



IHARF

INDIAN HEAD AGRICULTURAL RESEARCH FOUNDATION



2012 AGRONOMY UPDATE

Chris Holzapfel, MSc, PAg

IHARF Soil & Crop Management Seminar
February 6, 2013
Horizon Credit Union Centre, Melville, SK



IHARF

INDIAN HEAD AGRICULTURAL RESEARCH FOUNDATION

The Mission of the ***Indian Head Agricultural Research Foundation*** is to promote profitable and sustainable agriculture by facilitating research and technology transfer activities for the benefit of its members and the agricultural community at large.

STAFF & DIRECTORS

IHARF STAFF

Danny Petty

Executive Manager

Chris Holzapfel

Research Manager

Christiane Catellier

Research Assistant

Karter Kattler

Field and Plot Tech

2012 DIRECTORS

Scott Bonnor – Producer

Franck Groeneweg – Producer

Terry Rein – Producer

Barry Rapp – Prairie Plains Agro Ltd.

Keith Stephens – Producer

Brian Acton – Producer

Cameron Gibson – Producer

Gus Lagace – Paterson Grain

Ivan Ottenbreit - Producer

MEMBERS

~750 total members

LAND – AAFC-IHARF



LAND – IHARF FARMS



EQUIPMENT



IHARF Soil & Crop Management Seminar
February 6, 2013
Horizon Credit Union Centre, Melville, SK

FUNDING

- Grain revenues comprise approximately 50% of gross operating funds (~1200 ac)
- External research funding provided from a combination of government (all levels), producer groups & private industry

% of Outside Funding (Cash & In-Kind)			
	2010	2011	2012
Private Industry	49%	30%	36%
Producer Groups	36%	48%	45%
Government	15%	22%	19%

Extension (summer tours)

Annual Indian Head Crop Management Field Day

– Tuesday, July 23rd

Flax Crop Walk

– Thursday, July 25th

Crop Diagnostic School

– July 30th – August 1st (tentative)



RESEARCH ACTIVITIES (2012)

Small Plot Trials

- 54 small plot trials completed
- 42 IHARF, 12 AAFC-IHARF

Field-scale Trials

- Multi-product fungicide response trials with five crops
- Microclimate effects of tall versus short stubble on canola

Grain Aeration Project

- Increasing drying efficiency with automated fan cycling
- 3 year project, 4 runs in 3 pairs of bins in 2012 (barley and wheat)



CANOLA FUNGICIDE TRIALS (ADOPT)

Objective: Evaluate effects of foliar fungicide applications on canola seed yield and disease under a range of environmental field conditions

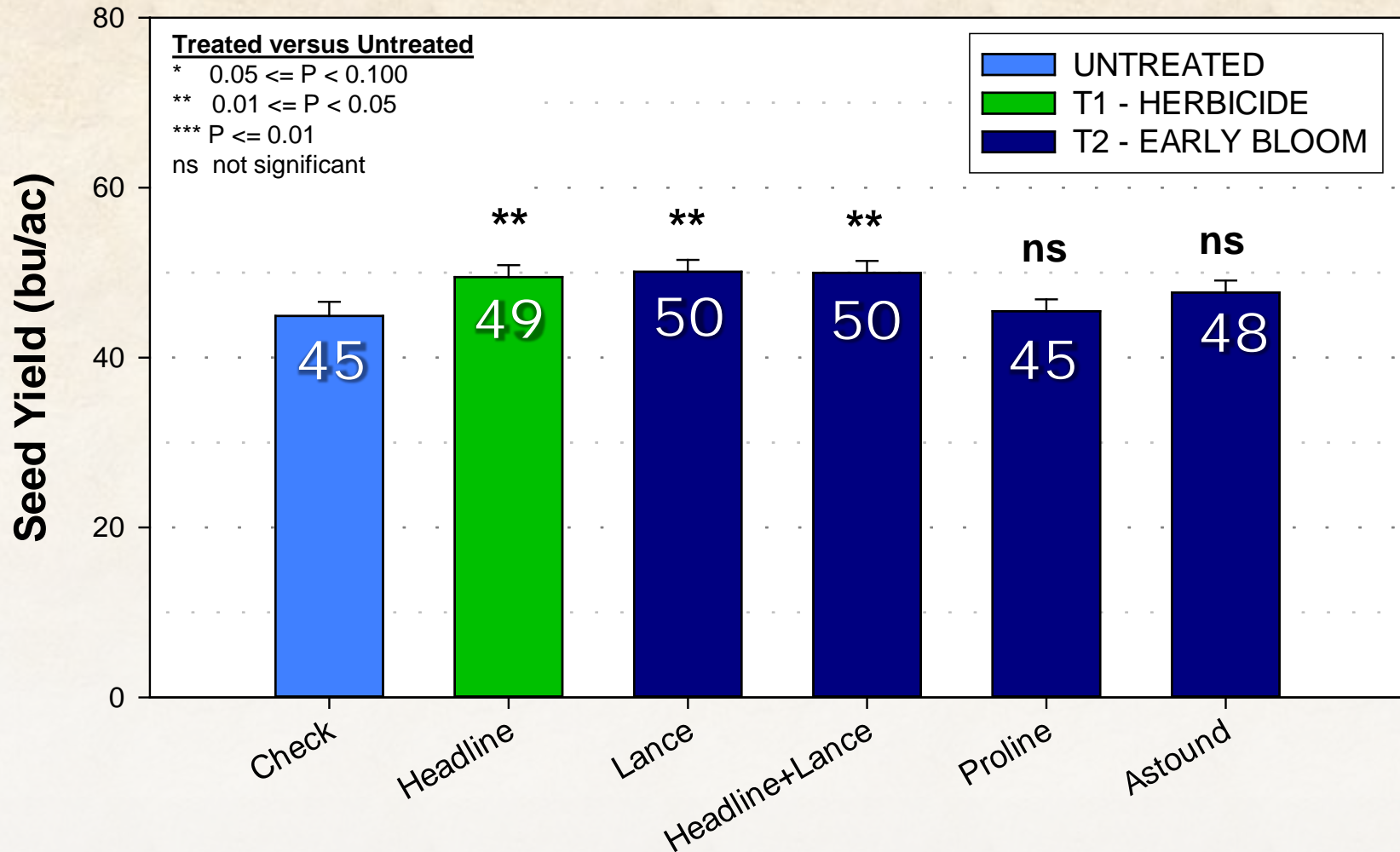
Sites (5): Indian Head (2011-12), Swift Current (2011-2012), Scott (2012) & Melfort (2012)

