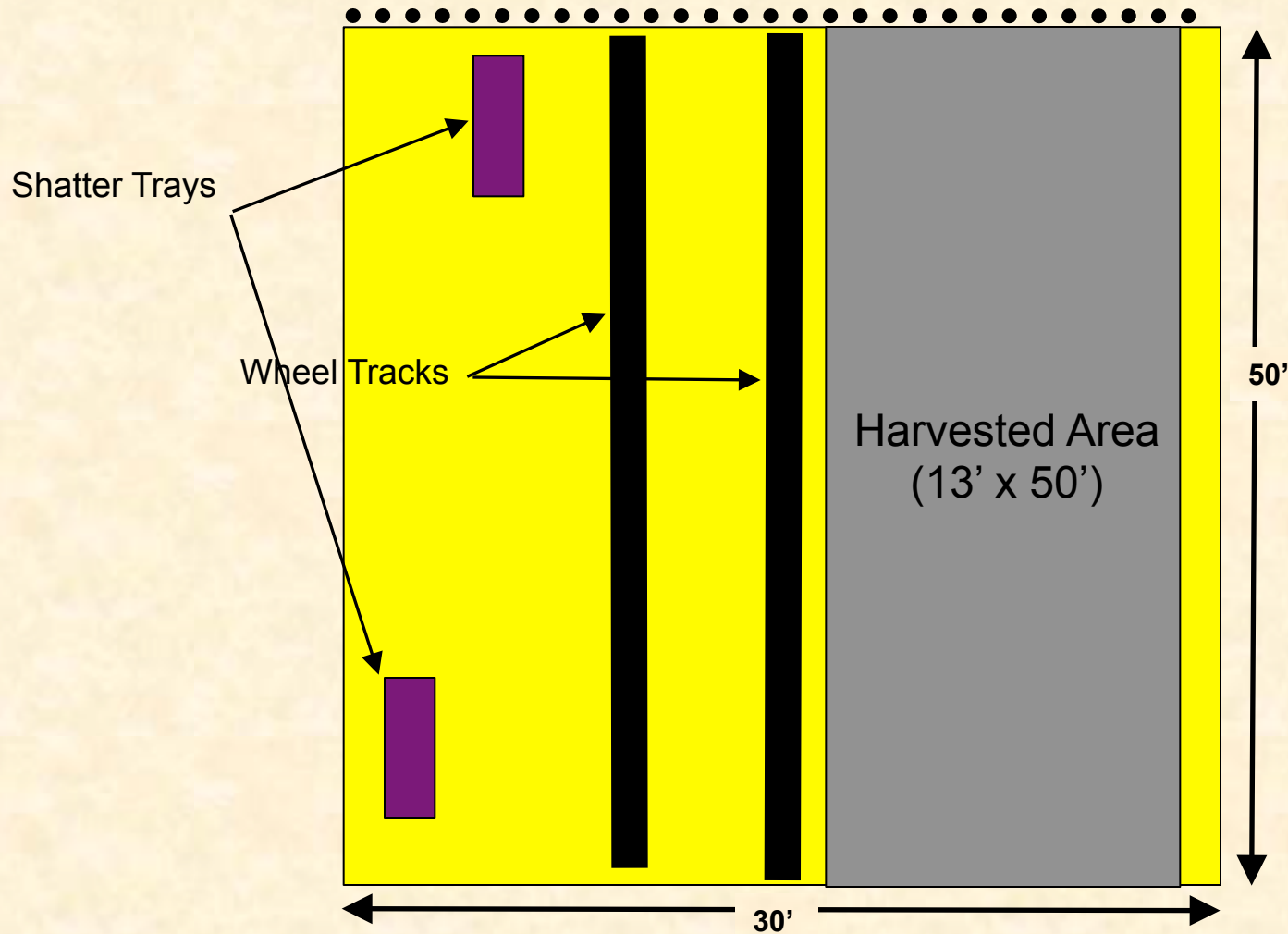
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Results: Seed Yield by Location

Indian Head	Scott	Melfort	Swift Current
seed yield (bus/ac)			
52.2a	54.6a	23.2b	15.9c
0.84	0.84	0.84	0.84

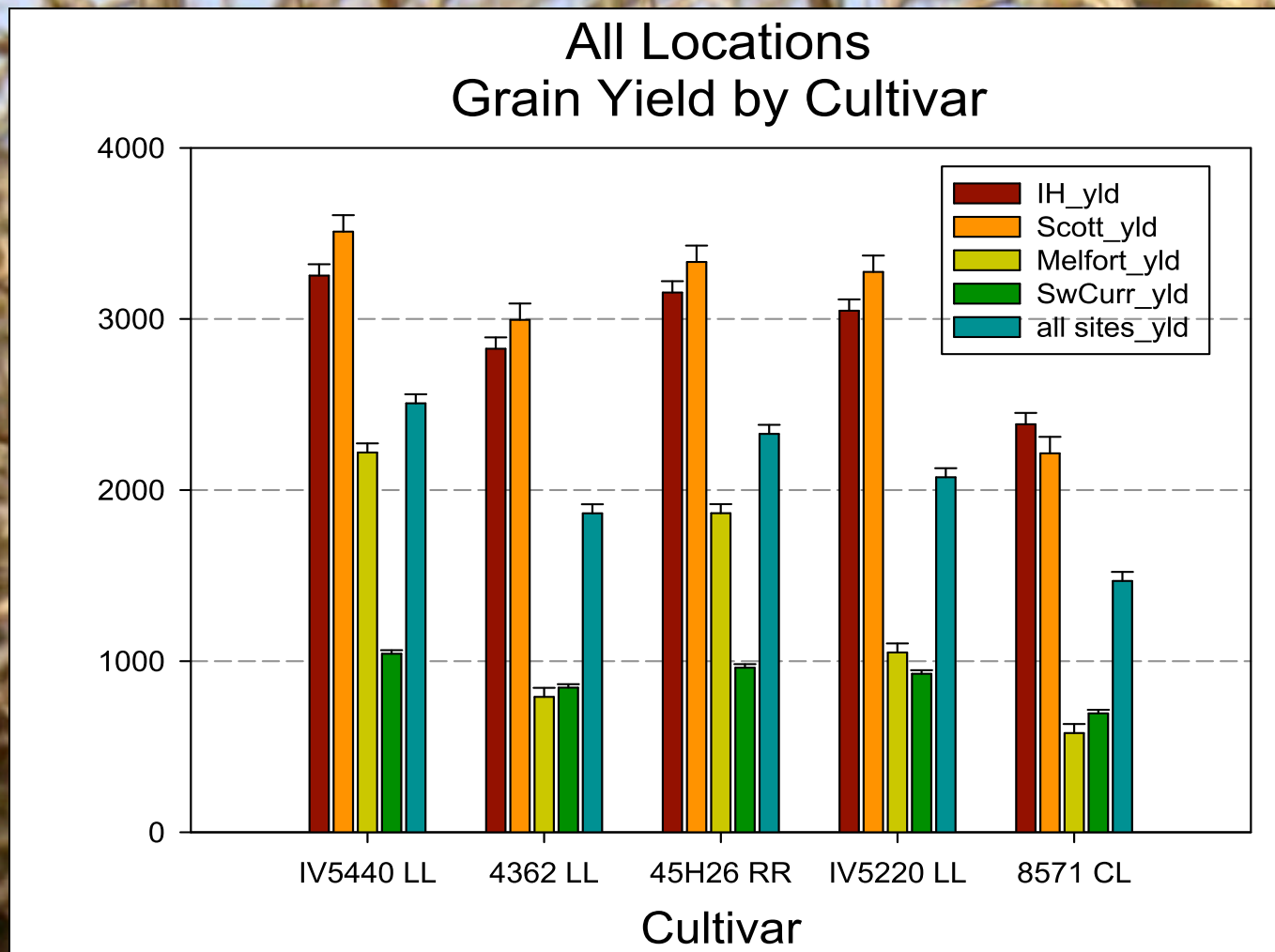
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Cultivar Effects on Grain Yield

- Highly significant F-test at all locations separate and combined ($P < 0.001$)
- No interactions with harvest treatment in any cases
- Same yield ranking for all locations
–5440 > 45H26 > 5020 > 4362 > 8571

