

World Class. Face to Face.

WASHINGTON Cranberry Winter Workshop 2017

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- BC Cranberry Marketing Commission
- Washington State Commission for Pesticide Registration
- Washington State Cranberry Commission
- Oregon Cranberry Growers Association
- The Cranberry Institute
- Ocean Spray
- PCCRF



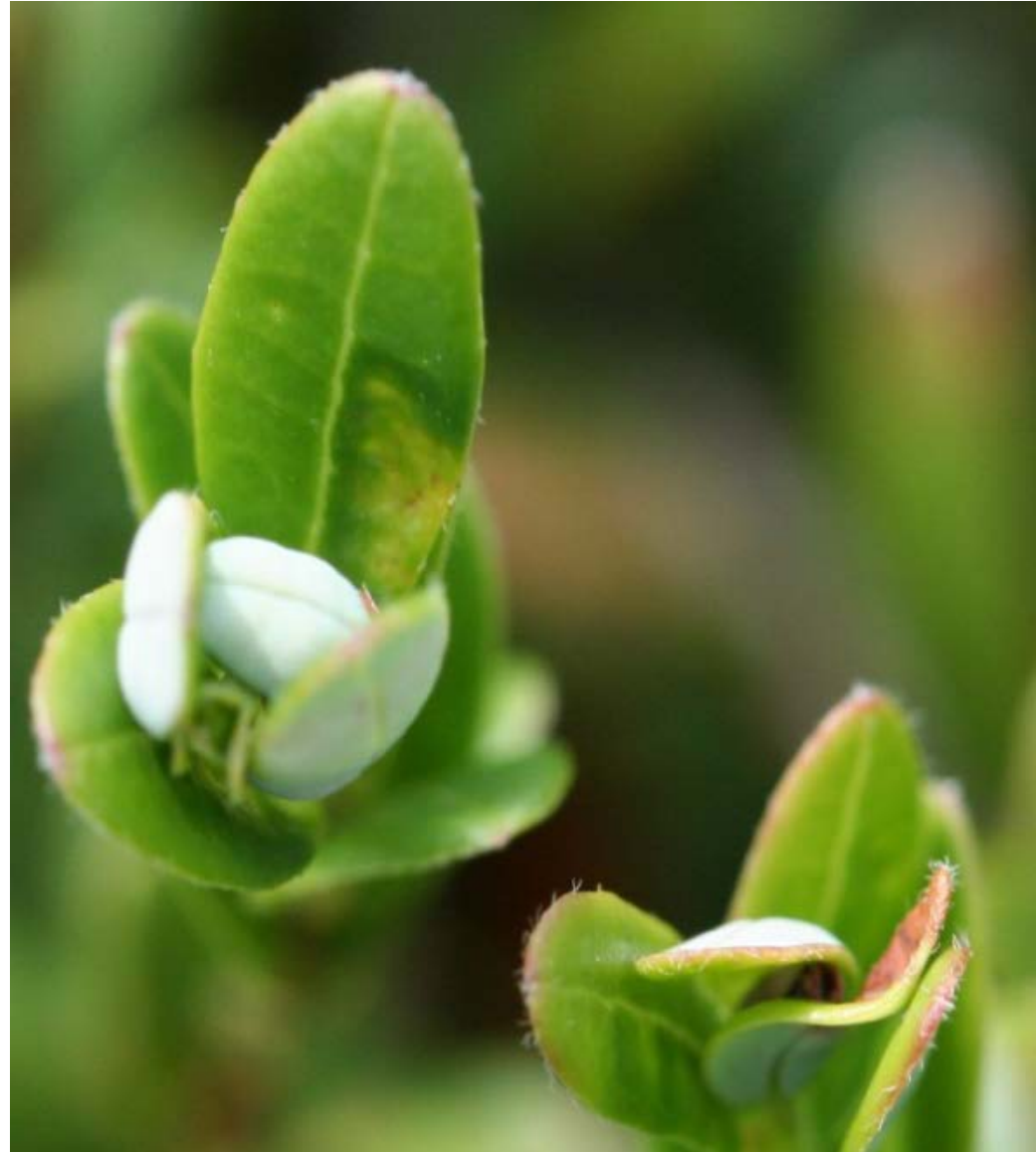
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WSU Pesticide Policy

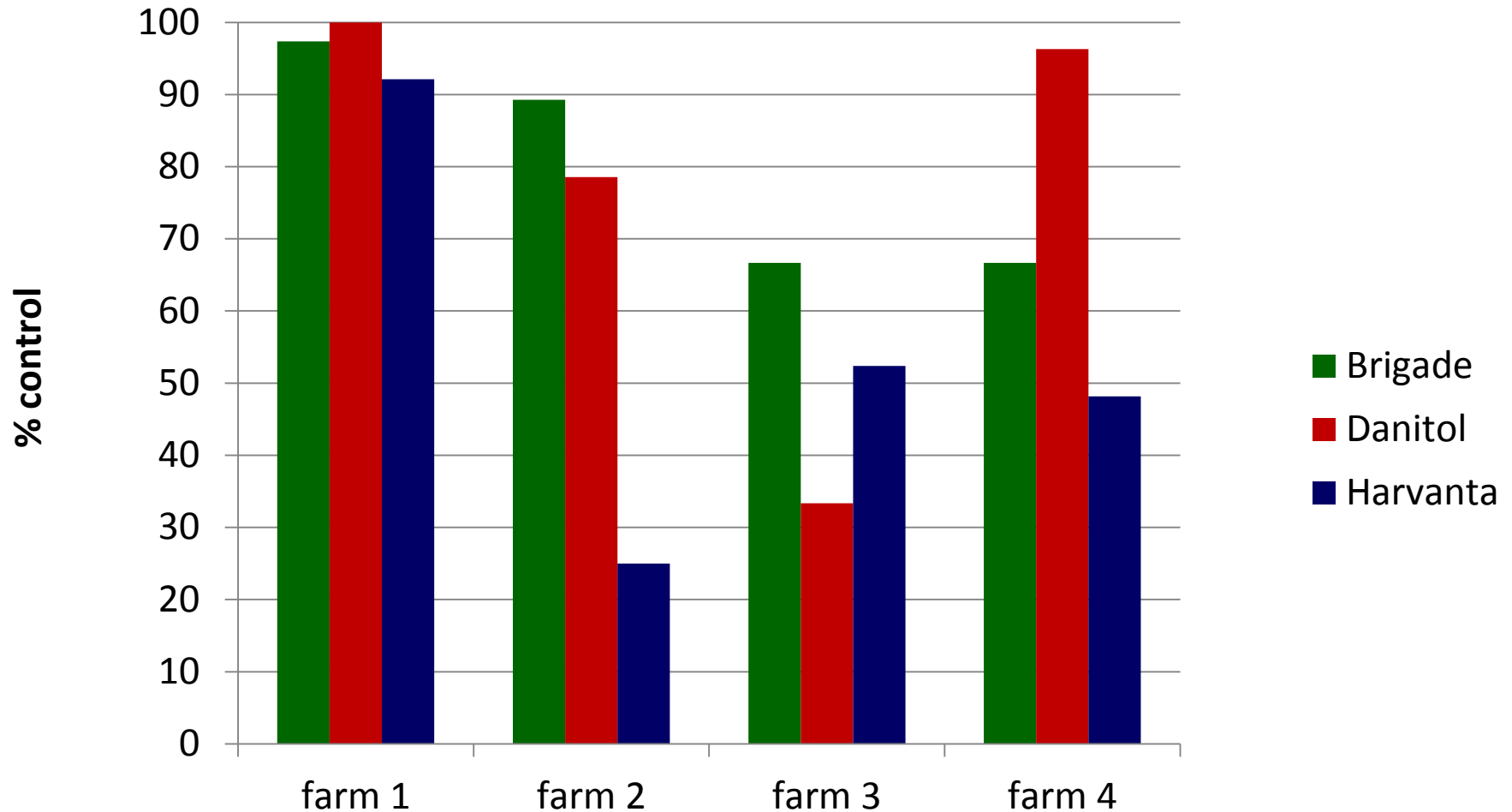
"Some of the pesticides discussed in this presentation were tested under an experimental use permit granted by WSDA. Application of a pesticide to a crop or site that is not on the label is a violation of pesticide law and may subject the applicator to civil penalties up to \$7,500. In addition, such an application may also result in illegal residues that could subject the crop to seizure or embargo action by WSDA and/or the U.S. Food and Drug Administration. It is your responsibility to check the label before using the product to ensure lawful use and obtain all necessary permits in advance."