Data Collection: 1) sclerotinia incidence / severity 2) seed yield



FUNGICIDE EFFECTS ON CANOLA YIELD

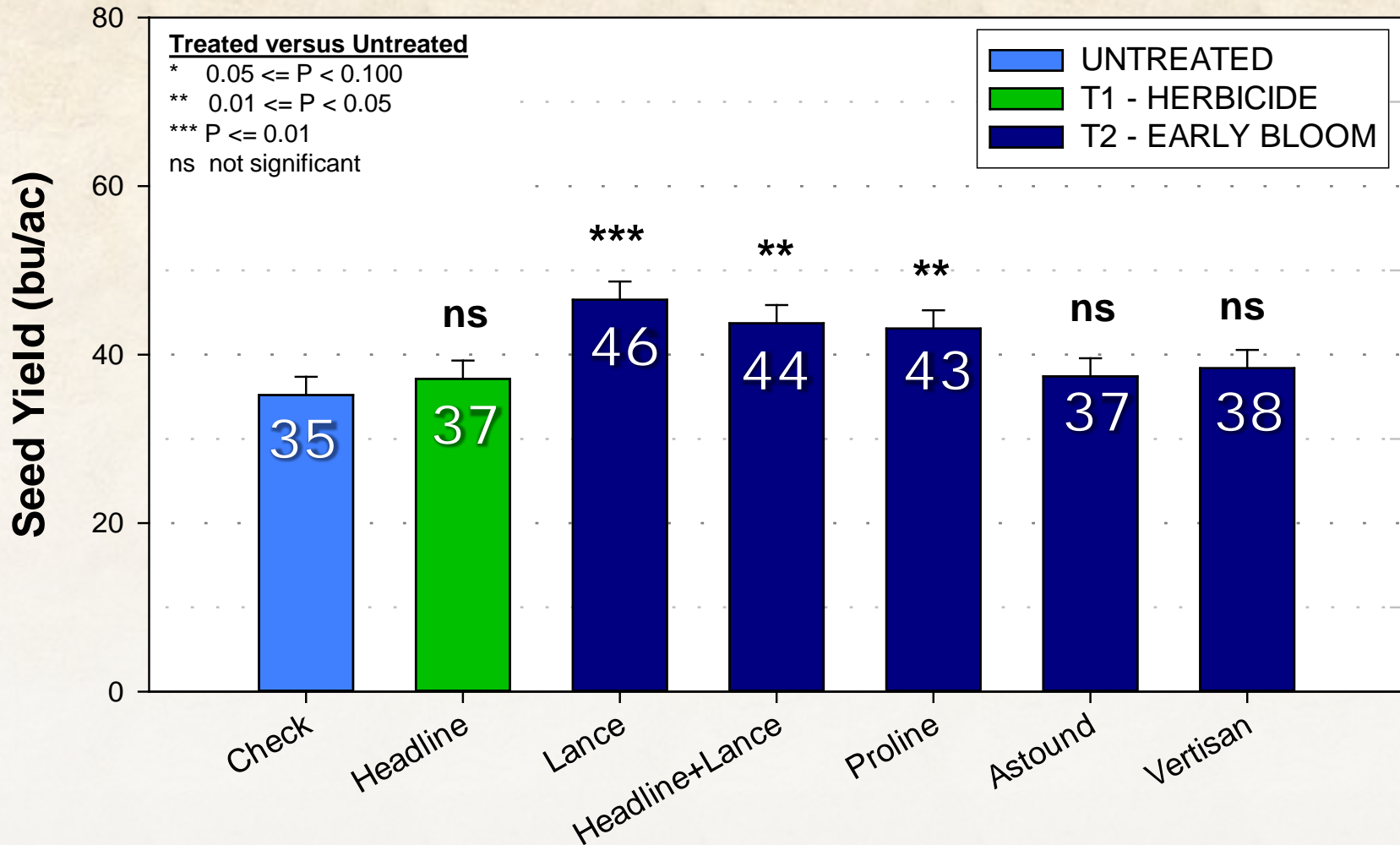
INDIAN HEAD 2011



Fungicide Treatment

FUNGICIDE EFFECTS ON CANOLA YIELD

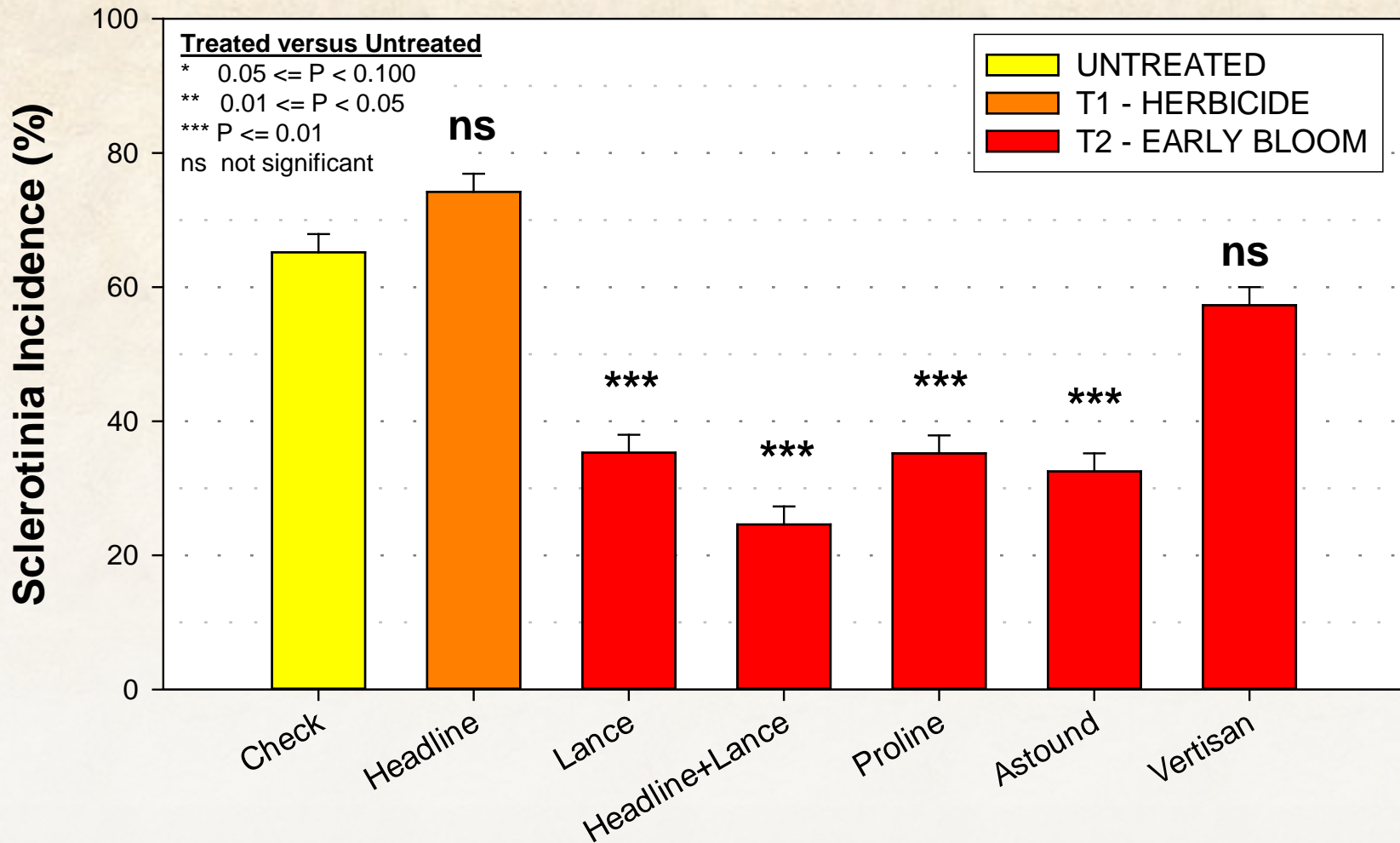
INDIAN HEAD 2012



Fungicide Treatment

FUNGICIDE EFFECTS ON SCLEROTINIA

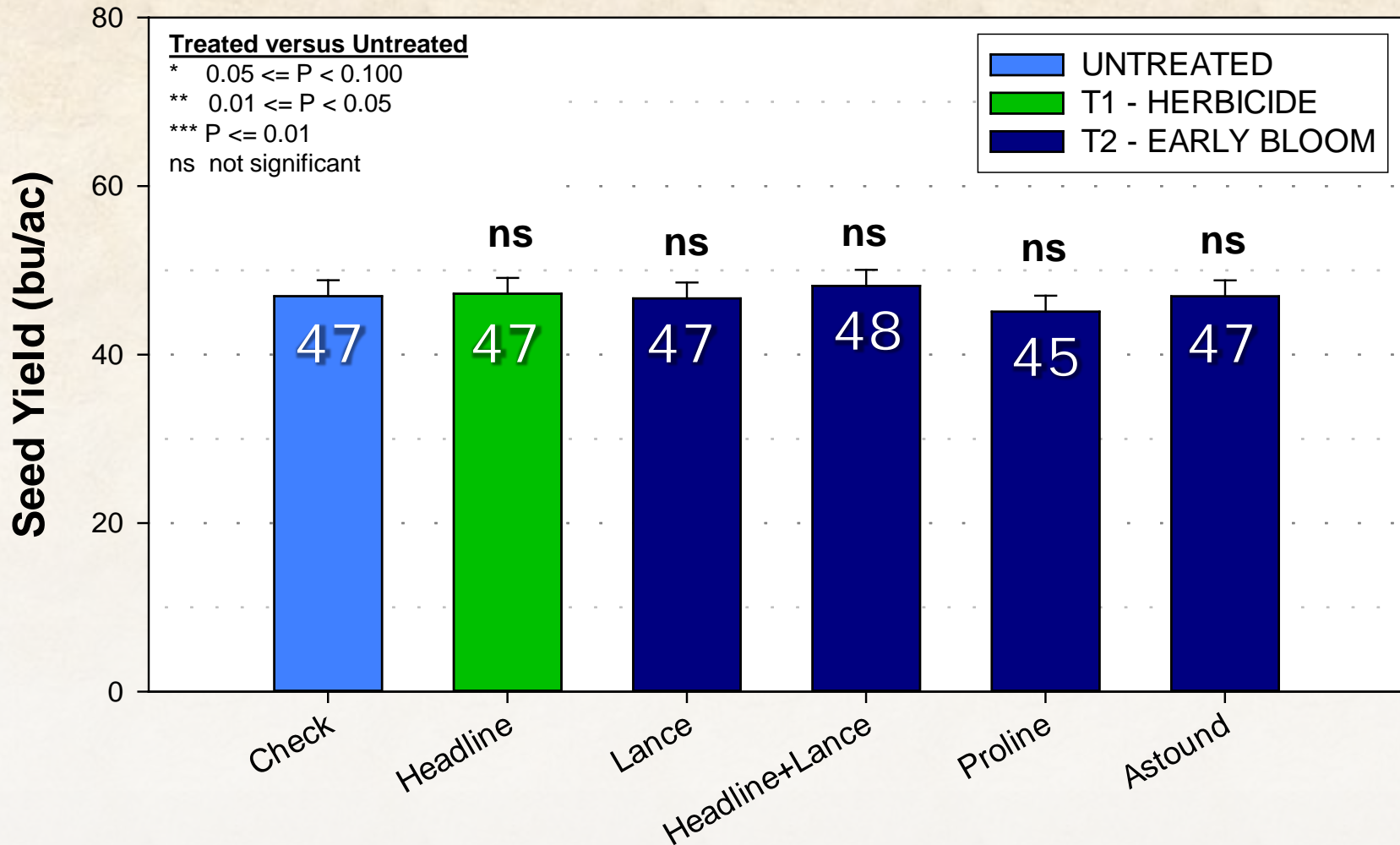
INDIAN HEAD 2012



Fungicide Treatment

FUNGICIDE EFFECTS ON CANOLA YIELD

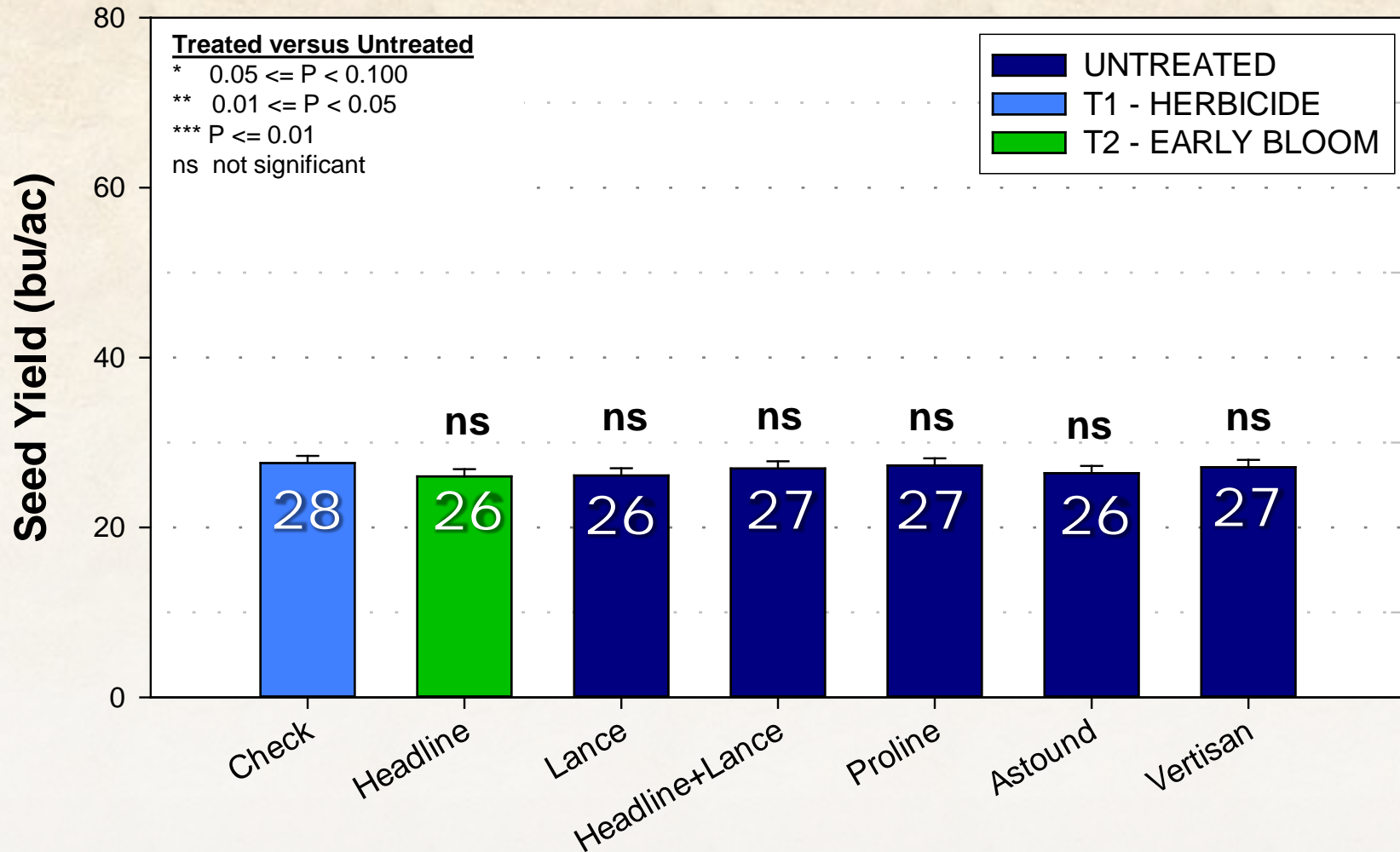
SWIFT CURRENT 2011



Fungicide Treatment

FUNGICIDE EFFECTS ON CANOLA YIELD

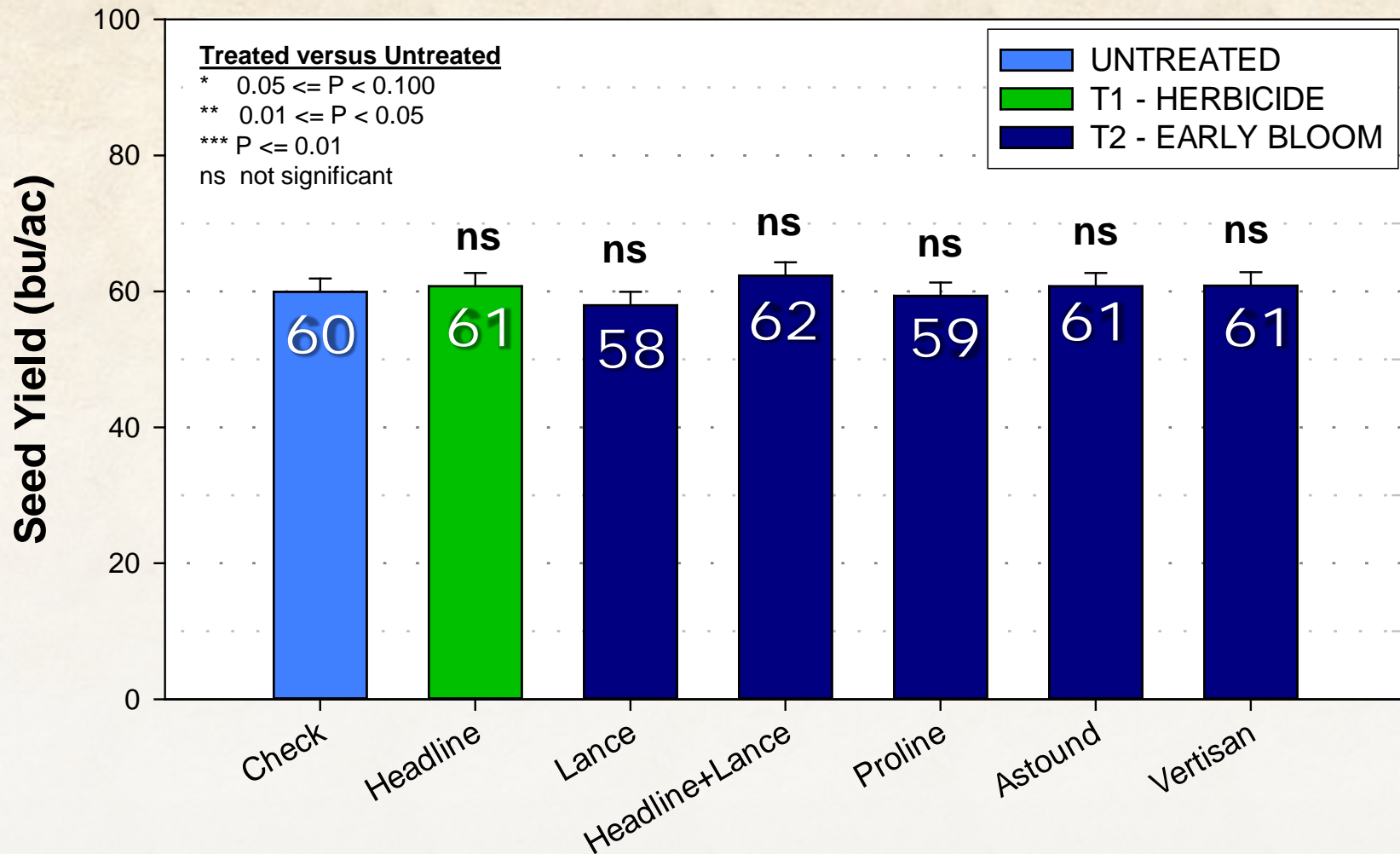
SWIFT CURRENT 2012



Fungicide Treatment

FUNGICIDE EFFECTS ON CANOLA YIELD