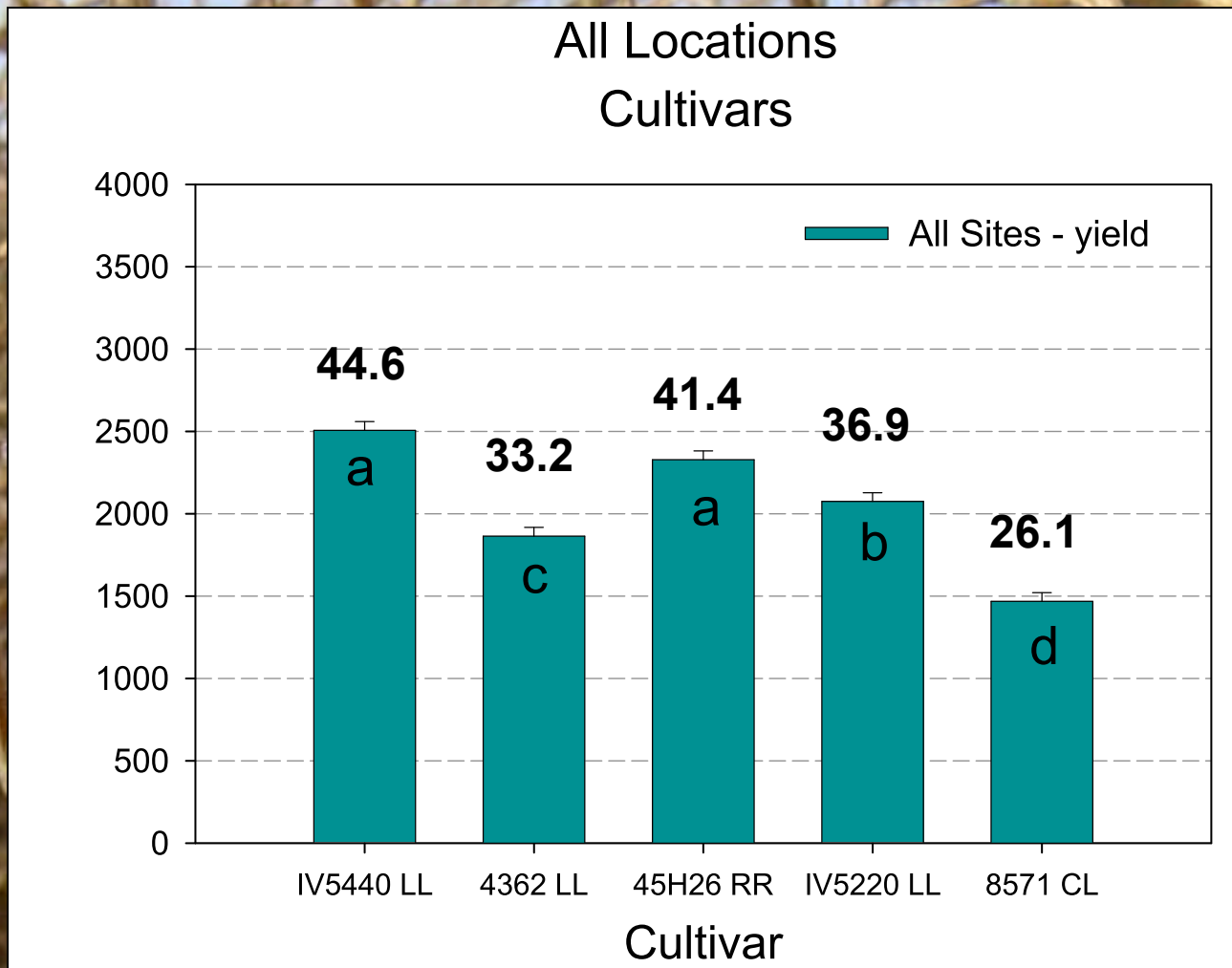
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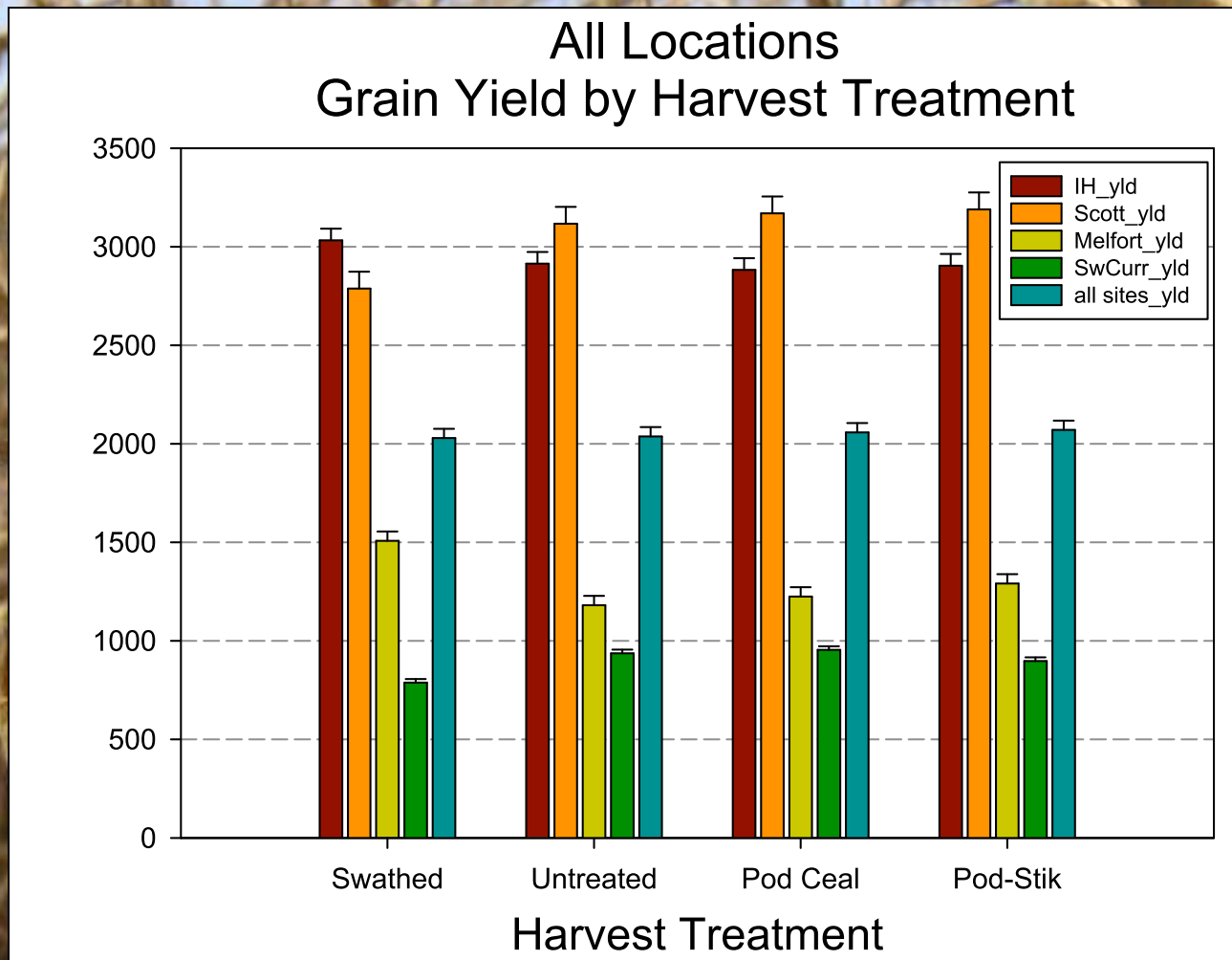
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Harvest Treatment & Grain Yield

- Significant F-test at Scott ($P=0.006$) and Swift Current only ($P<0.001$) and not significant for combined analysis
- No interactions with cultivar in any cases
- Straight-cutting yields equal or greater than swathing in all cases
- No observed benefits to applying pod