- Tipworm
- Fireworm
- Fruitworm, Girdler, Weevil
- Fruit Rot
- Variety trial results

Tipworm Efficacy Trials -

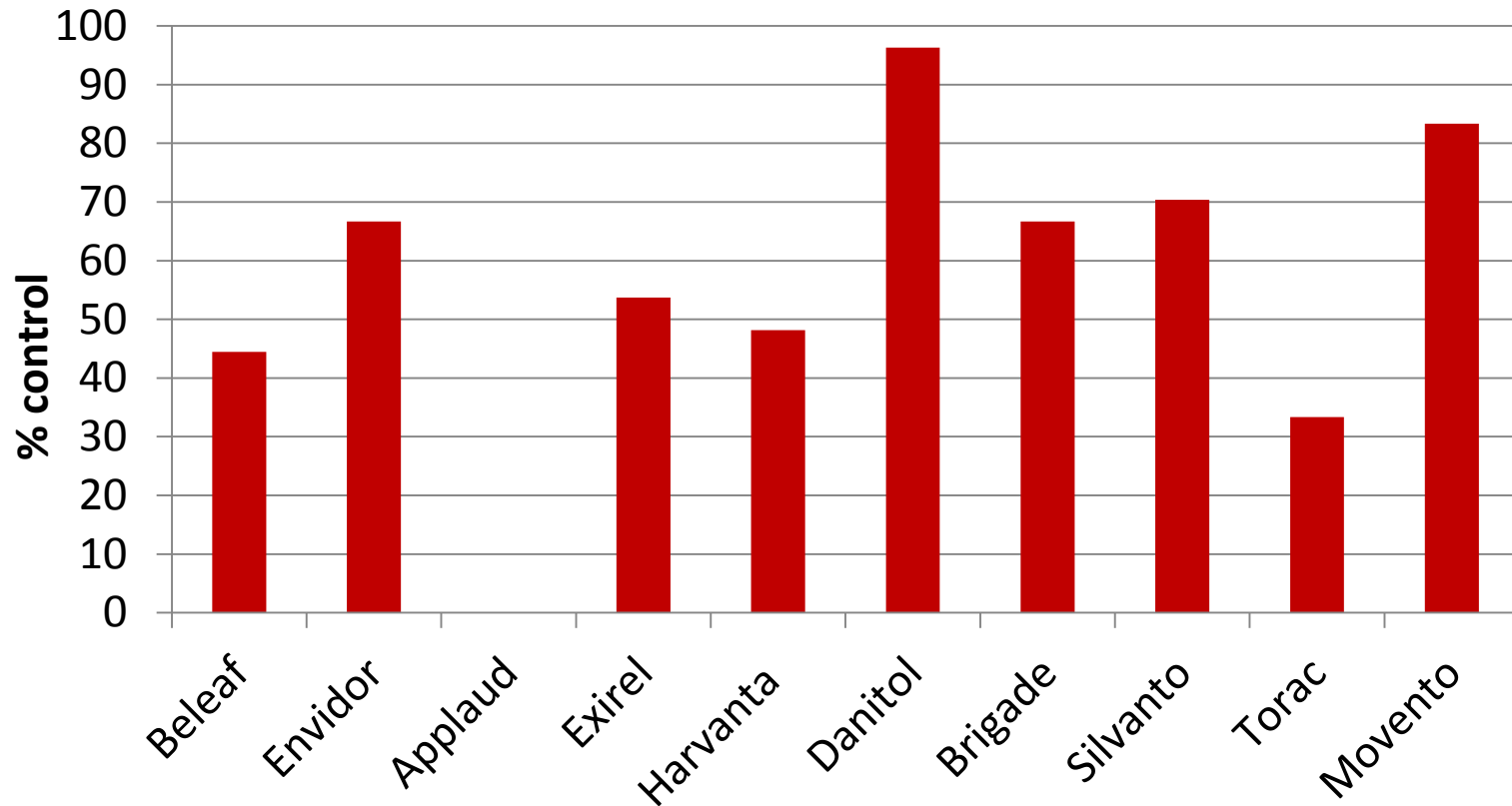


Tipworm control 2016- chemigation



*% control based on # TW larvae and Pupae/ 25 upright relative to untreated control

Tipworm control 2016- broadcast



*% control based on # TW larvae and Pupae/ 25 upright relative to untreated control