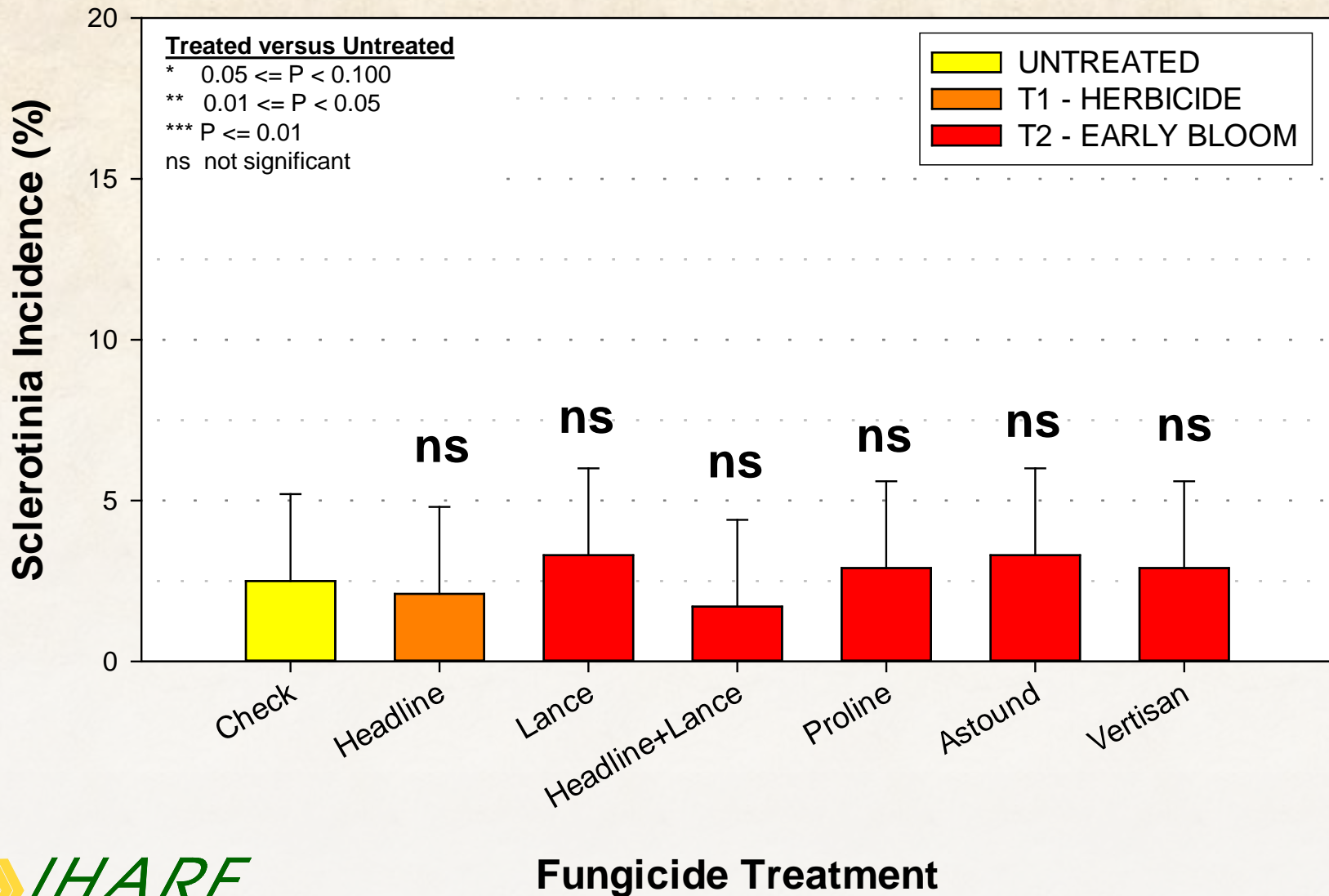
MELFORT 2012



Fungicide Treatment

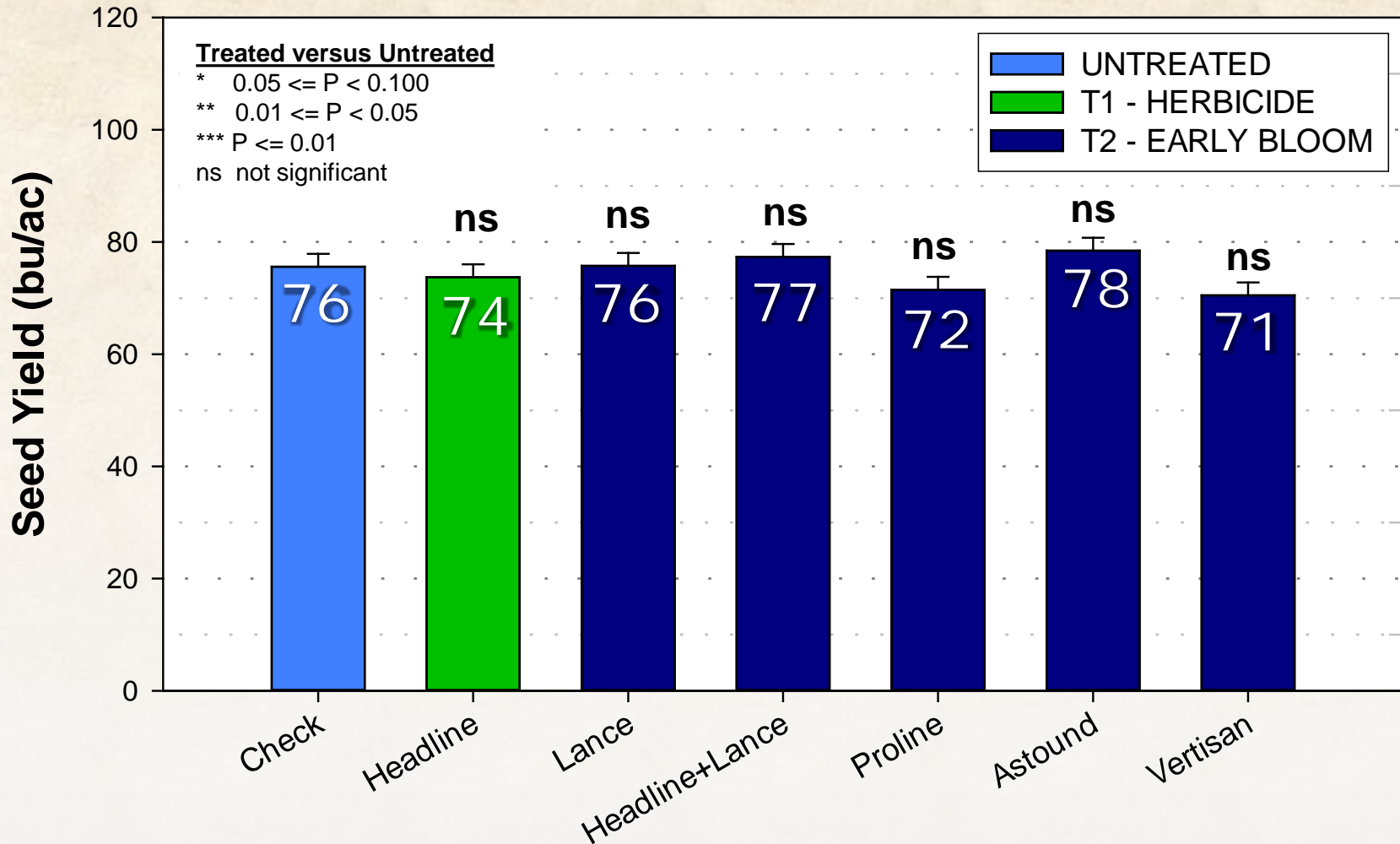
FUNGICIDE EFFECTS ON SCLEROTINIA

MELFORT 2012



FUNGICIDE EFFECTS ON CANOLA YIELD

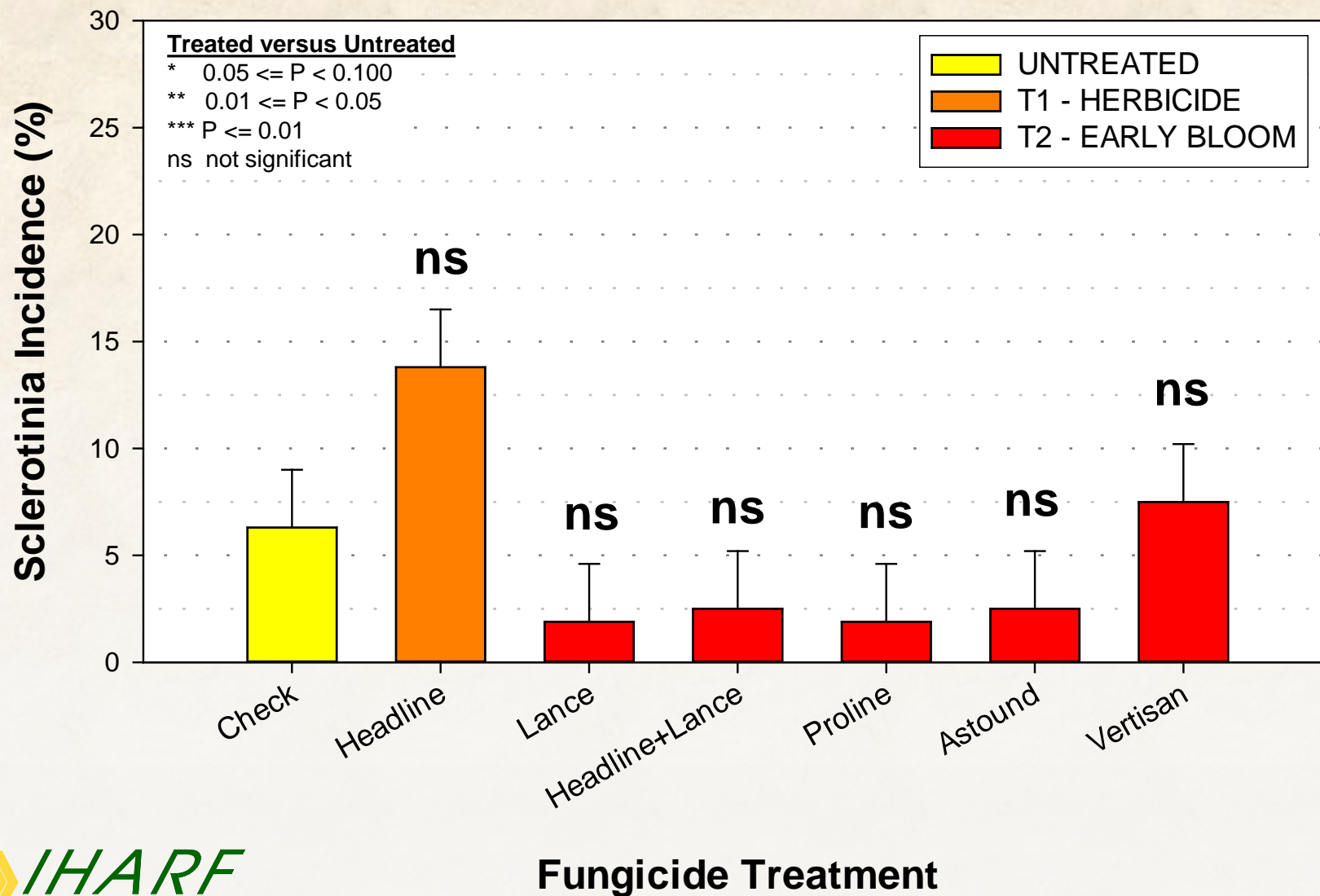
SCOTT 2012



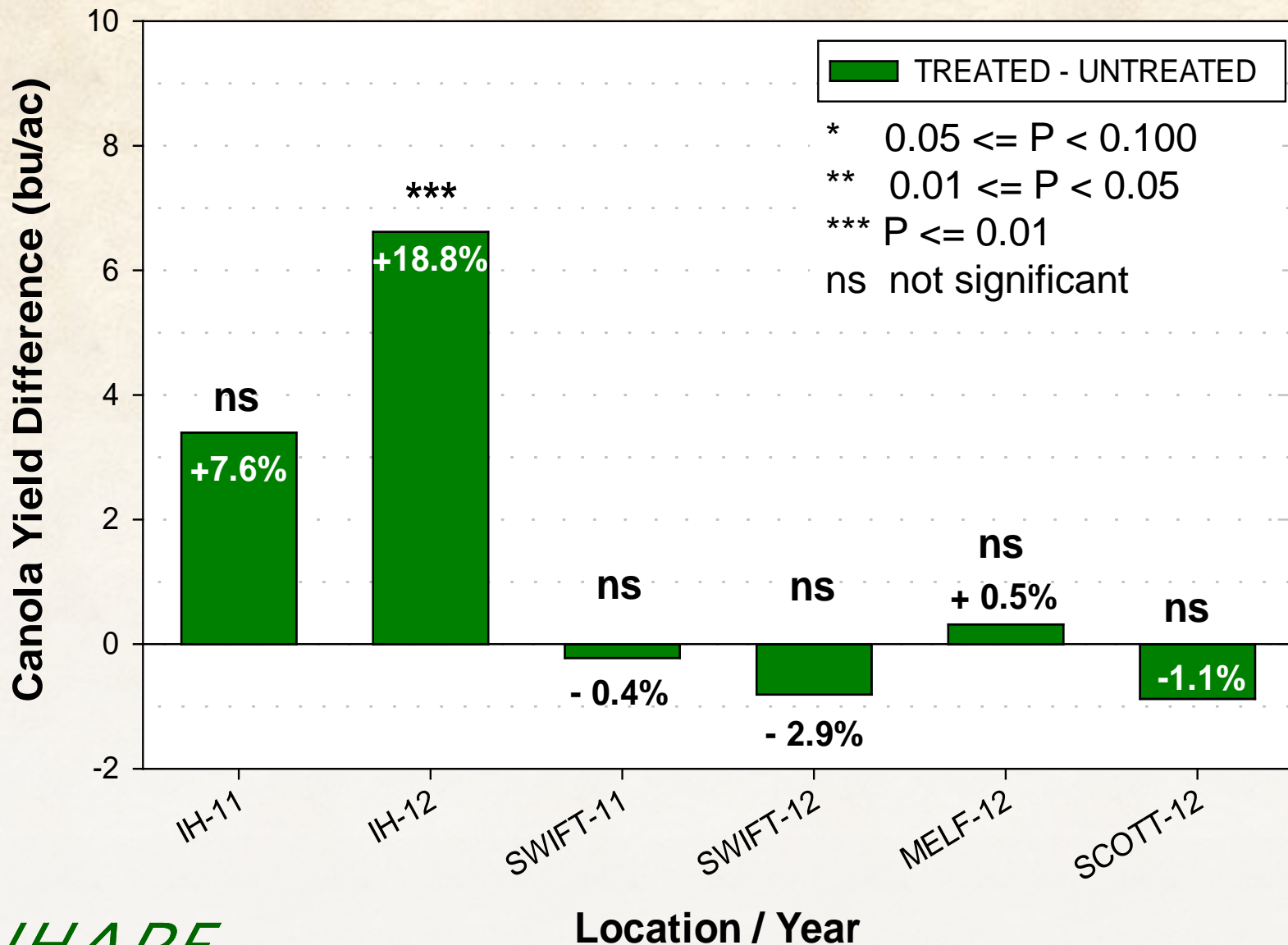
Fungicide Treatment

FUNGICIDE EFFECTS ON SCLEROTINIA

SCOTT 2012



CHECK VS SCLEROTINIA FUNGICIDE (CANOLA)



FLAX FUNGICIDE TRIALS (IHARF)

Objective: Evaluate effects of Group 11 fungicide applications on flax yield under a range of environmental field conditions

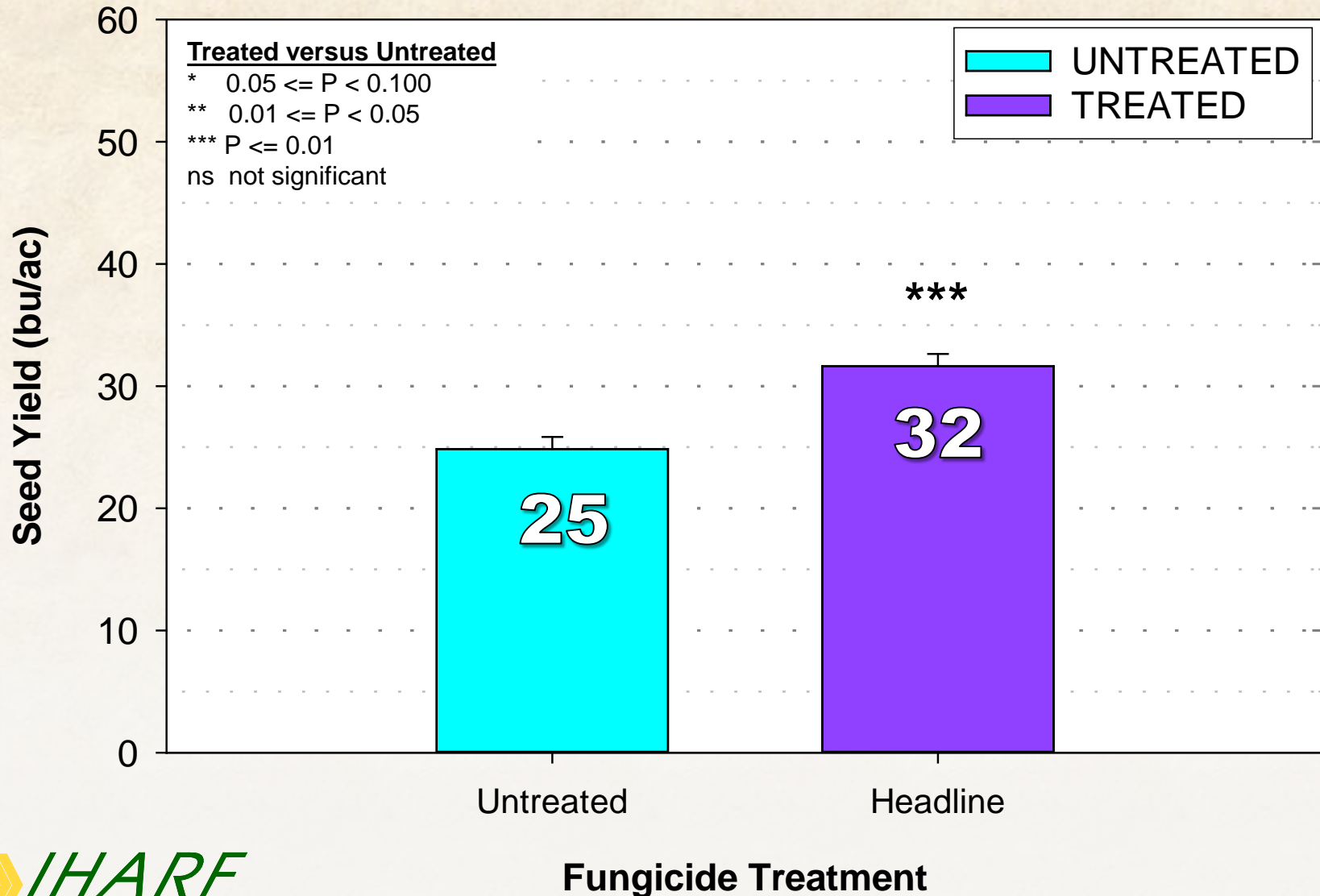
Sites (5): Indian Head (2010-12) and Swift Current (2010-2011)