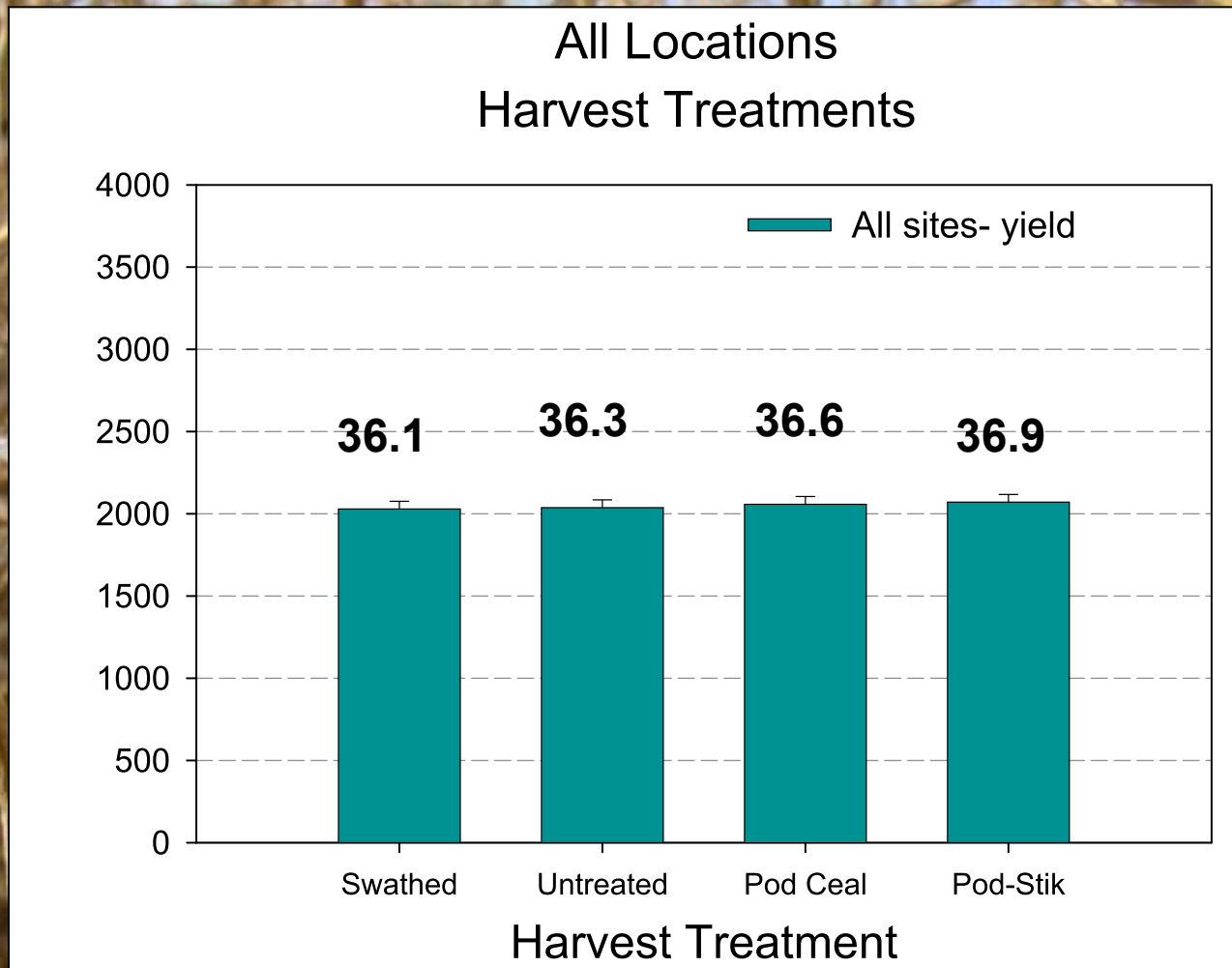
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Shattering Measurements



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Tough Conditions in 2009!