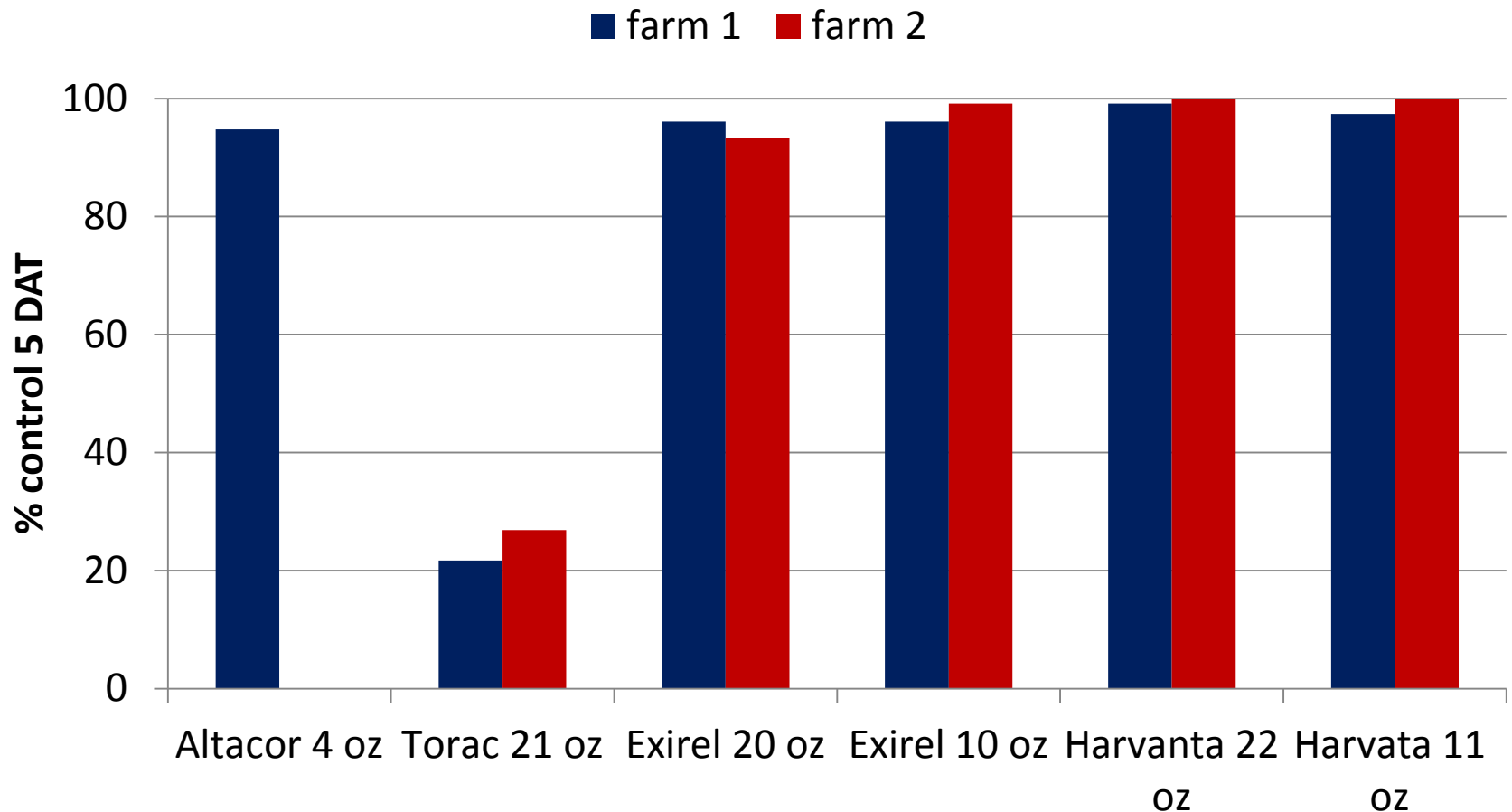
Tipworm summary

- The future
 - Couple of decent chemistry in the queue
 - Some other chemistries OK, also in queue
- The present
 - Multiple pre-bloom Sevin / OP application
 - Starting ~ early May

Fireworm control

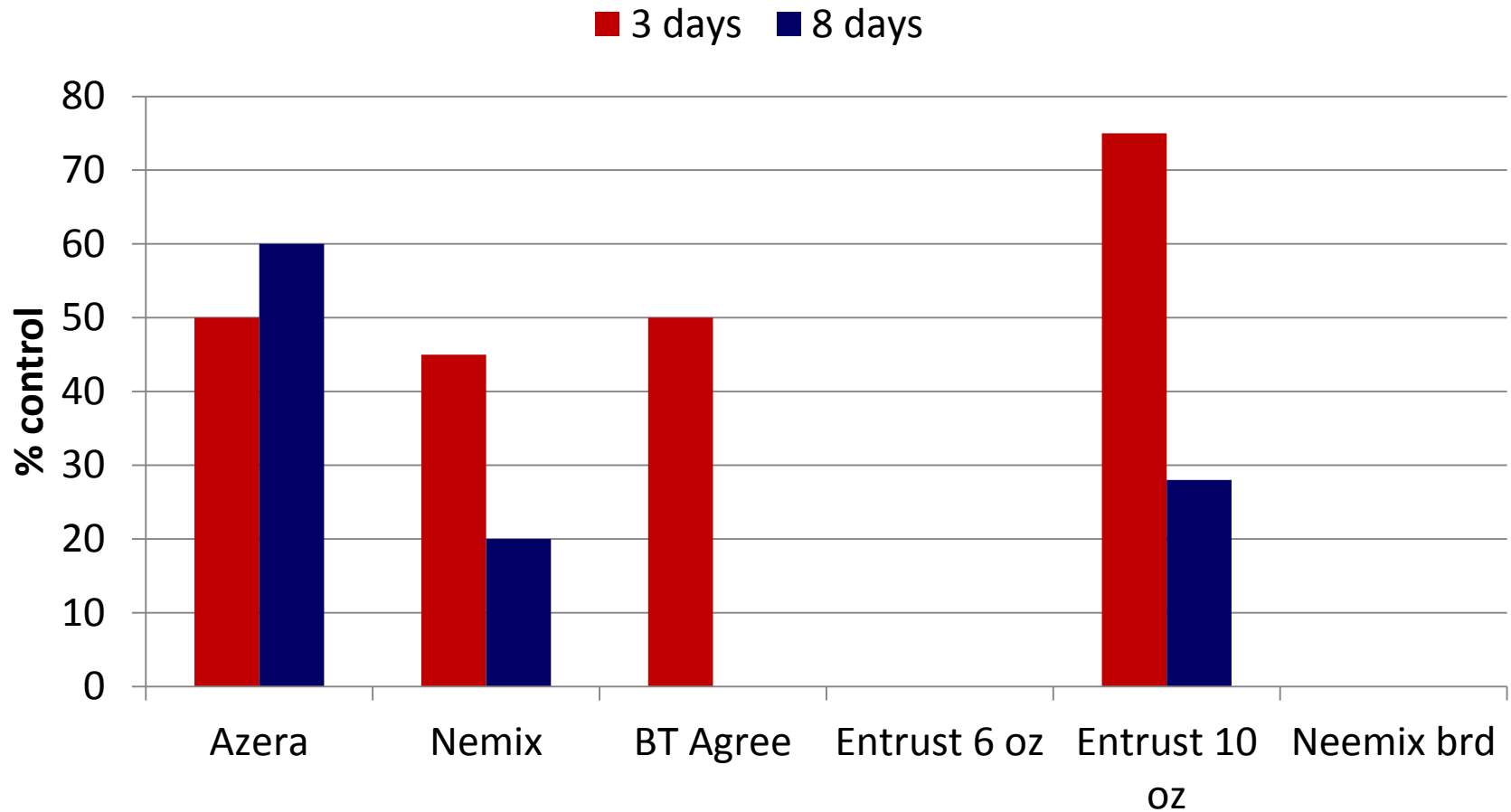


1st generation fireworm control using new chemistries in 2016 - chemigation applied



*% control based on # alive larvae / 5 sweeps compared to untreated control

1st generation fireworm control using OMRI chemistries in 2016 - chemigation applied



*% control based on # alive larvae / 5 sweeps compared to untreated control

Fireworm – conclusion

- Some new chemistries, in queue that are effective with chemigation
- “Softer” insecticides other than Entrust only marginally effective.