Data Collection: 1) seed yield



FUNGICIDE EFFECTS ON FLAX YIELD

Indian Head 2010

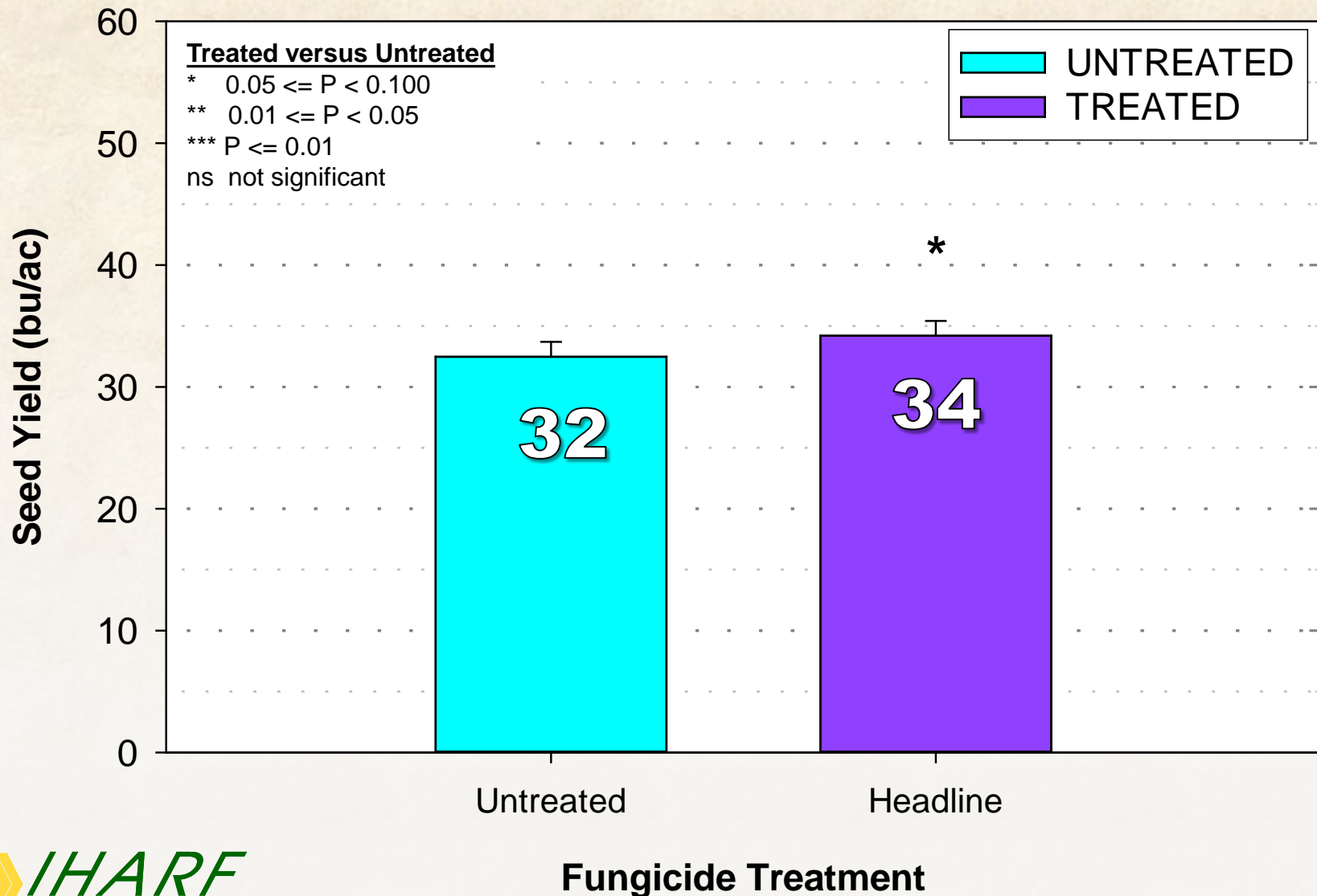


VISUAL RESPONSE TO FUNGICIDE (HIGH DISEASE PRESSURE)