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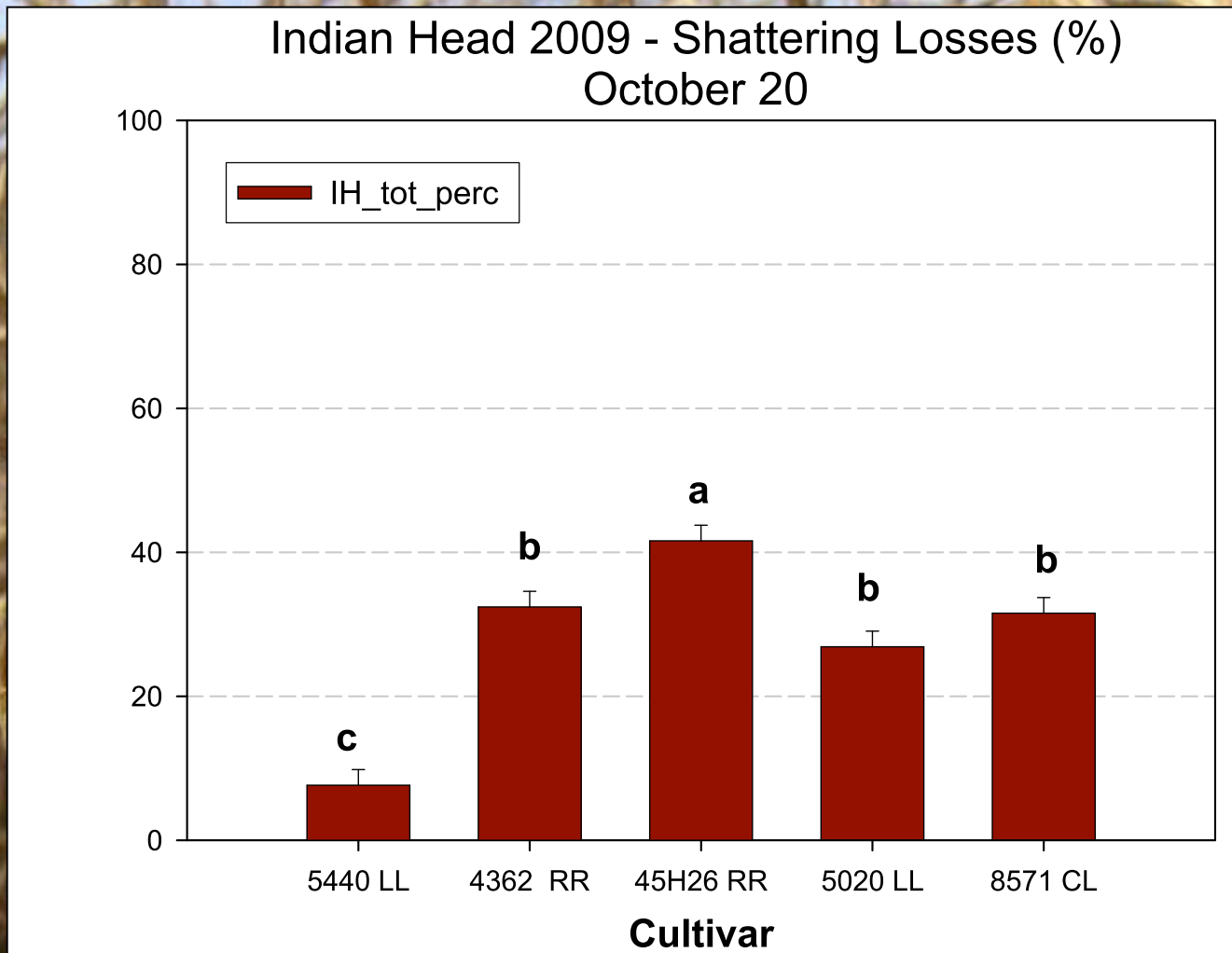
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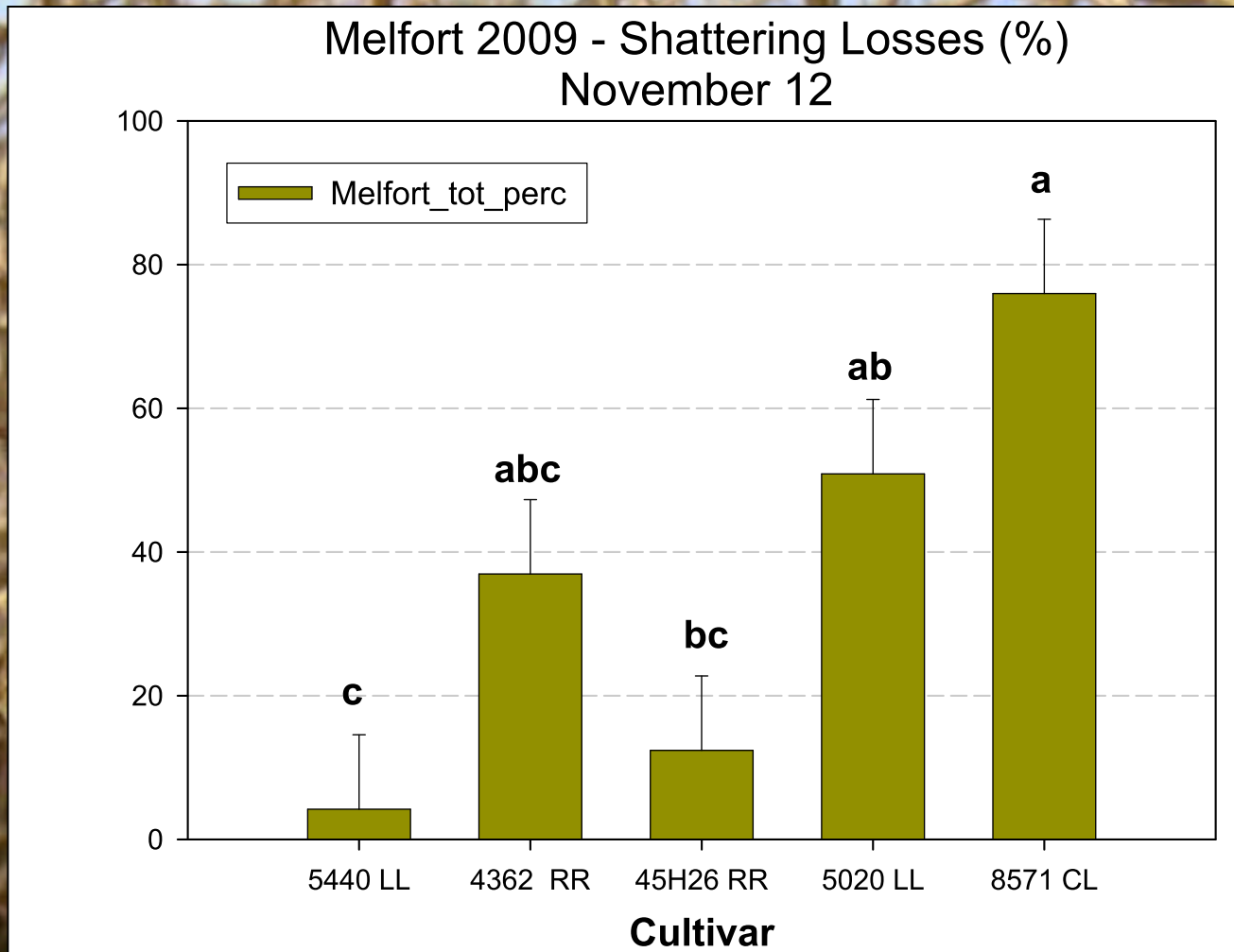
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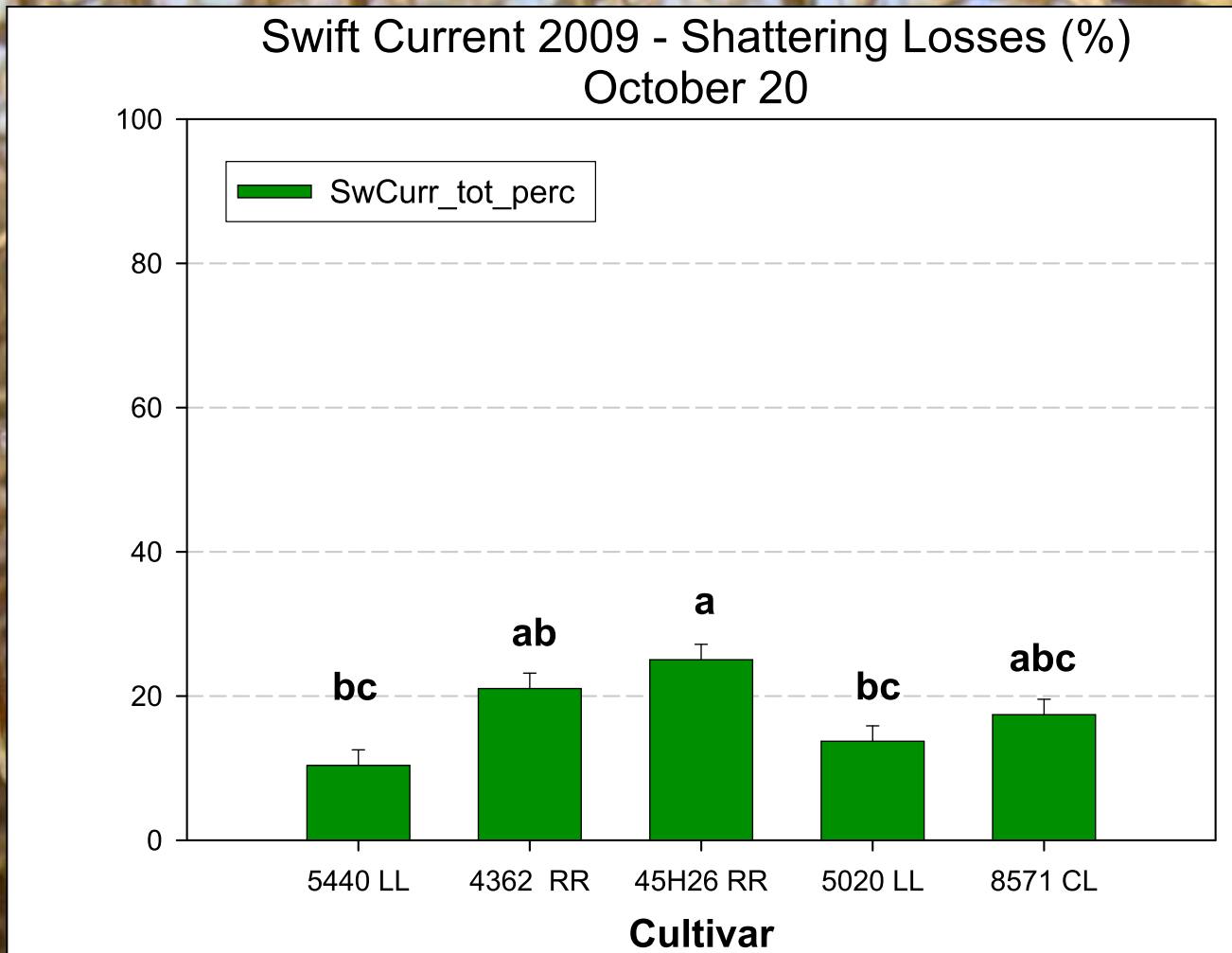