Girdler

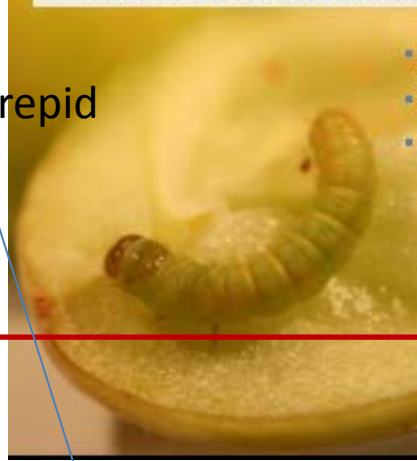


Solar powered light trap

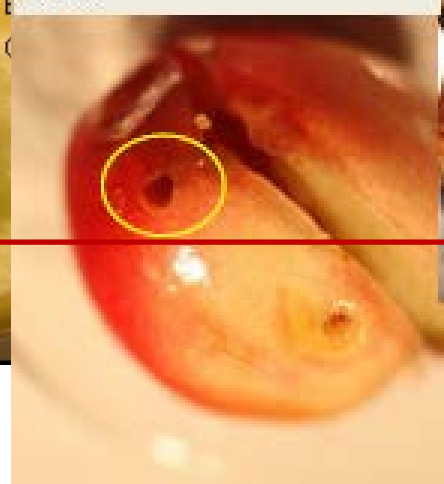
- Employed 3 to 7 days at 3 cranberry beds between late July to Early September
- Conditions not ideal
- Temperature and moisture settings need adjustment
- Trapped ample fireworm, tipworm and girdler relative to other traps
- Don't know if it is a useful management tool or not (more research needed)
- Cost -1 trap/5 acres suggested @ \$700 each



Cranberry fruitworm



Larvae exit holes and frass in cranberry fruit



Altacor or Intrepid

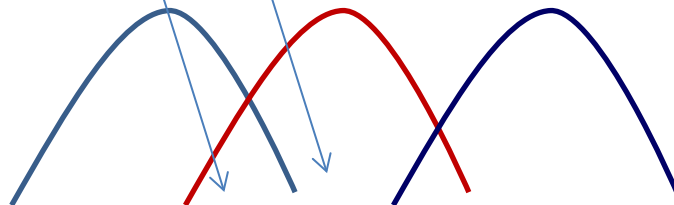
Moths Eggs Bore holes

June

July

August

September



Weevil control:

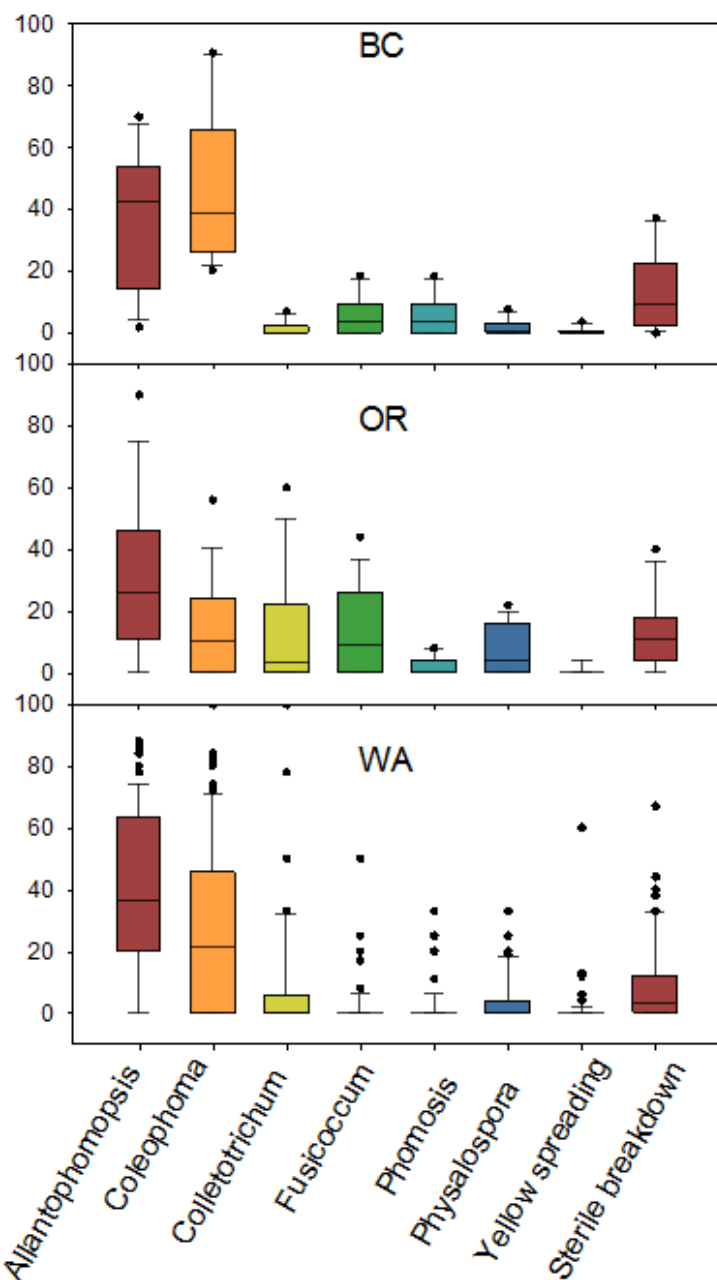
- Orthene /Lorsban for overwintering adults – Early May
- Avaunt for during new adults in Late June