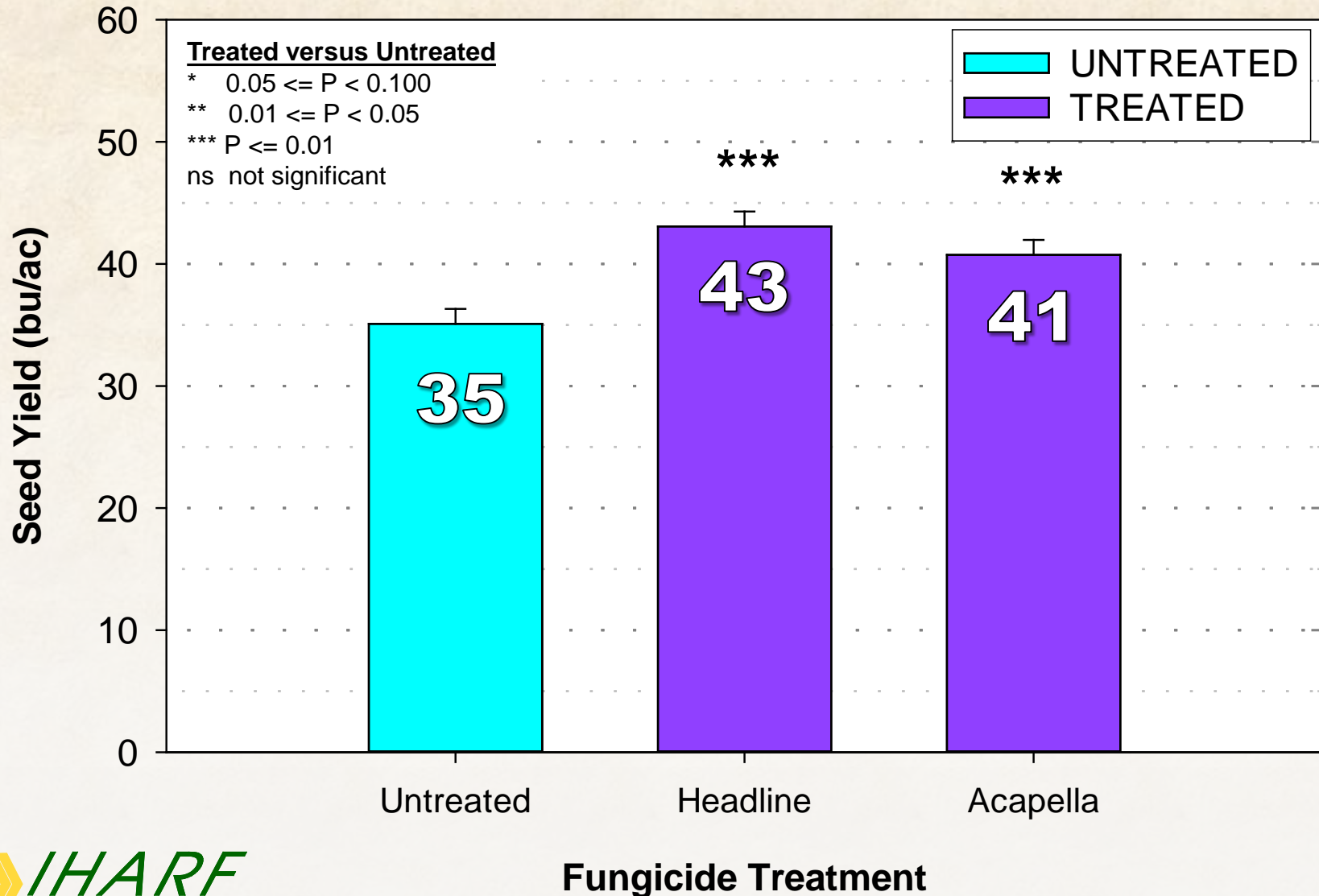
FUNGICIDE EFFECTS ON FLAX YIELD

Indian Head 2011



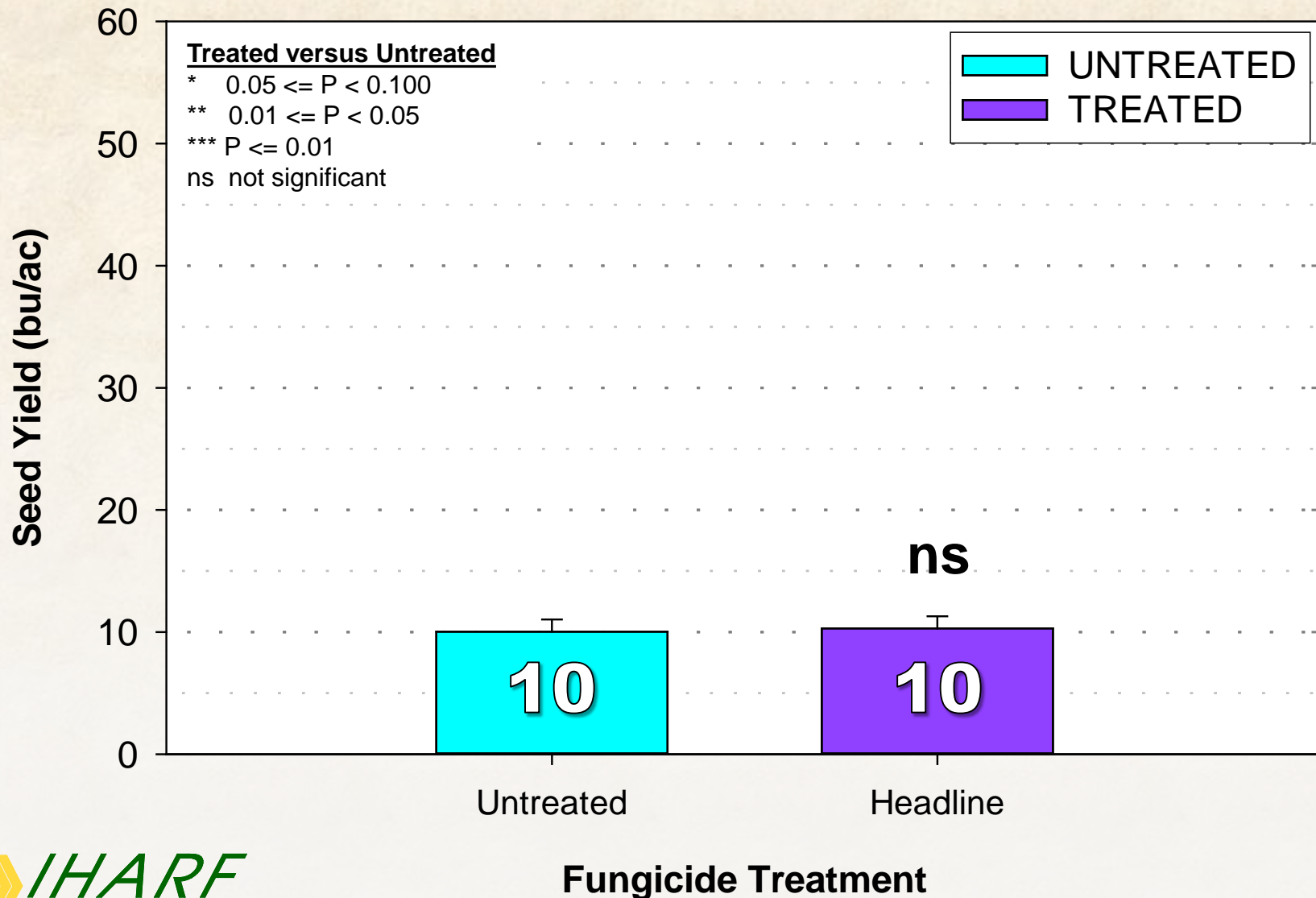
FUNGICIDE EFFECTS ON FLAX YIELD

Indian Head 2012



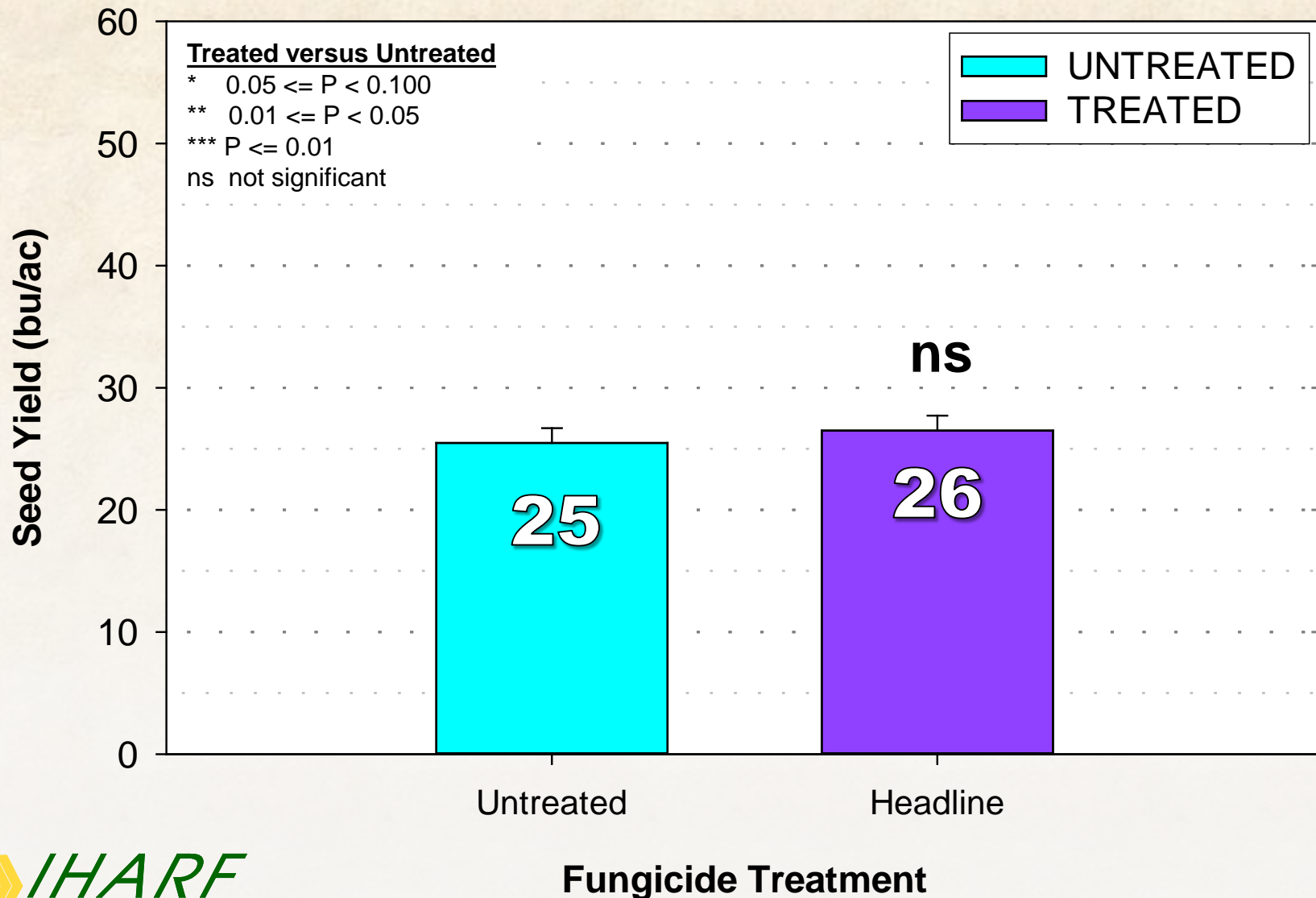
FUNGICIDE EFFECTS ON FLAX YIELD

Swift Current 2010

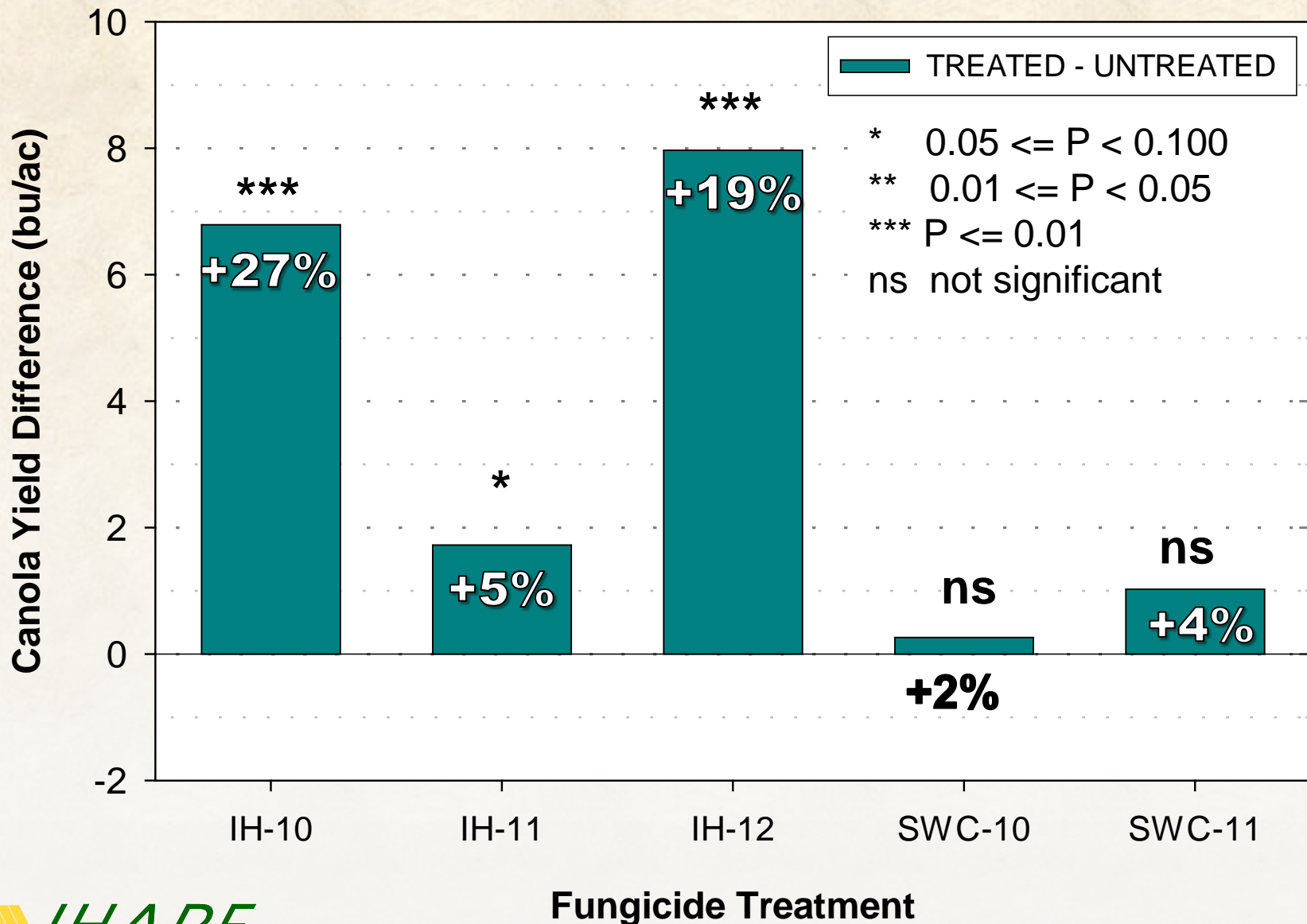


FUNGICIDE EFFECTS ON FLAX YIELD

Swift Current 2011



CHECK VS FUNGICIDE (FLAX)



CANOLA & FLAX FUNGICIDE TRIAL - SUMMARY

- ✘ Yield response to foliar fungicide generally not observed in absence of disease but were substantial and presumably economical under heavy disease pressure
- ✘ Canola response to sclerotinia fungicide highly variable
 - + Not typically observed when disease incidence was 5% or lower
 - + ~22% yield increase with fungicide under heavy disease pressure
- ✘ Flax response to fungicide relatively consistent at Indian Head but have not conducted trials under dry conditions
 - + No response observed at Swift Current in either 2010 or 2011
- ✘ Decisions should be based on presence of disease or risk of disease developing as much as possible
 - + Economics of annual, preventative fungicide applications are questionable majority of crops in thin-Black soil zone

CANOLA SHATTERING RESEARCH (2011-2014)

SASKCANOLA / MB CANOLA GROWERS

Objectives:

- ✗ Investigate the importance of cultivar selection for straight combining canola
- ✗ Quantify canola shattering / pod drop losses under varying environmental conditions and assess the overall risks of straight-combining

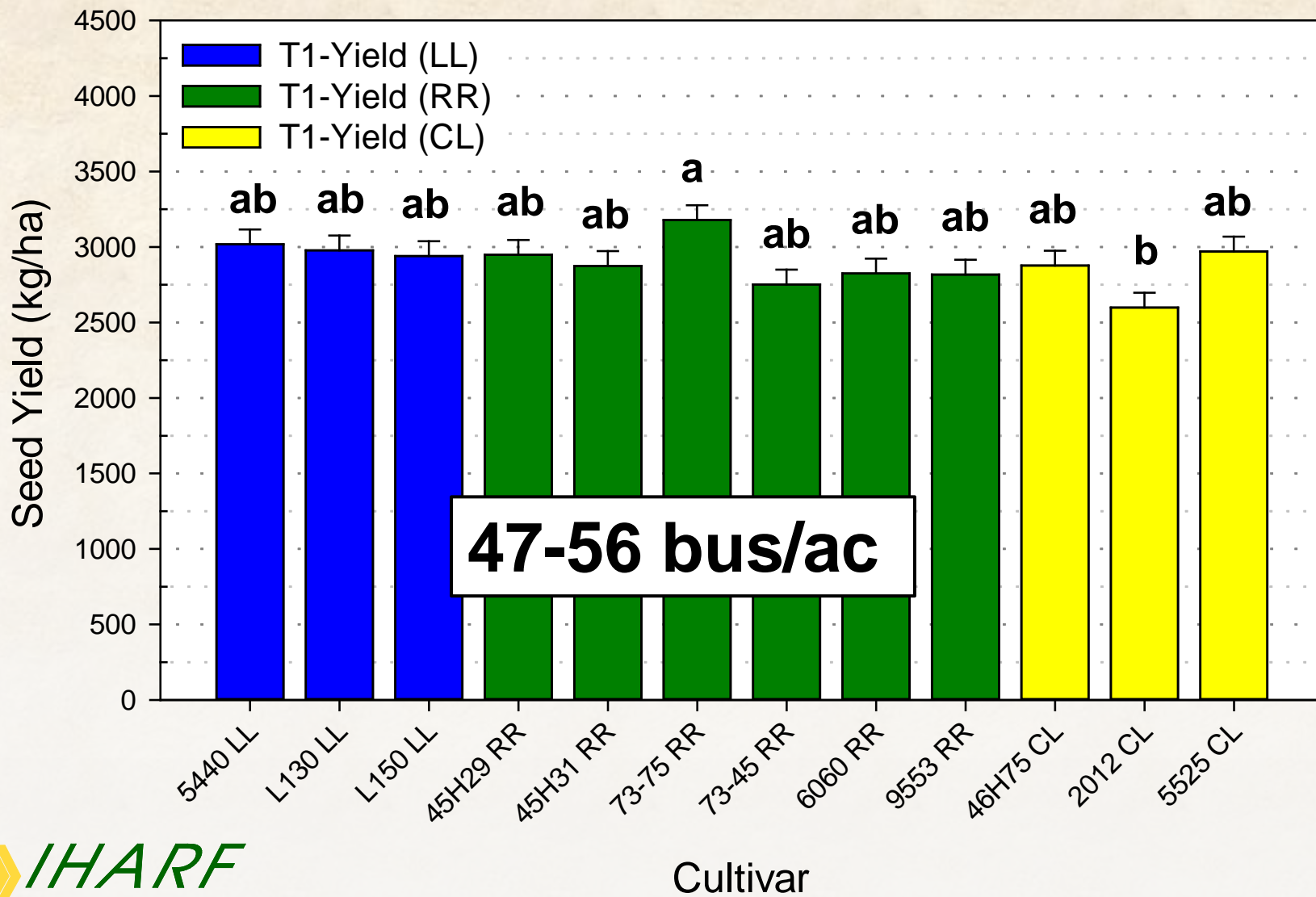
Locations: Indian Head, Swift Current, Scott & Melfort (12-14)

Cultivars (2011-12):

InVigor 5540	Pioneer HiBred 45H29	Dekalb 73-45	Pioneer HiBred 46H75
InVigor L130	Pioneer HiBred 45H31	Brett Young 6060	Nexera 2012 CL
InVigor L150	Dekalb 73-75	Proven 9553	Brett Young 5525

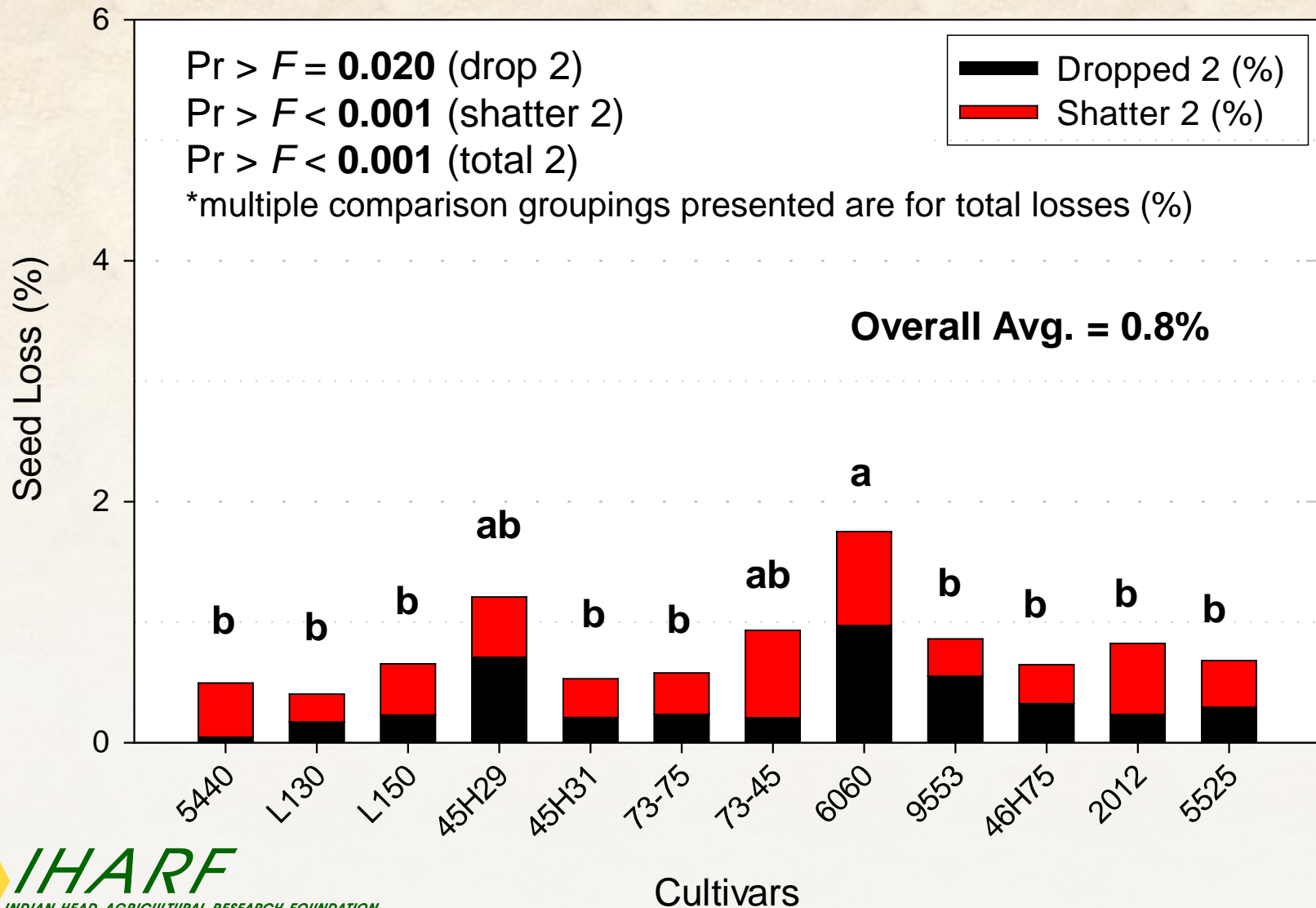
STRAIGHT-COMBINED SEED YIELD

(2011 ALL LOCATIONS: EARLY-OPTIMAL TIMING)