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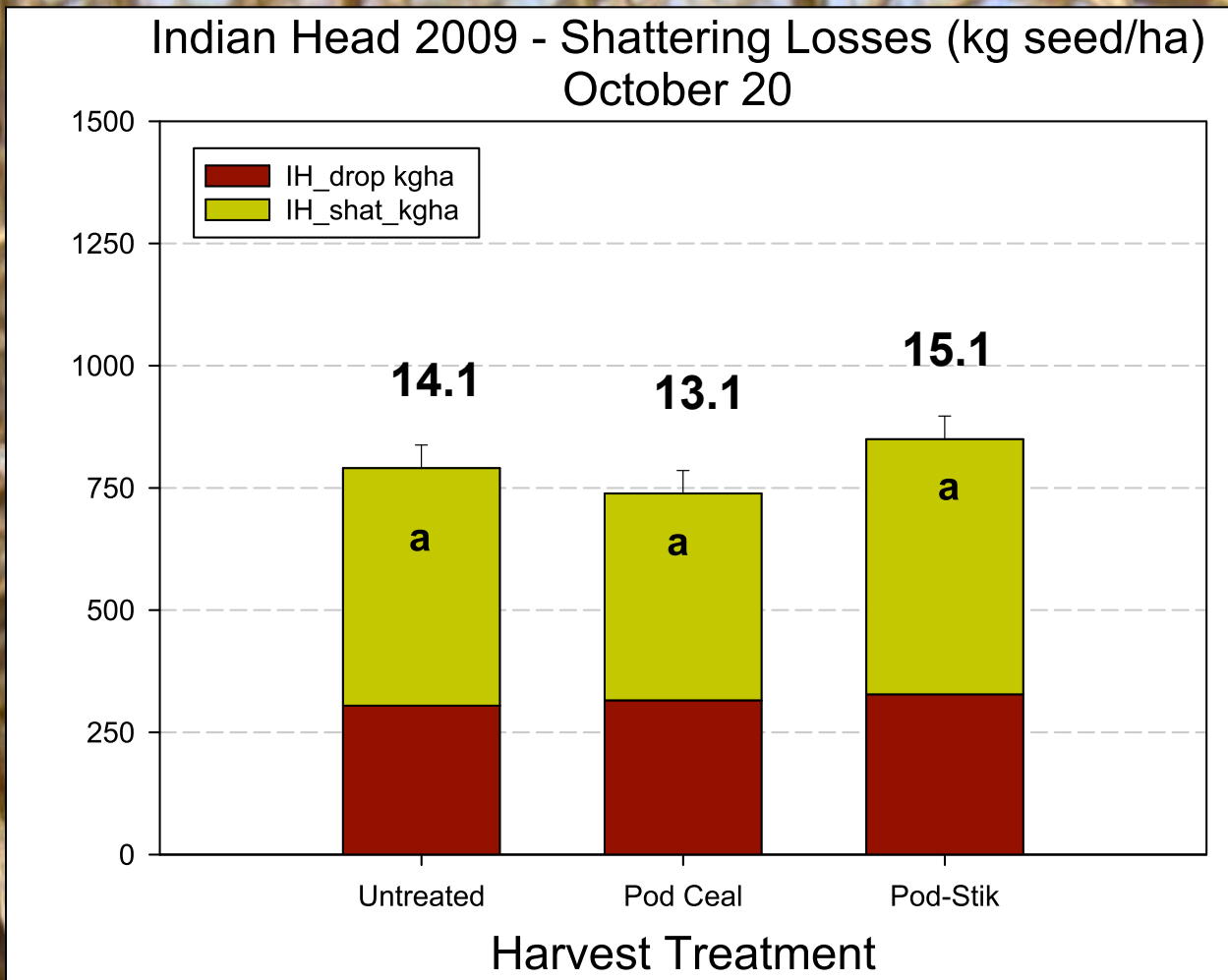
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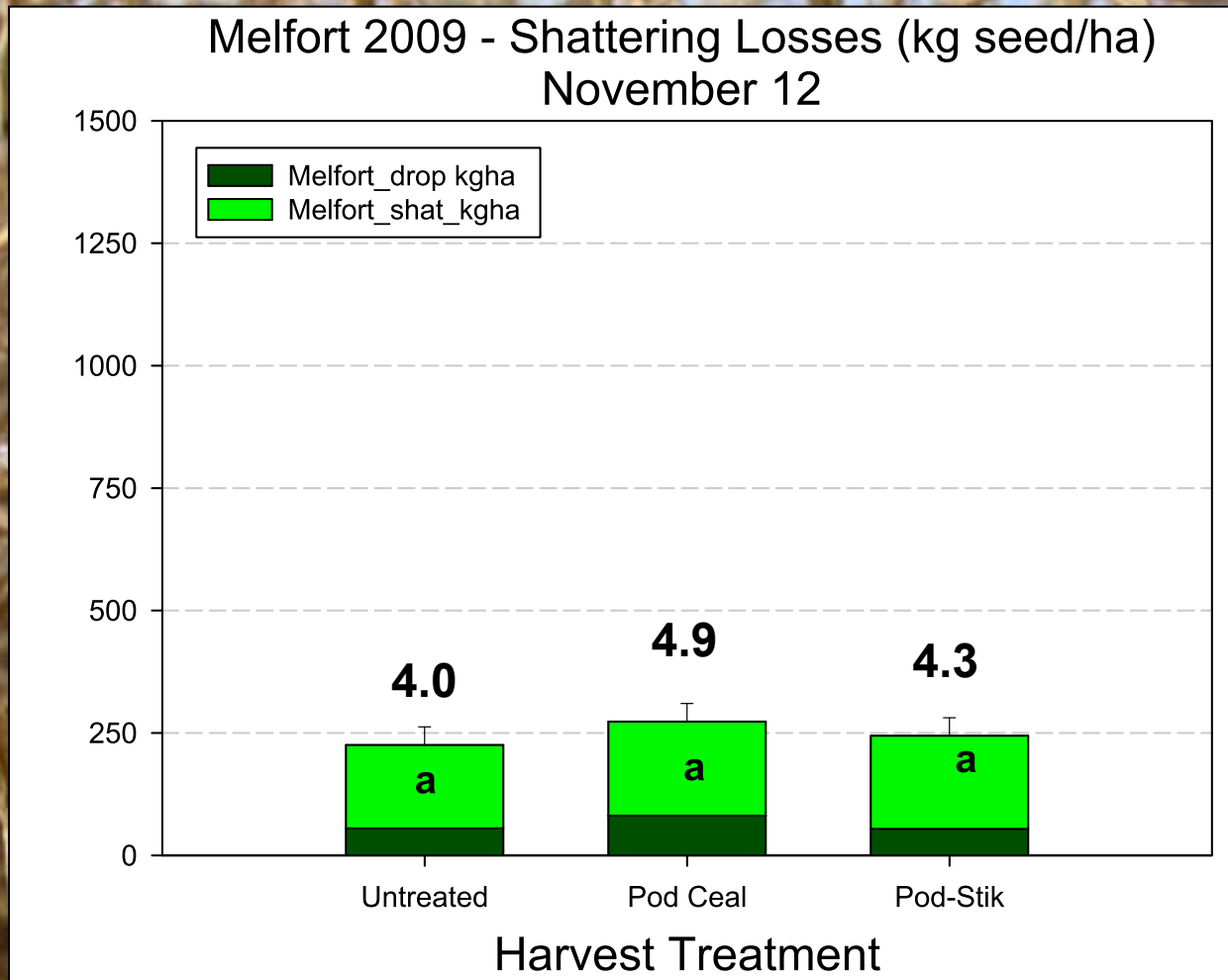
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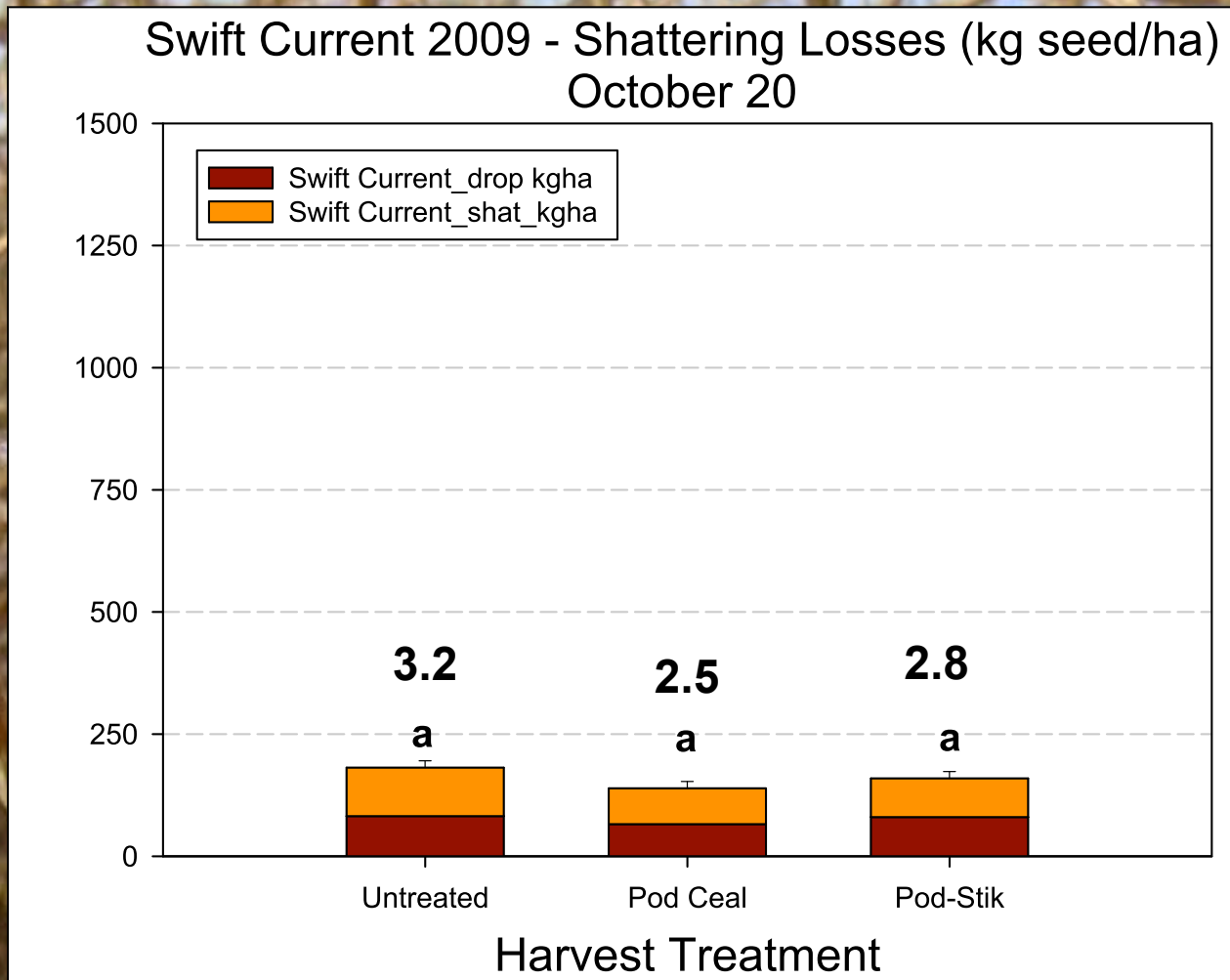
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Profits (Costs & Returns)