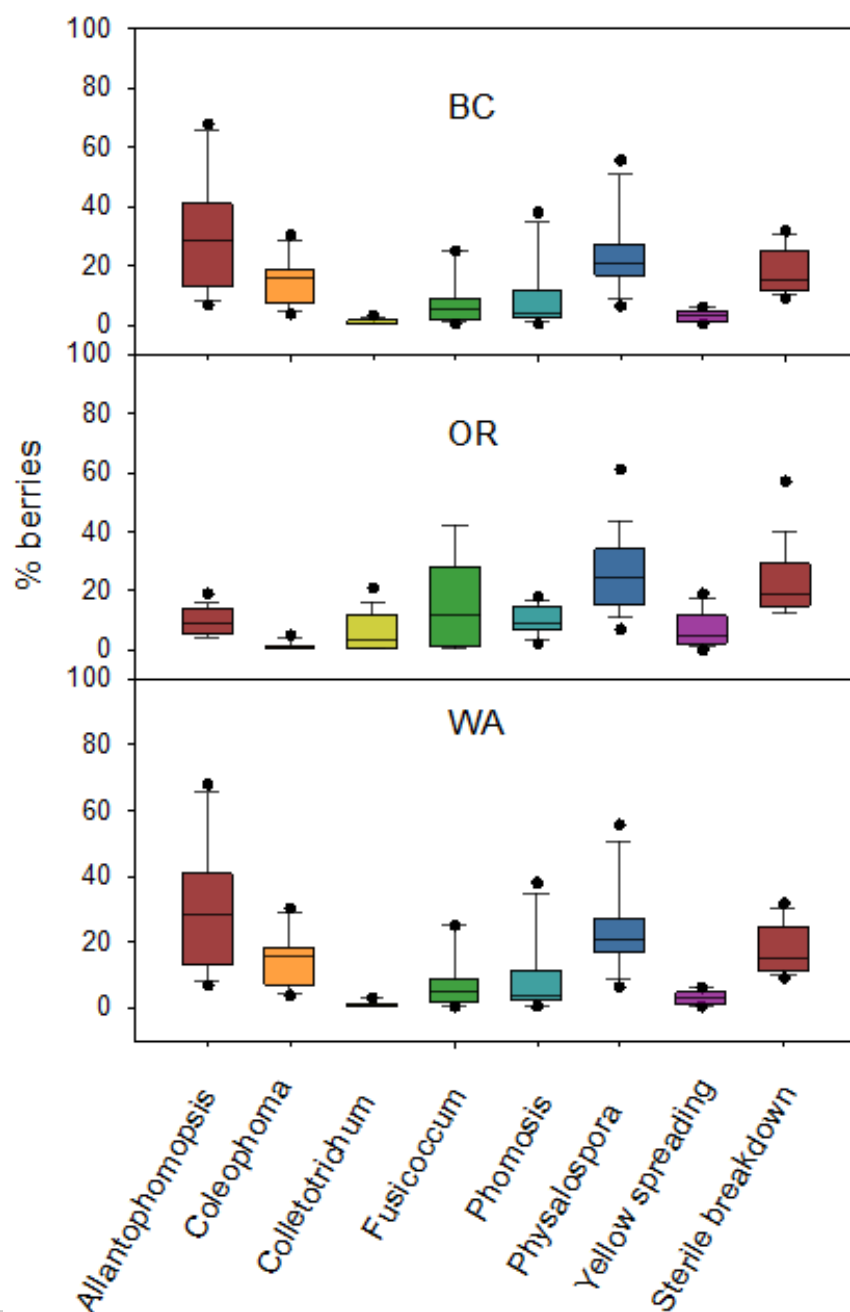
Fruit rot and fungicides

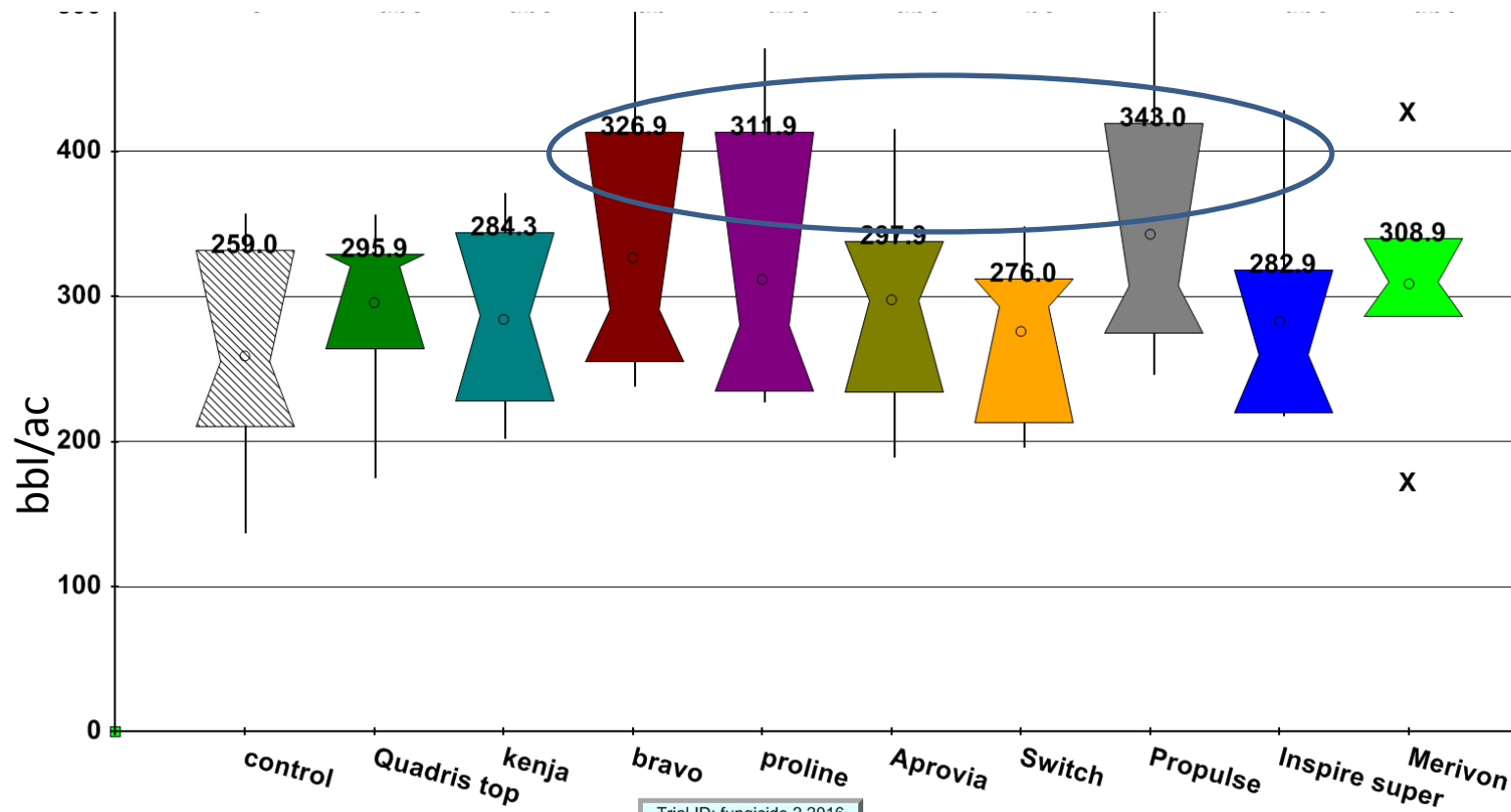
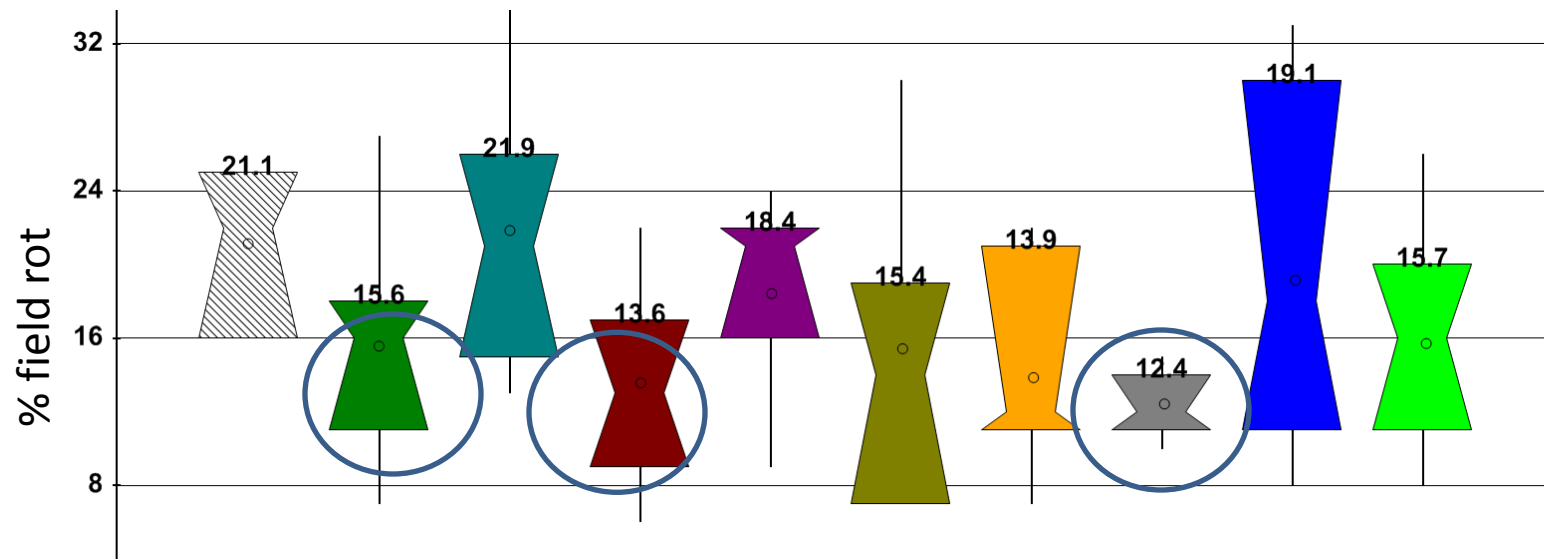