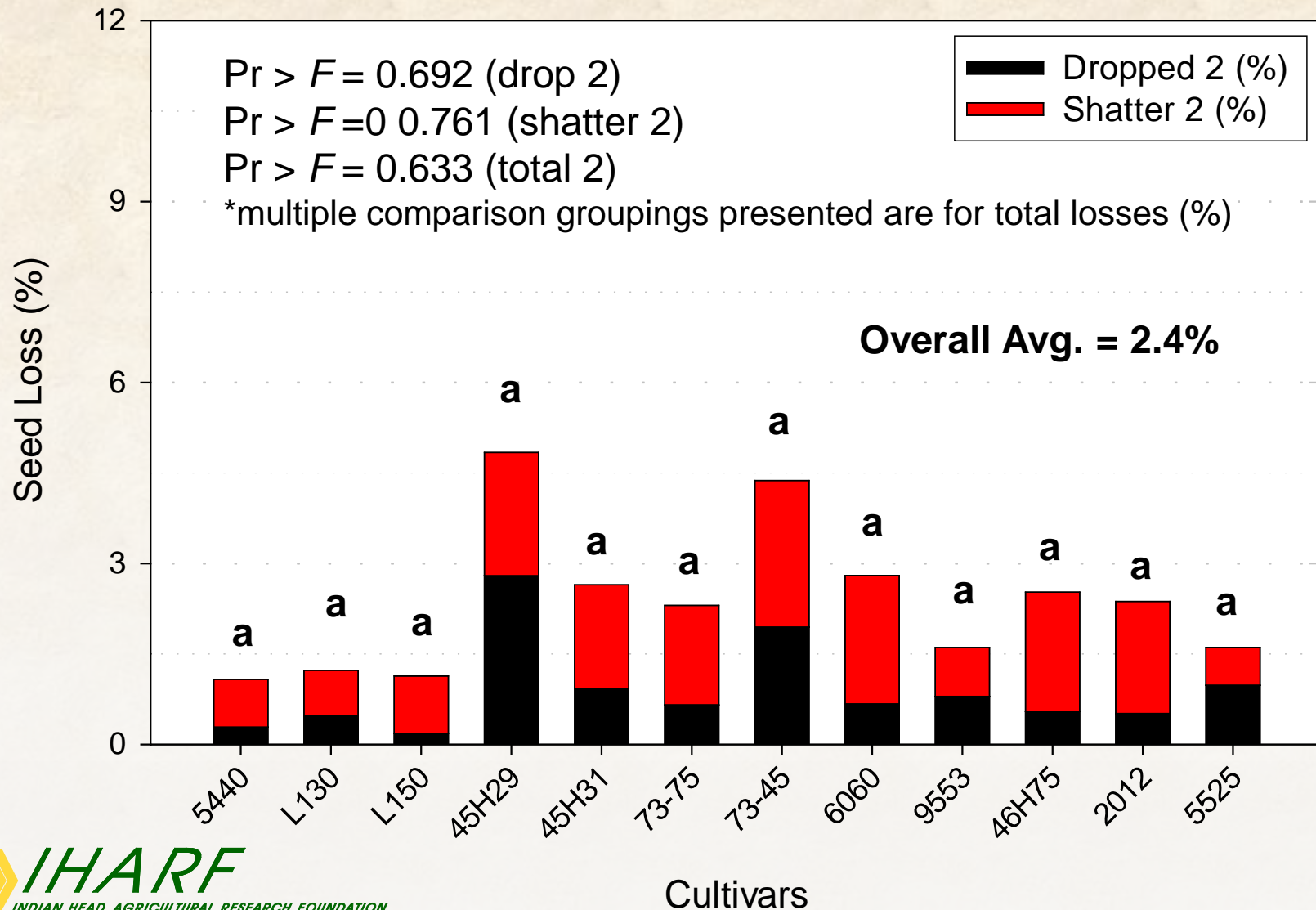
CANOLA SEED LOSS (DELAYED HARVEST)

Indian Head - 2011



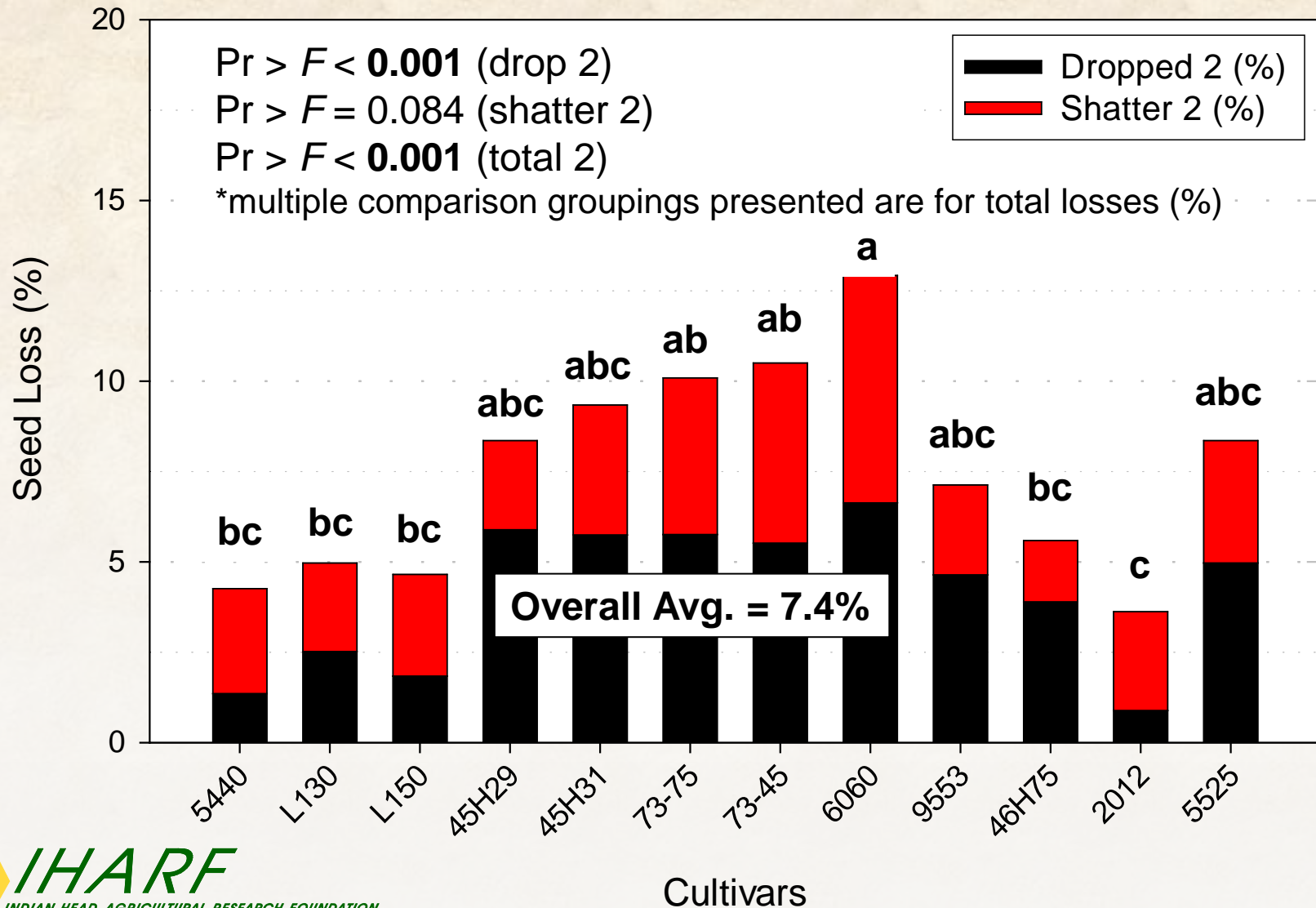
CANOLA SEED LOSS (DELAYED HARVEST)

Swift Current - 2011



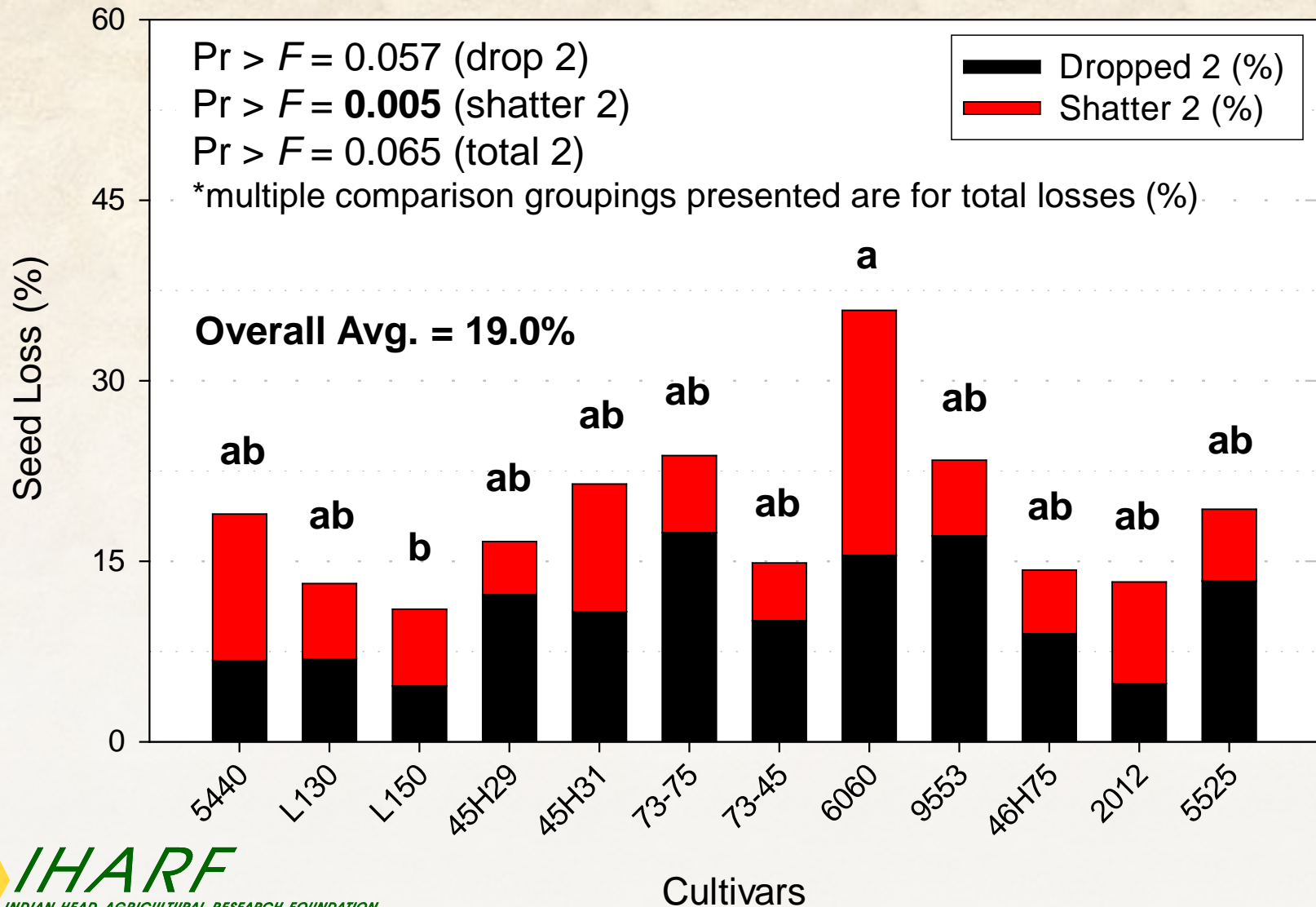
CANOLA SEED LOSS (DELAYED HARVEST)

Scott - 2011



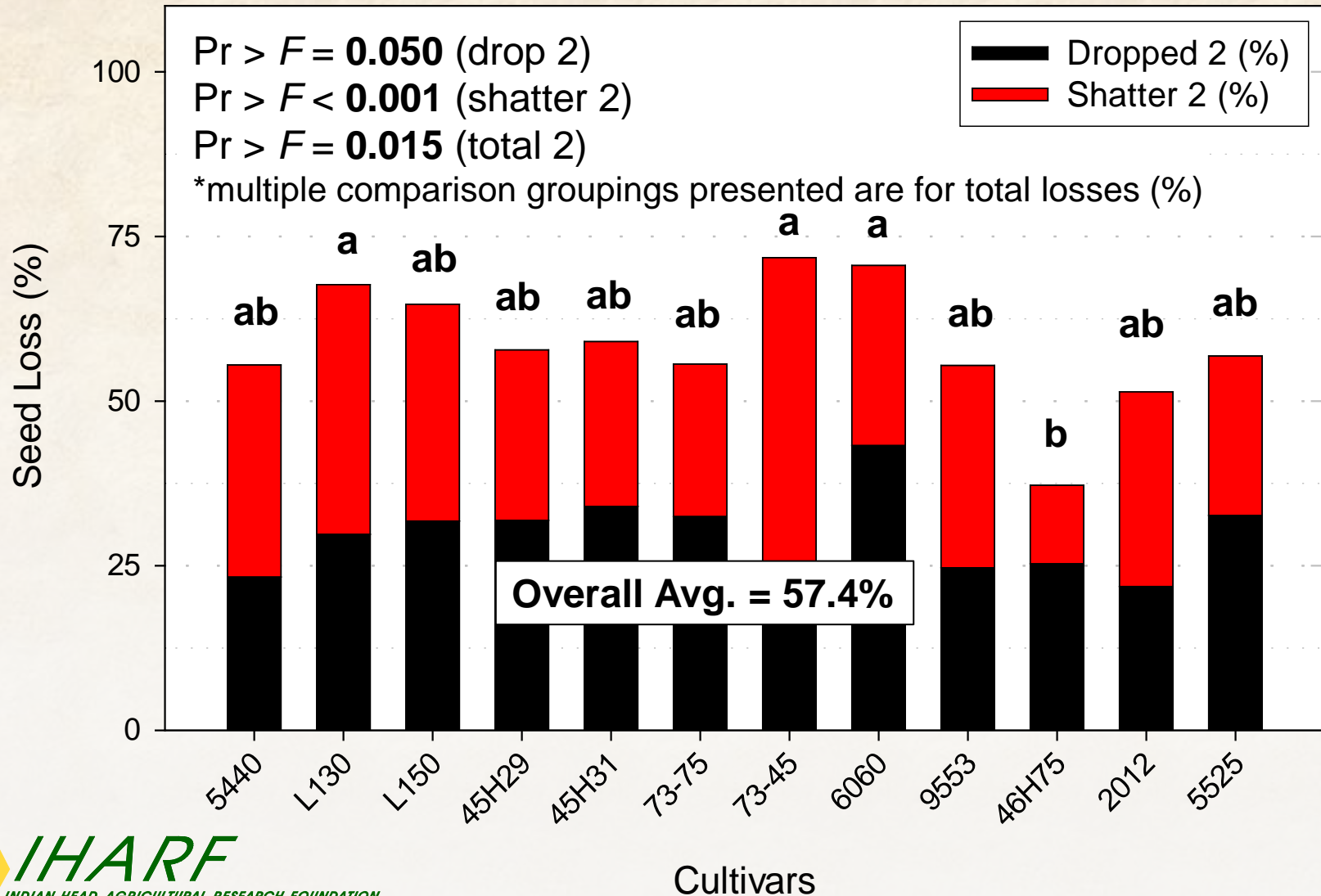
CANOLA SEED LOSS (DELAYED HARVEST)