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Profits (Costs & Returns)

- Assumed a canola price of \$400/Mt (\$9.07/bus)

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Profits (Costs & Returns)

- Assumed a canola price of \$400/Mt (\$9.07/bus)
- Assumed equal cost of swathing and applying pod sealant (**\$14/ac**) and equal cost of straight-combining versus combining with a pickup

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- Assumed a canola price of \$400/Mt (\$9.07/bus)
- Assumed equal cost of swathing and applying pod sealant (**\$14/ac**) and equal cost of straight-combining versus combining with a pickup
- Profits calculated for each plot individually and analyzed as a dependent variable

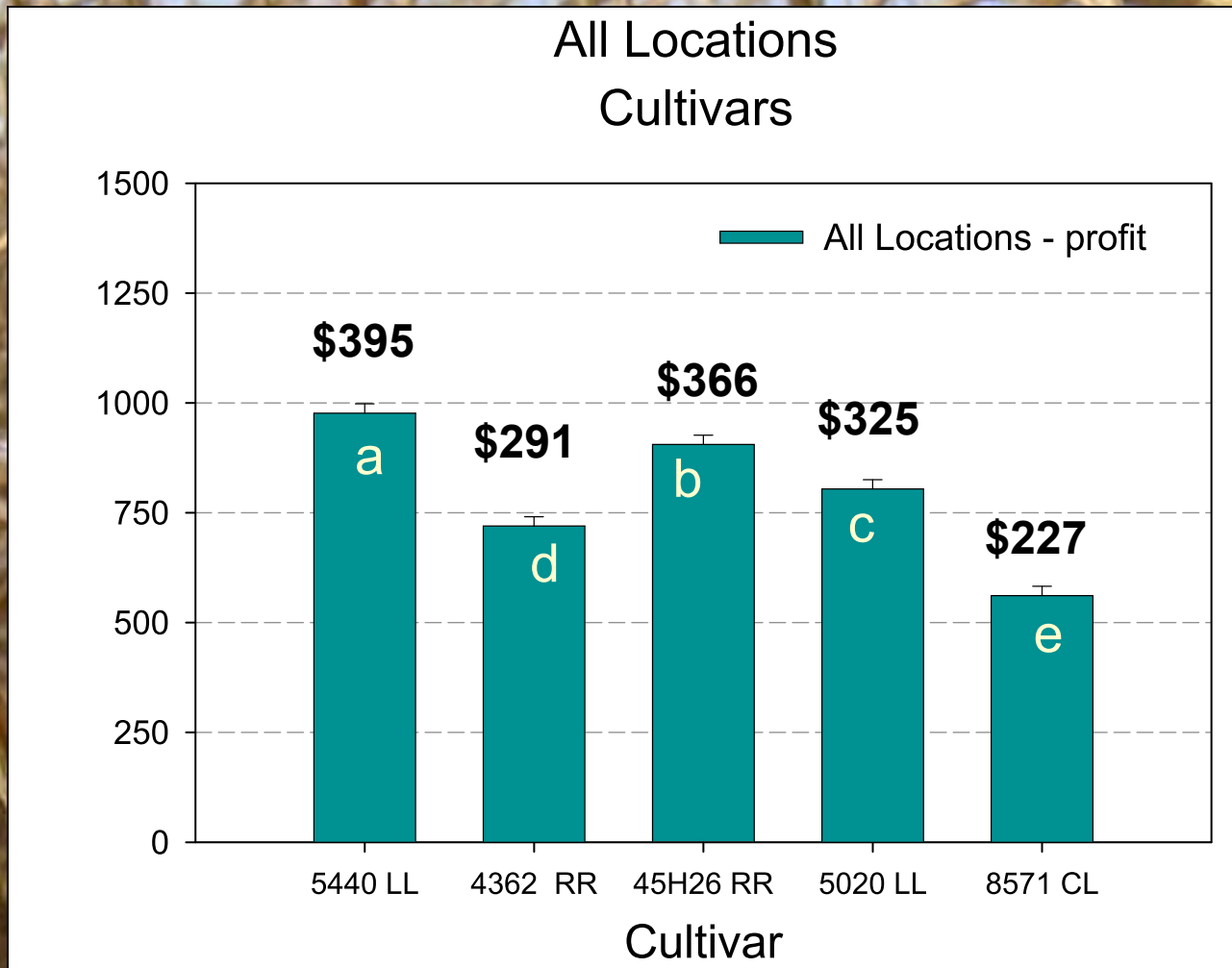
Results: Profits by Location

Indian Head	Scott	Melfort	Swift Current
Marginal Profits (dollars/ac)			
\$464.35 ^b	\$485.80 ^a	\$200.13 ^c	\$134.27 ^d
\$7.66	\$7.66	\$7.66	\$7.66