Rotted Berries



Latent unaffected berries



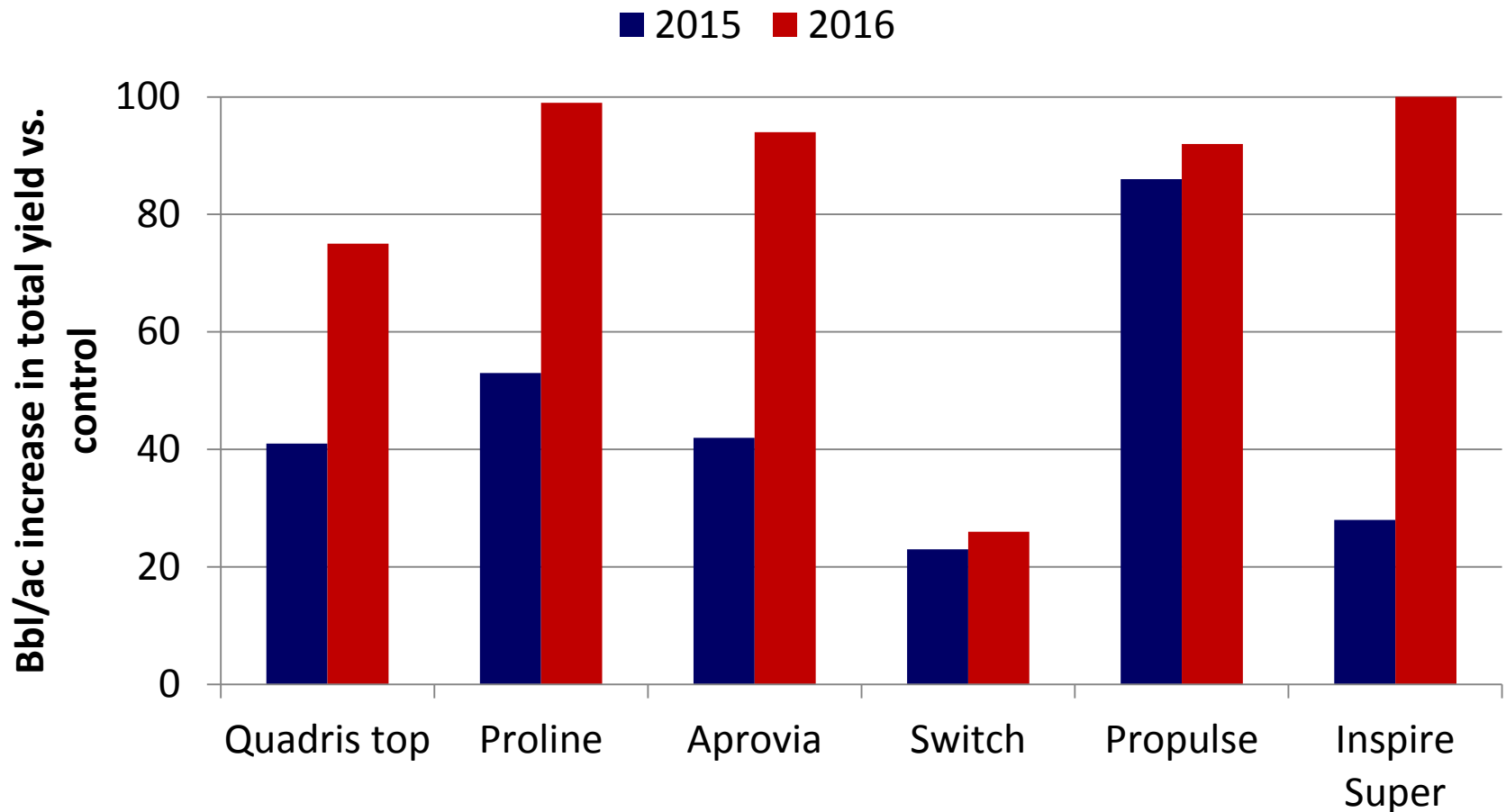


What is the real value of two well-timed (early and mid bloom) fungicides?

- Do you really need it if you don't have a lot of fruit rot?
- The new fungicide are expensive – are they worth the expense?