Swift Current - 2012



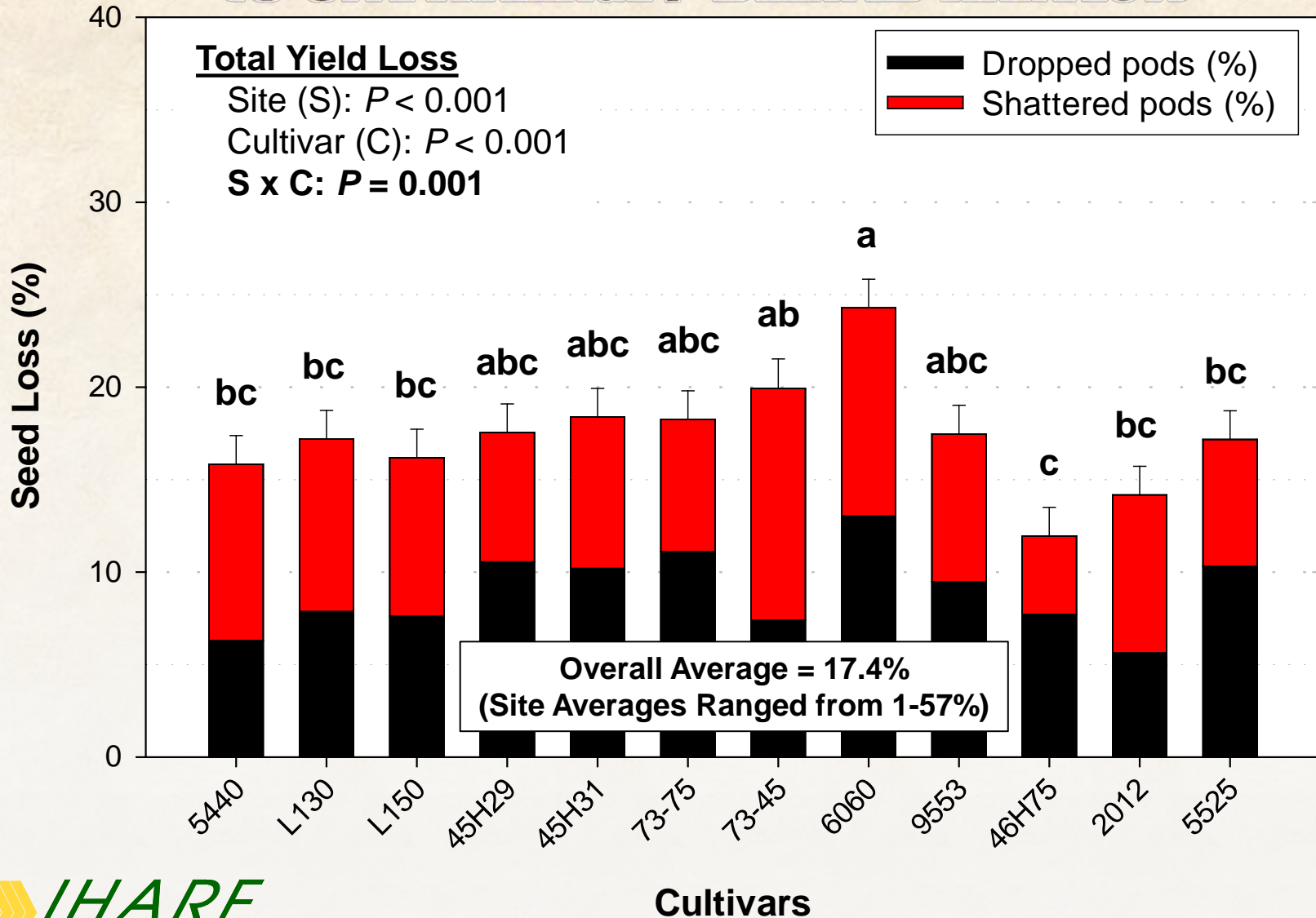
CANOLA SEED LOSS (DELAYED HARVEST)

Indian Head - 2012



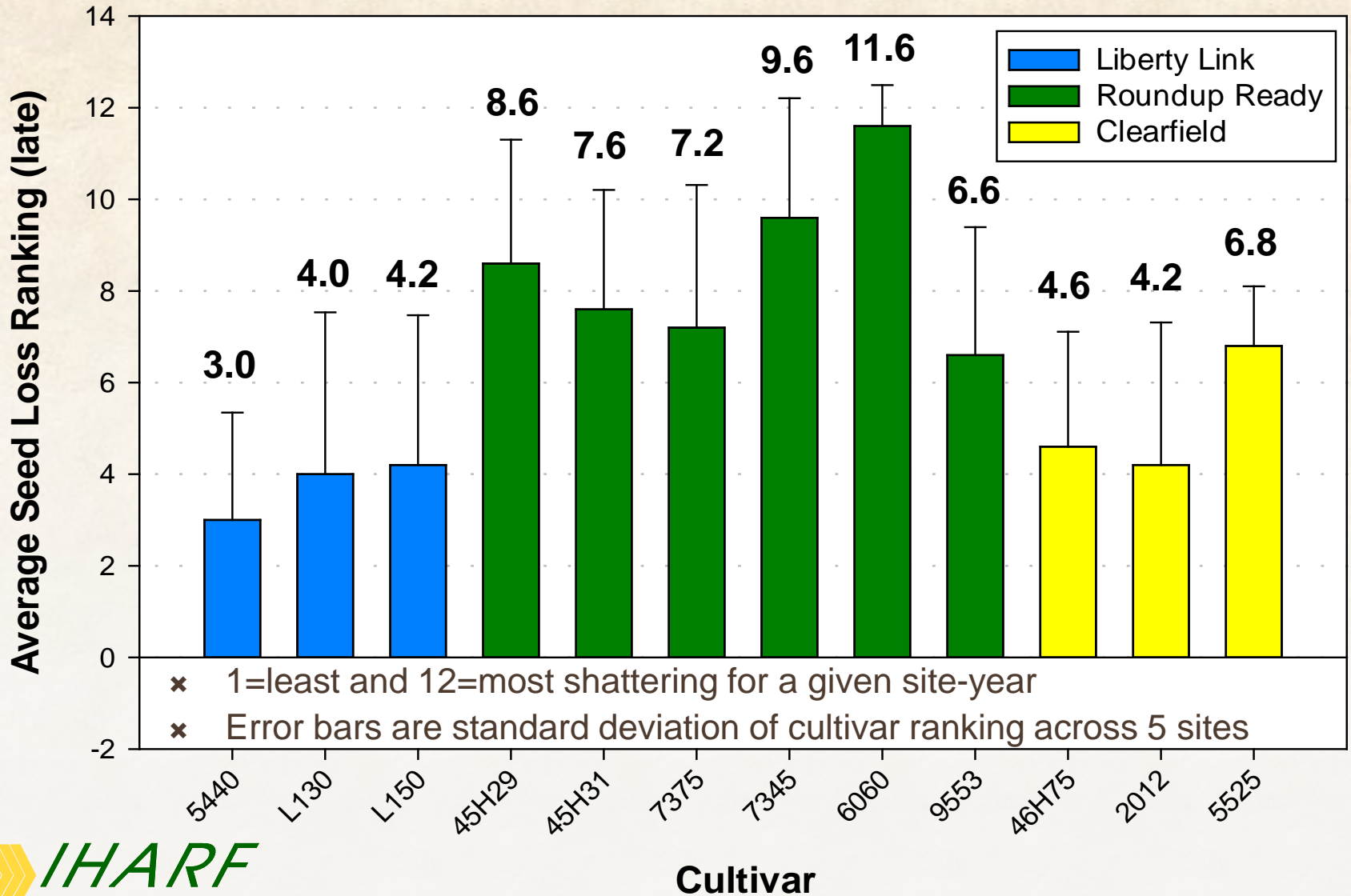
OBSERVED SEED LOSS

(5 SITE AVERAGE / DELAYED HARVEST)



CANOLA CULTIVAR RANKINGS

All Sites (2011-2012)



CANOLA SHATTERING RESEARCH (2011-2014)

PRELIMINARY CONCLUSIONS

- ✘ Average environmental seed losses ranged from >1-21% at 'optimal' harvest time and >1-57% with 3-4 week delay
- ✘ Averaged across sites & cultivars, total losses were 5.5% at 'optimal' time and 17.4% with delayed harvest
- ✘ Losses due to pod drop are substantial – 34% of total losses at optimal harvest time, 51% with delayed harvest
- ✘ Significant varietal differences frequently detected but not always consistent from site to site – substantial losses in all cultivars when severed conditions encountered
- ✘ Several cultivars with improved shattering resistance scheduled for release from several within next few years

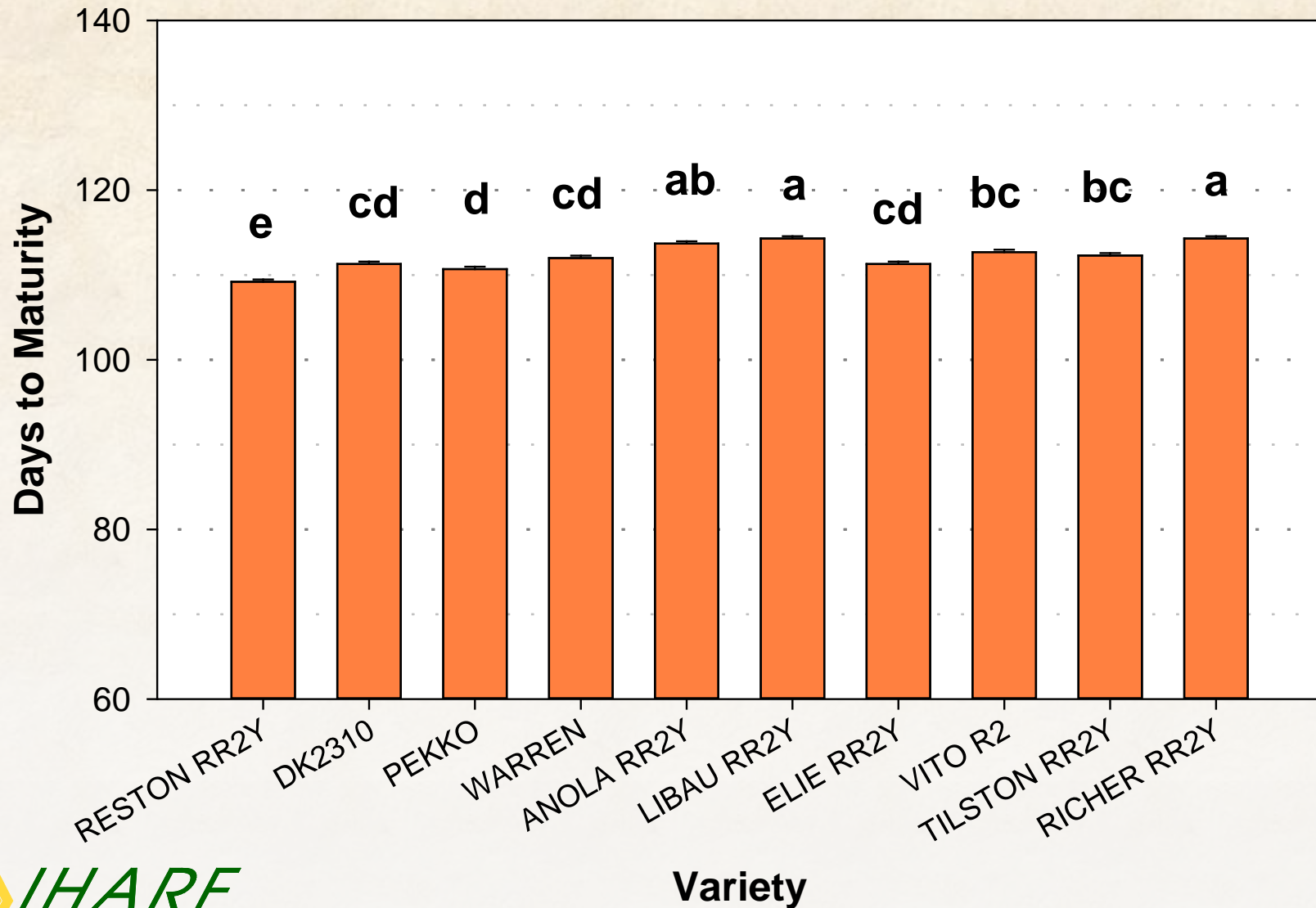
SOYBEAN VARIETY ADAPTATION TRIAL

- ✘ Trial sponsored by Northstar Genetics (Winnipeg, MB)
- ✘ Compared relative performance of 10 early maturing, Roundup Ready® soybean varieties in southeast SK
- ✘ Data collected included days to maturity, pod clearance and seed yield