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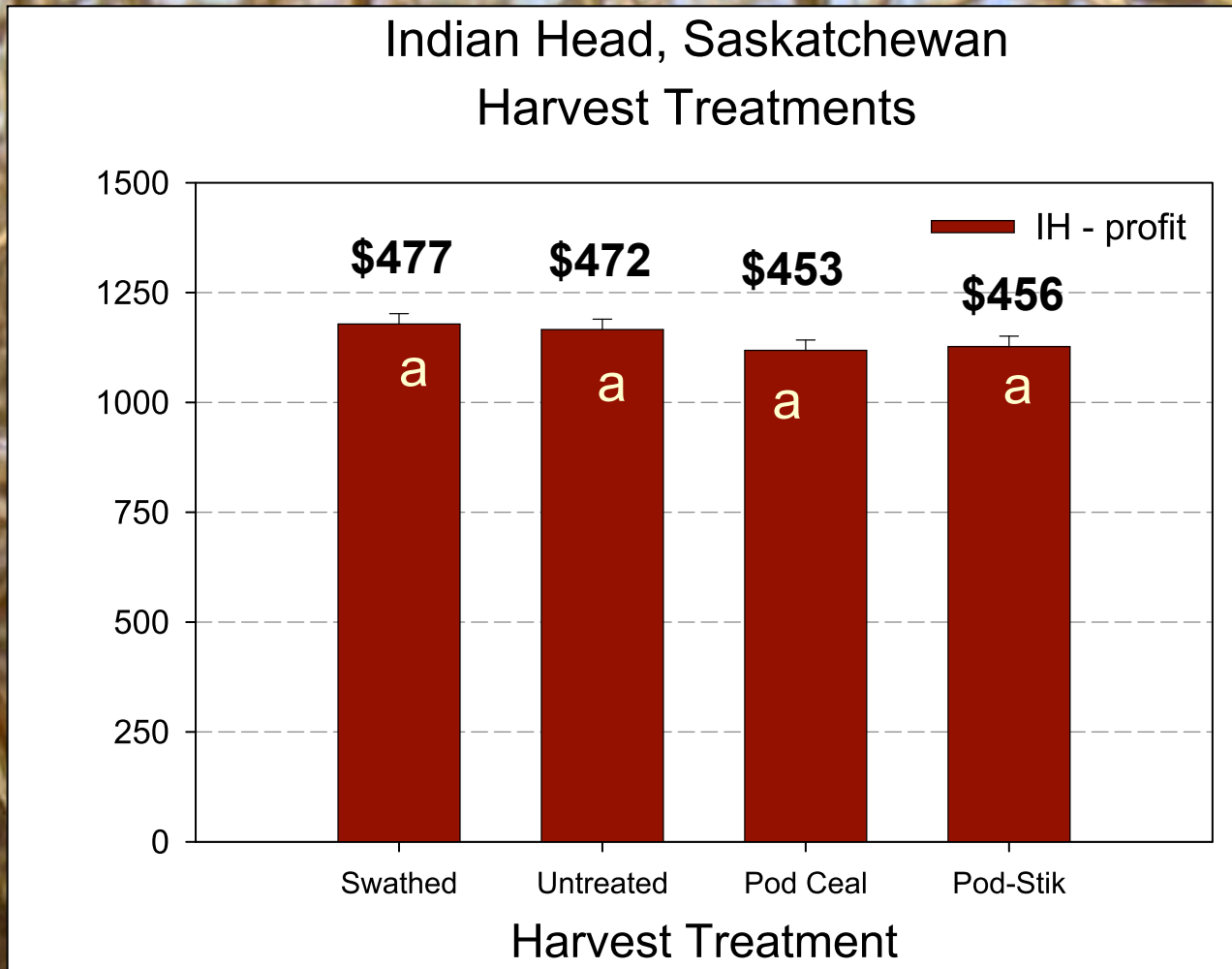
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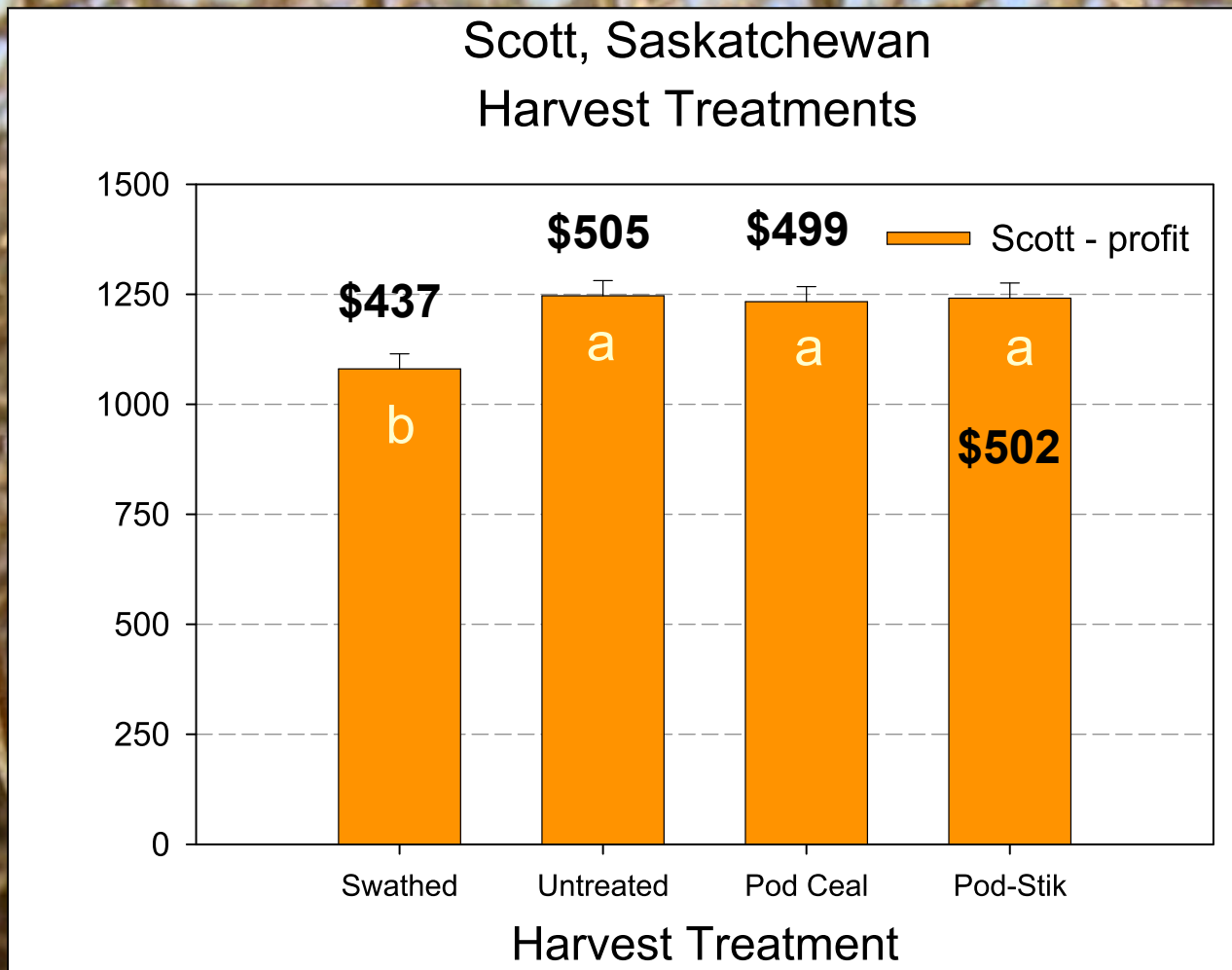
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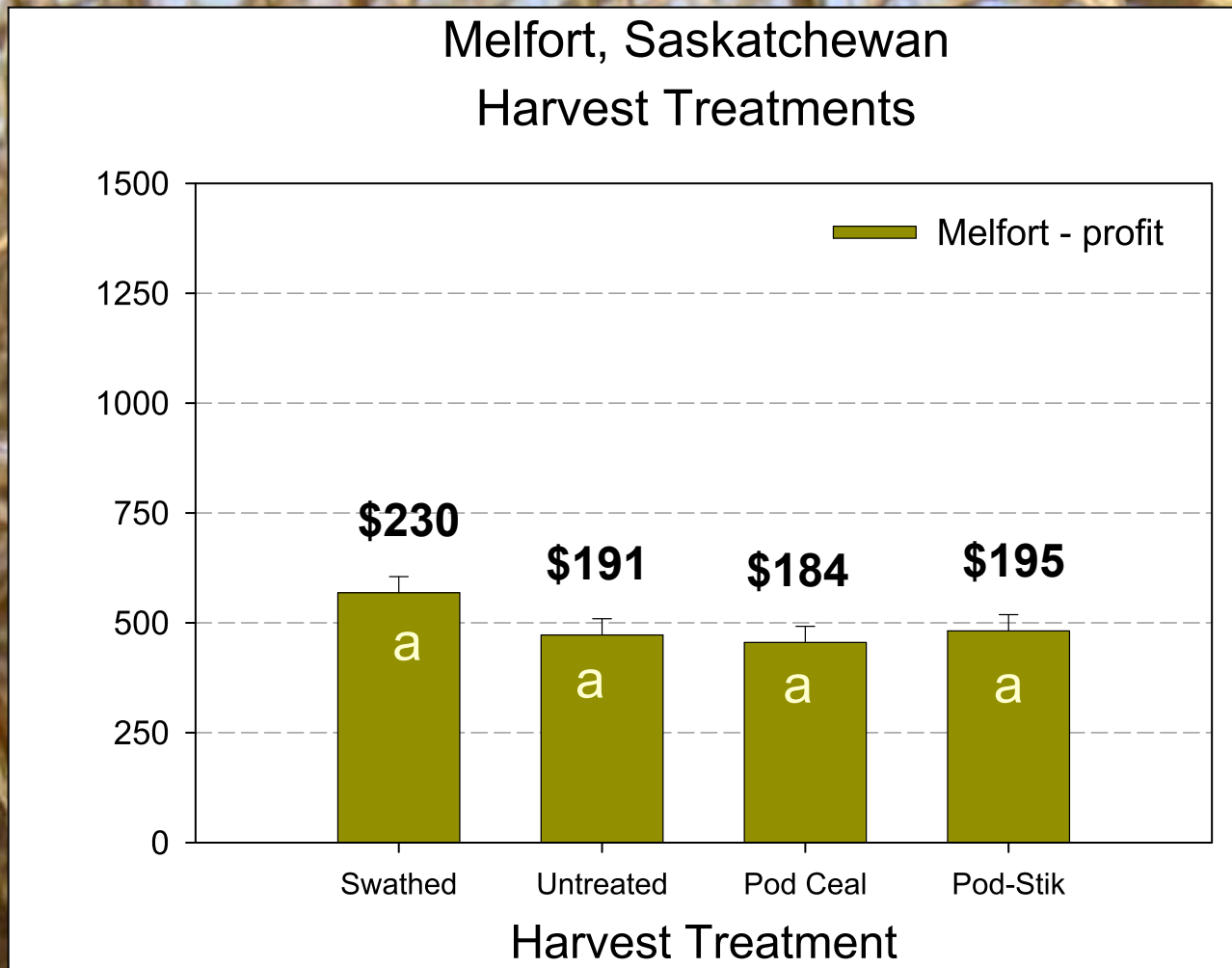
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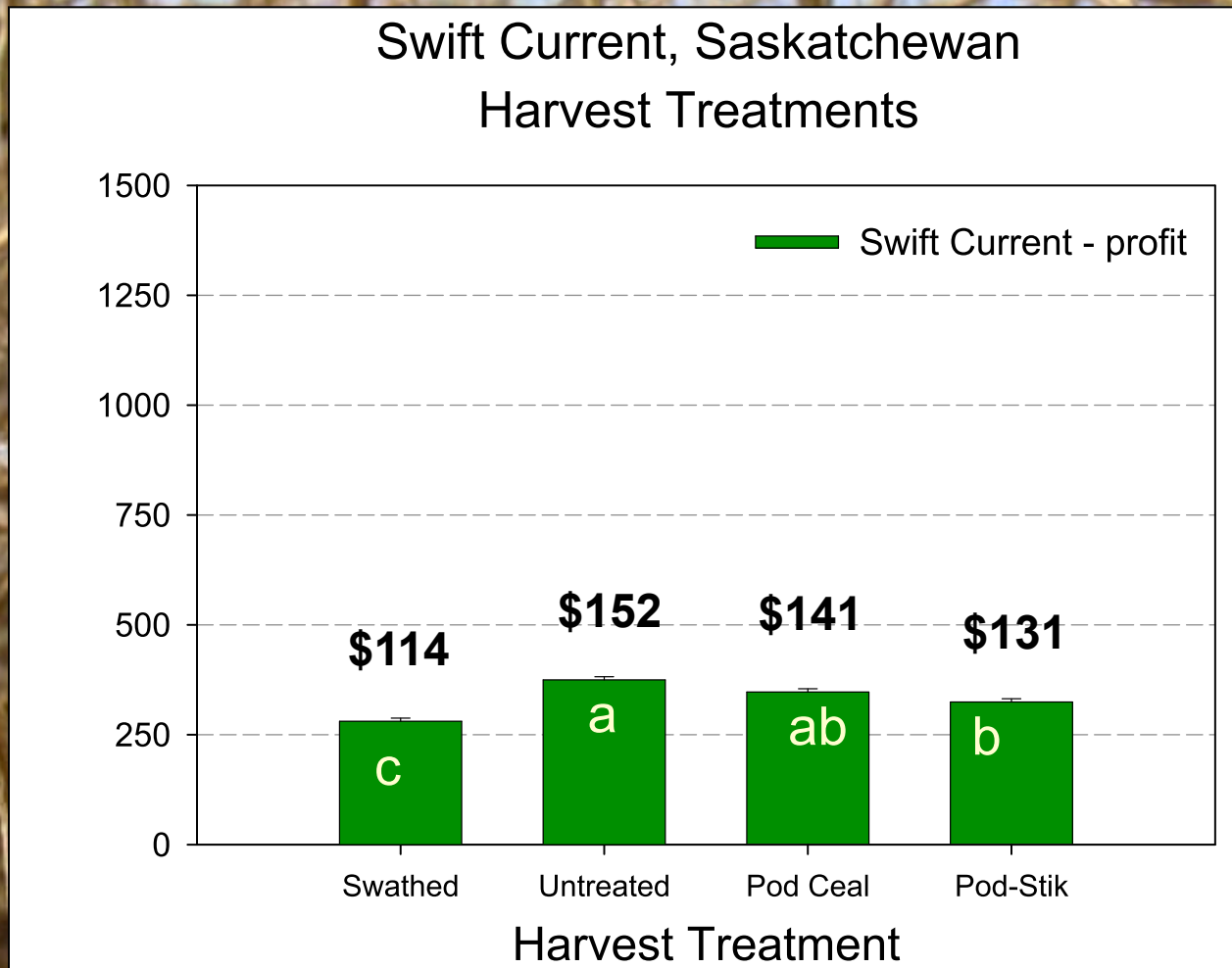
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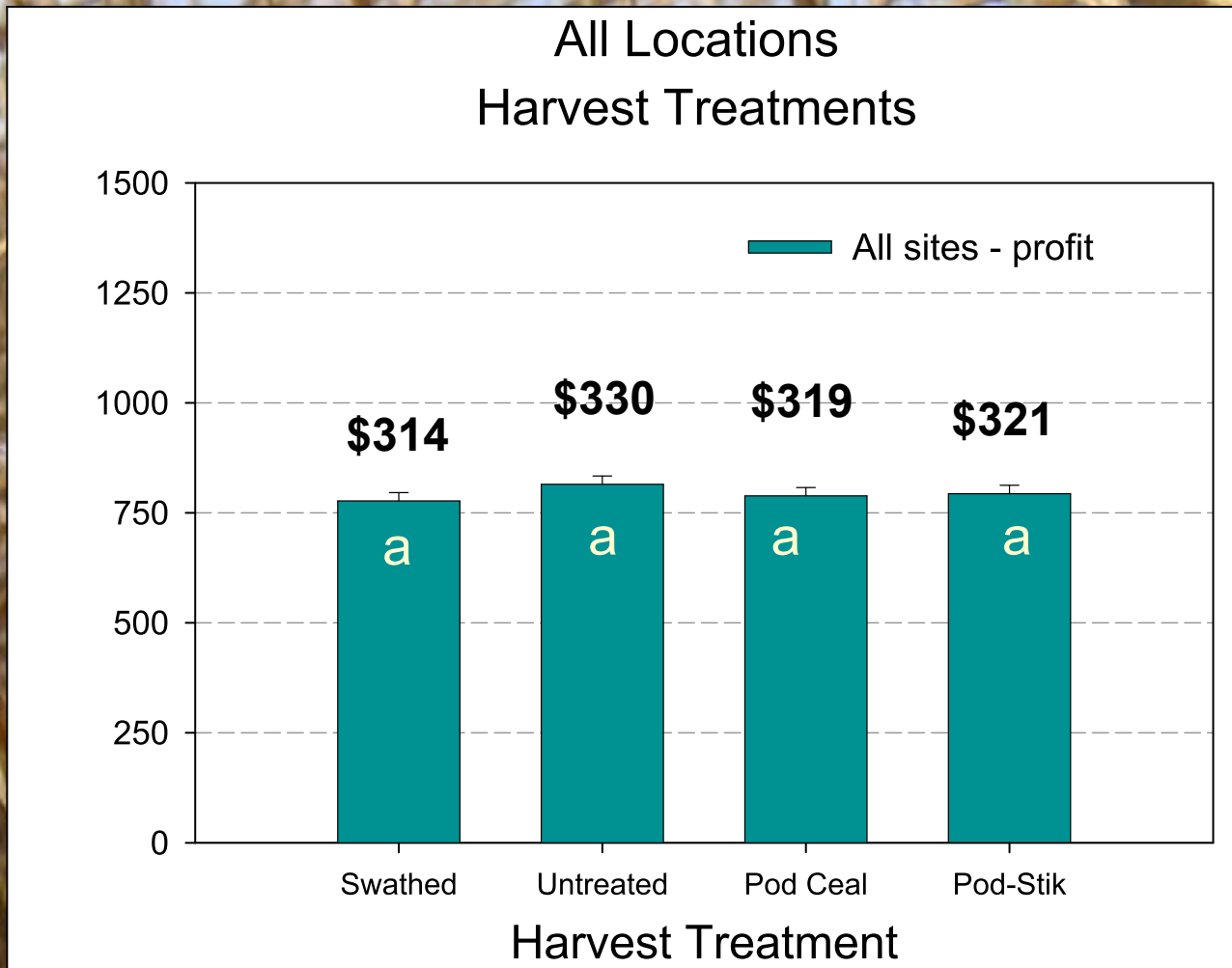
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Summary & Conclusions (Cultivars)



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- *Juncea* canola was not better suited to straight-

Summary & Conclusions (Harvest Treatments)



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- Swathing never resulted in higher yields compared with straight-cutting (even at Melfort) and swathed canola yielded lower at Scott and Swift Current
- No observed benefits to applying pod sealants (treated plots did not yield higher nor exhibit lower shattering losses than untreated plots in any cases)

Summary & Conclusions (General Recommendations)



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Summary & Conclusions (General Recommendations)

- Growers should not be discouraged from straight-cutting canola but...
 - Harvesting at optimal stage important relative to swathing
 - Do not attempt to straight-cut all canola if time is potentially limited (choose a manageable number of most suitable canola acres and swath the rest)

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 - If using pod sealants always leave untreated check strips to evaluate product performance
- Funding requested to continue work in 2010

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Thank You!!

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