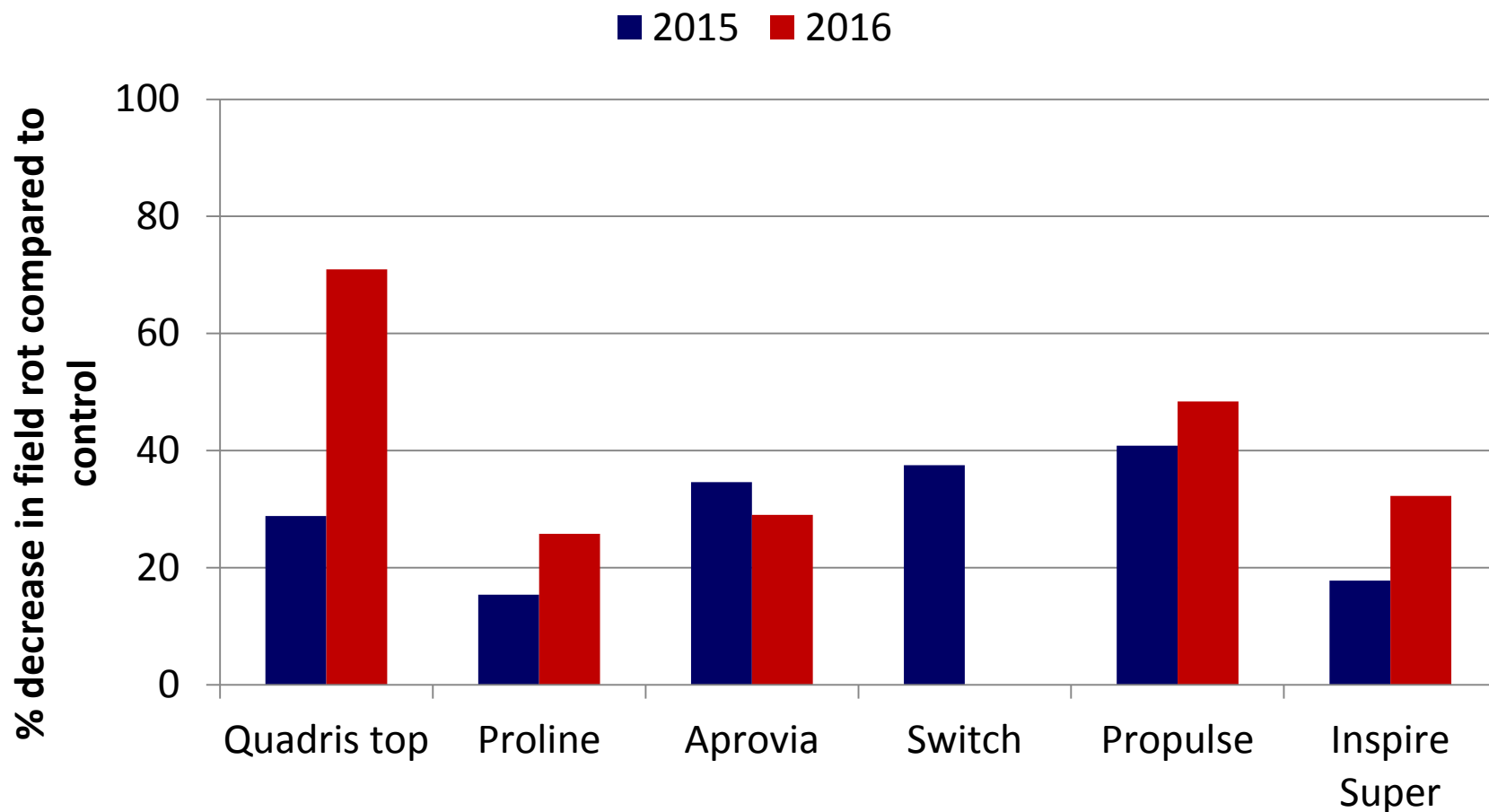


Increase in Total Yield of Stevens



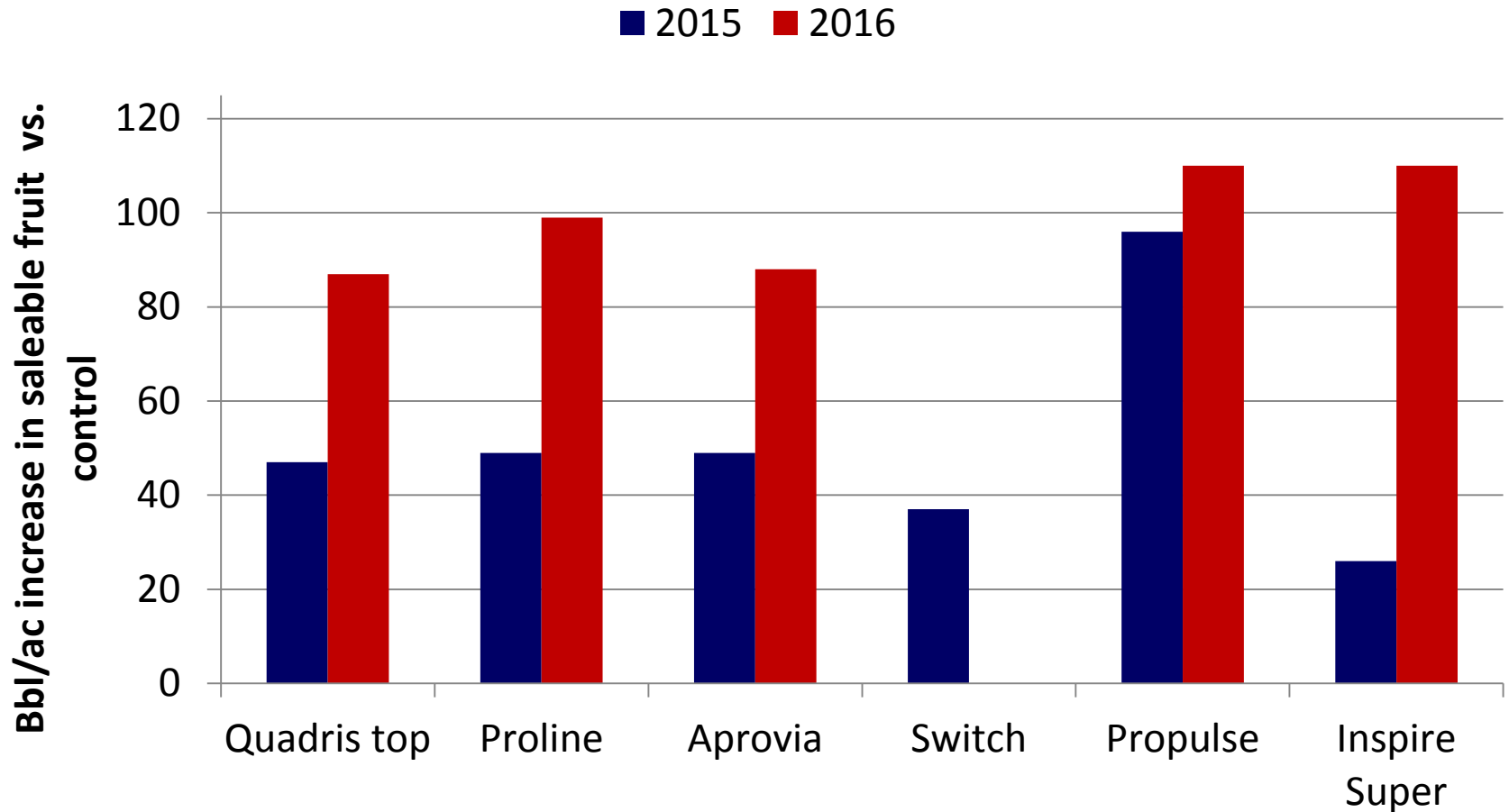
Yield of control was 248 and 207 bbl/ac in 2015 and 2016, respectively