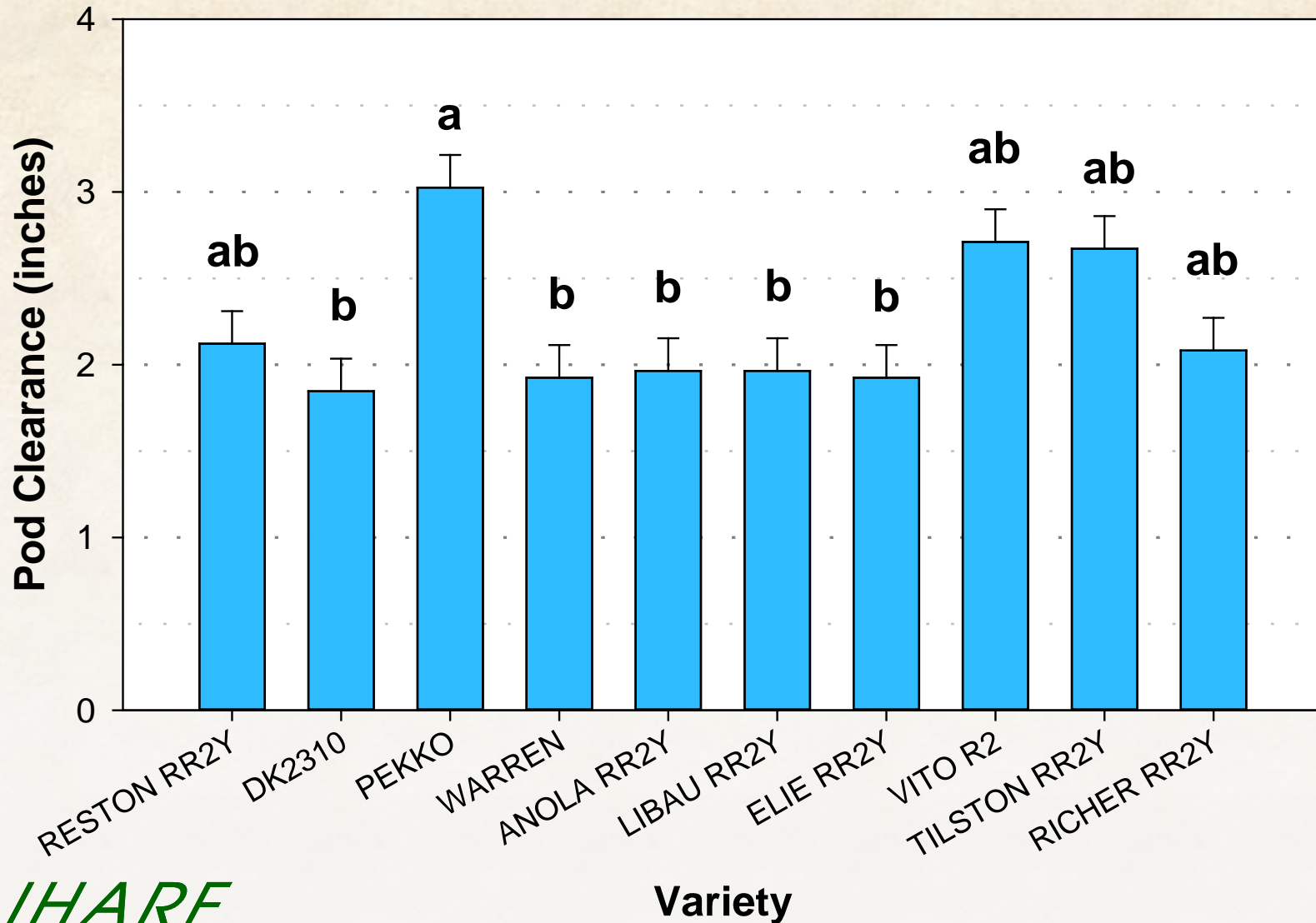
SOYBEAN VARIETY ADAPTATION TRIAL

Indian Head 2012



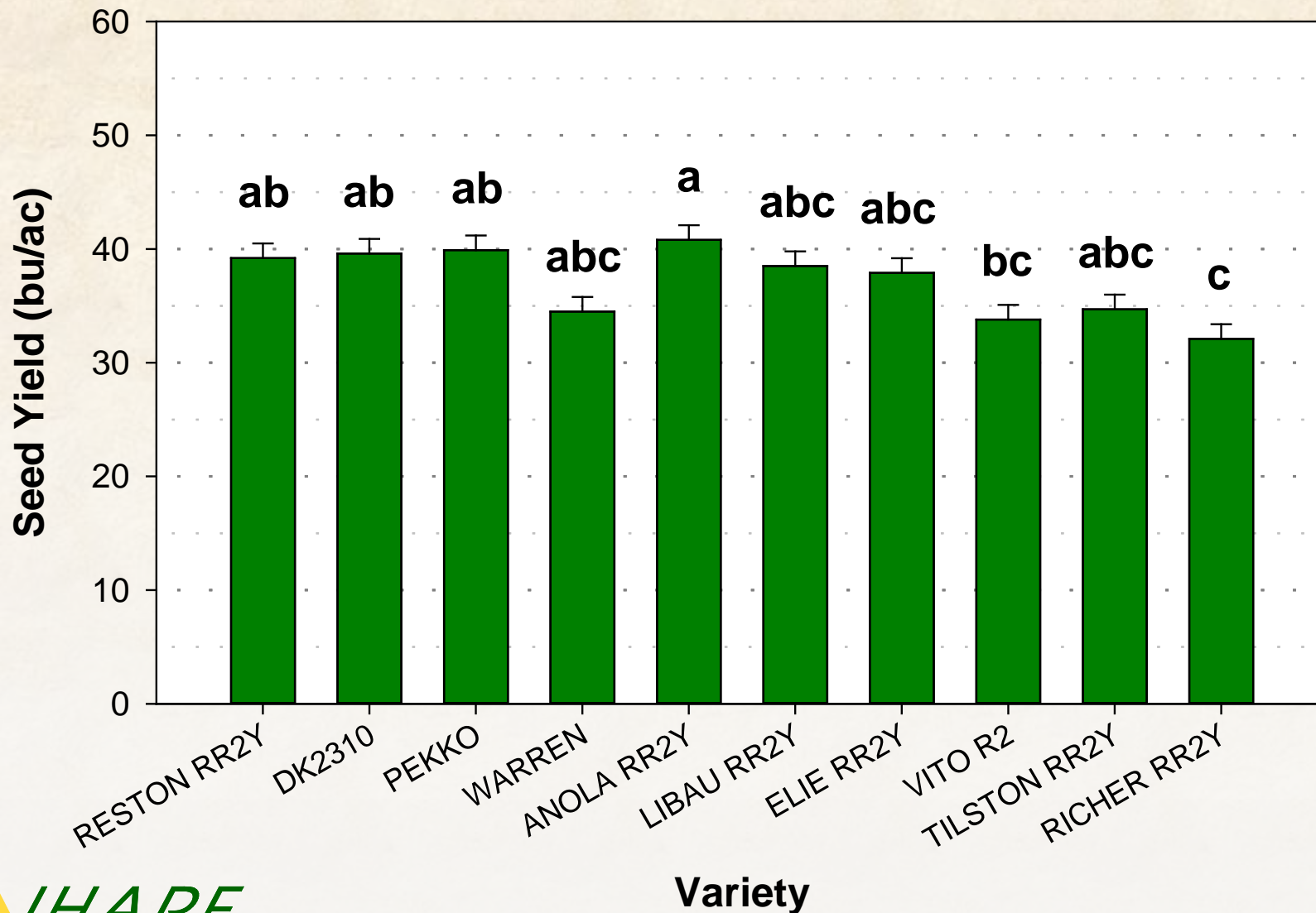
SOYBEAN VARIETY ADAPTATION TRIAL

Indian Head 2012



SOYBEAN VARIETY ADAPTATION TRIAL

Indian Head 2012



SOYBEAN VARIETY ADAPTATION TRIAL



- ✘ Soybeans performed well in 2012 plot trials and also in a substantial number of commercial fields in southeast SK
- ✘ Still should be considered a relatively risky crop (fall frost)
- ✘ Variety trials with Northstar Genetics to be continued in 2013 and agronomic / adaption trials proposed for 2014-2017

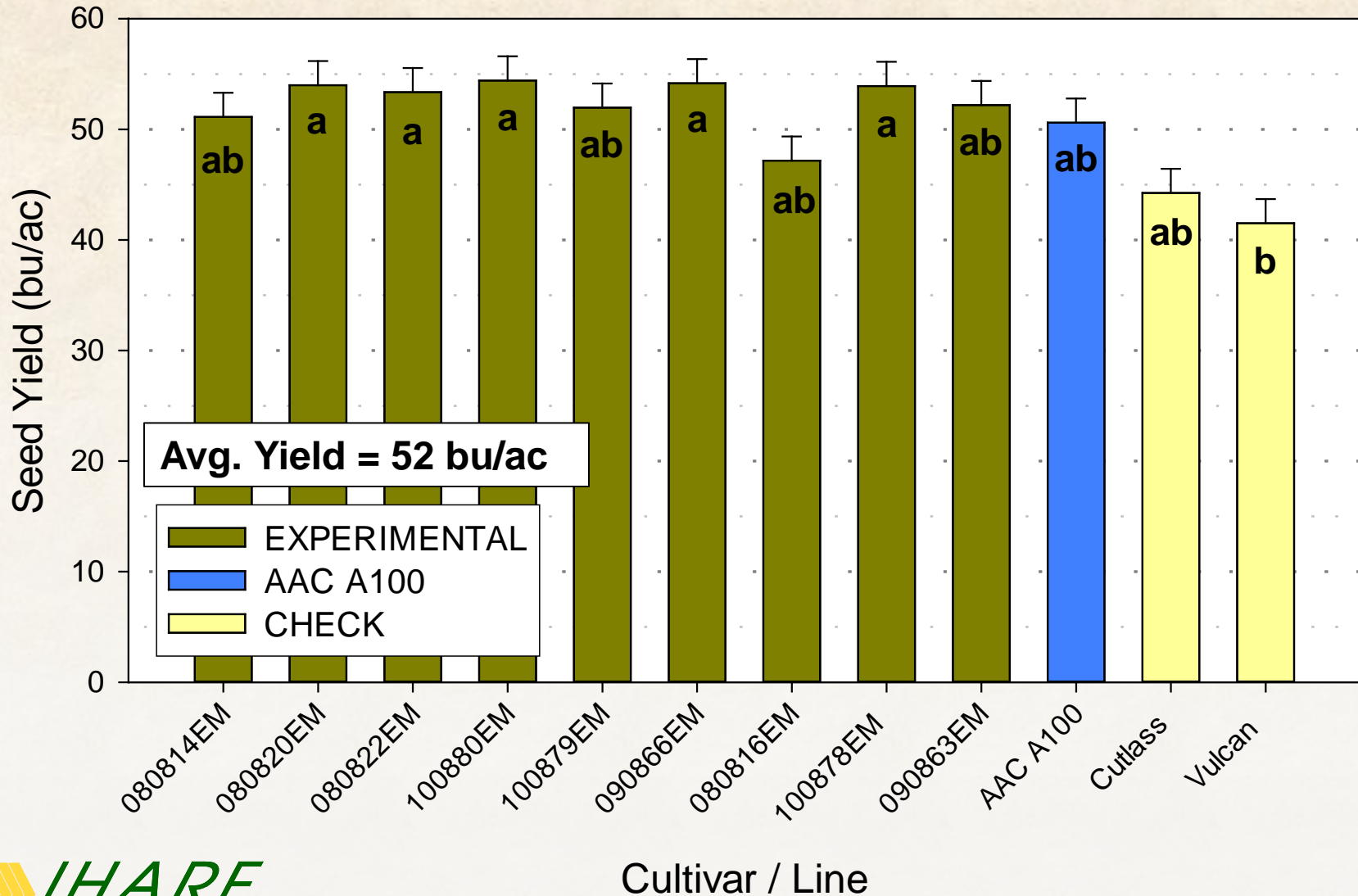
B. CARINATA YIELD TRIALS

- ✘ Sponsored by Agrisoma Biosciences
- ✘ *B.carinata* (Ethiopian mustard) has an oil profile optimized for use in the biofuel industry, specifically for biojet fuel – Resonance AAC A100 is the first commercial variety from Agrisoma
- ✘ Ideally suited to semi-arid growing conditions in southern Canadian Prairies & Northern U.S. Plains
- ✘ Approved for up to 50% blend with conventional jet fuel. US Federal Aviation Administration (FAA) has a stated goal of reaching one billion gal. of biojet fuel use in the commercial and military aviation sectors by 2018



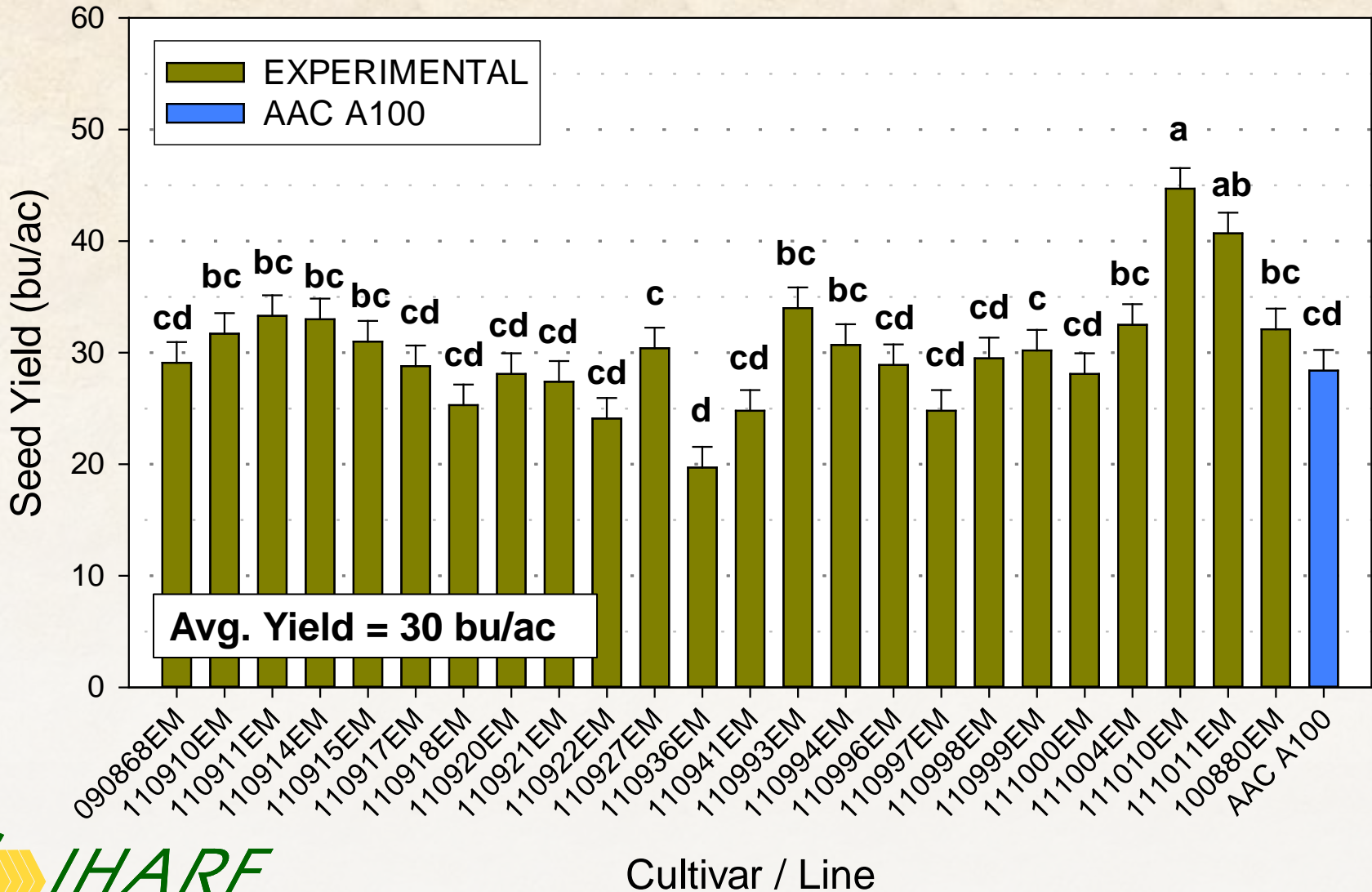
B. CARINATA YIELD TRIALS

Indian Head 2011



B. CARINATA YIELD TRIALS

Indian Head 2012



B. CARINATA YIELD TRIALS (2011-2012)



- × *B. carinata* yields have been comparable to *napus* canola at Indian Head
- × Competitive with weeds once established, herbicide options similar to conventional canola
- × Well suited to straight-combining, typically harvested later than canola
- × Production contracts available exclusively through Paterson Grain

Thank You!



Chris Holzapfel

Indian Head Agricultural Research Foundation

Email: cholzapfel.iharf@sasktel.net

Phone: (306) 695-4200

Website: www.iharf.ca