% field rot decrease of Stevens with fungicides



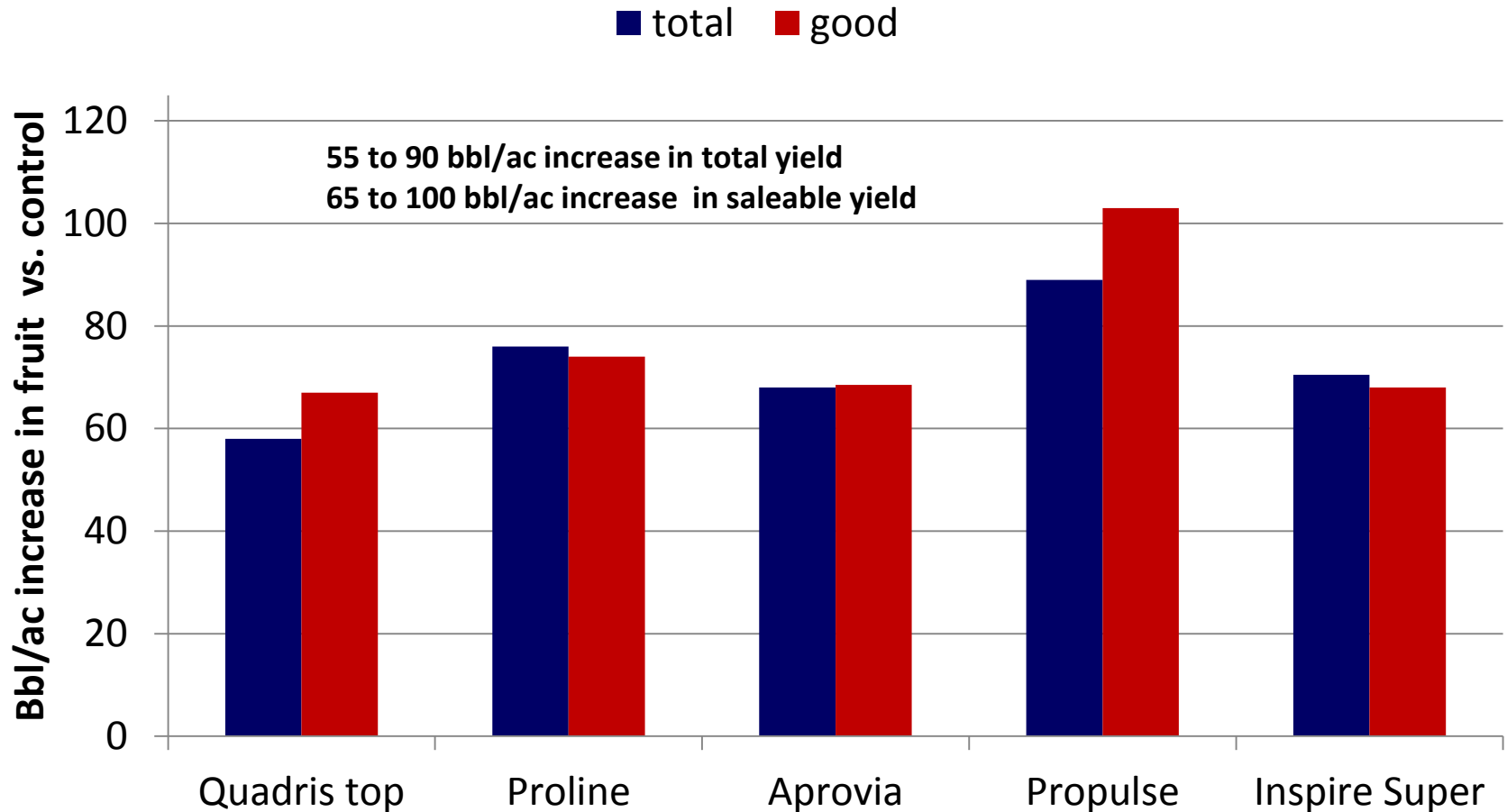
Field rot of control was 21 and 31 % in 2015 and 2016, respectively

Increase in Yield of “good” Stevens



Yield of control was 196 and 146 bbl/ac in 2015 and 2016, respectively

Mean Increase in yield with fungicides



What to do if there is a big variation in bloom across beds, all connected on the same chemigation system



Fruit rot - conclusion

- Numerous new fungicides look promising for fruit rot.
- Need to apply two or more fungicides from early to mid-bloom or longer
- Need combination of fungicides &/or rotation of fungicides.
- Some fungicides (or combinations) appear to increase yield

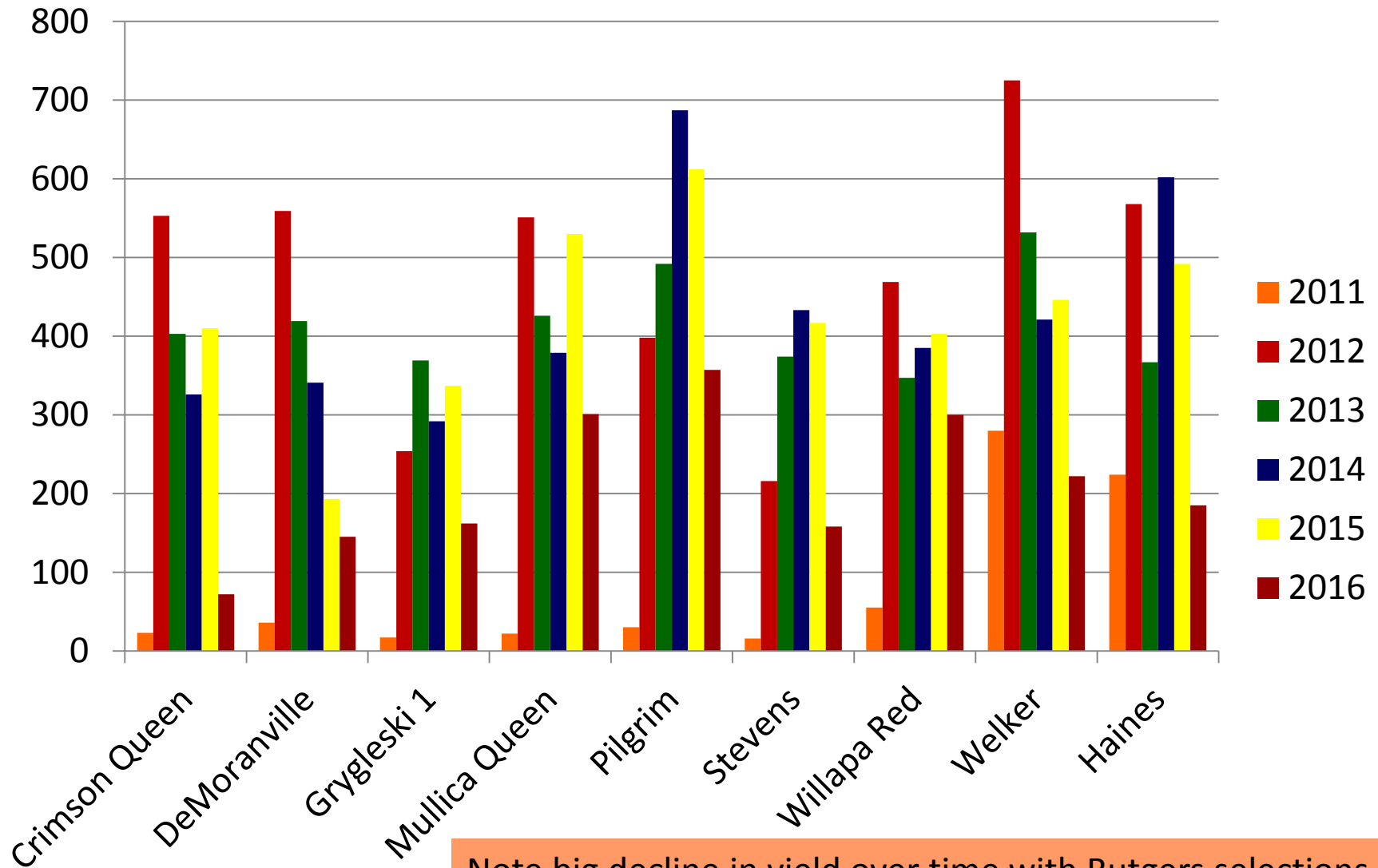


Variety Data Oregon, Washington and BC



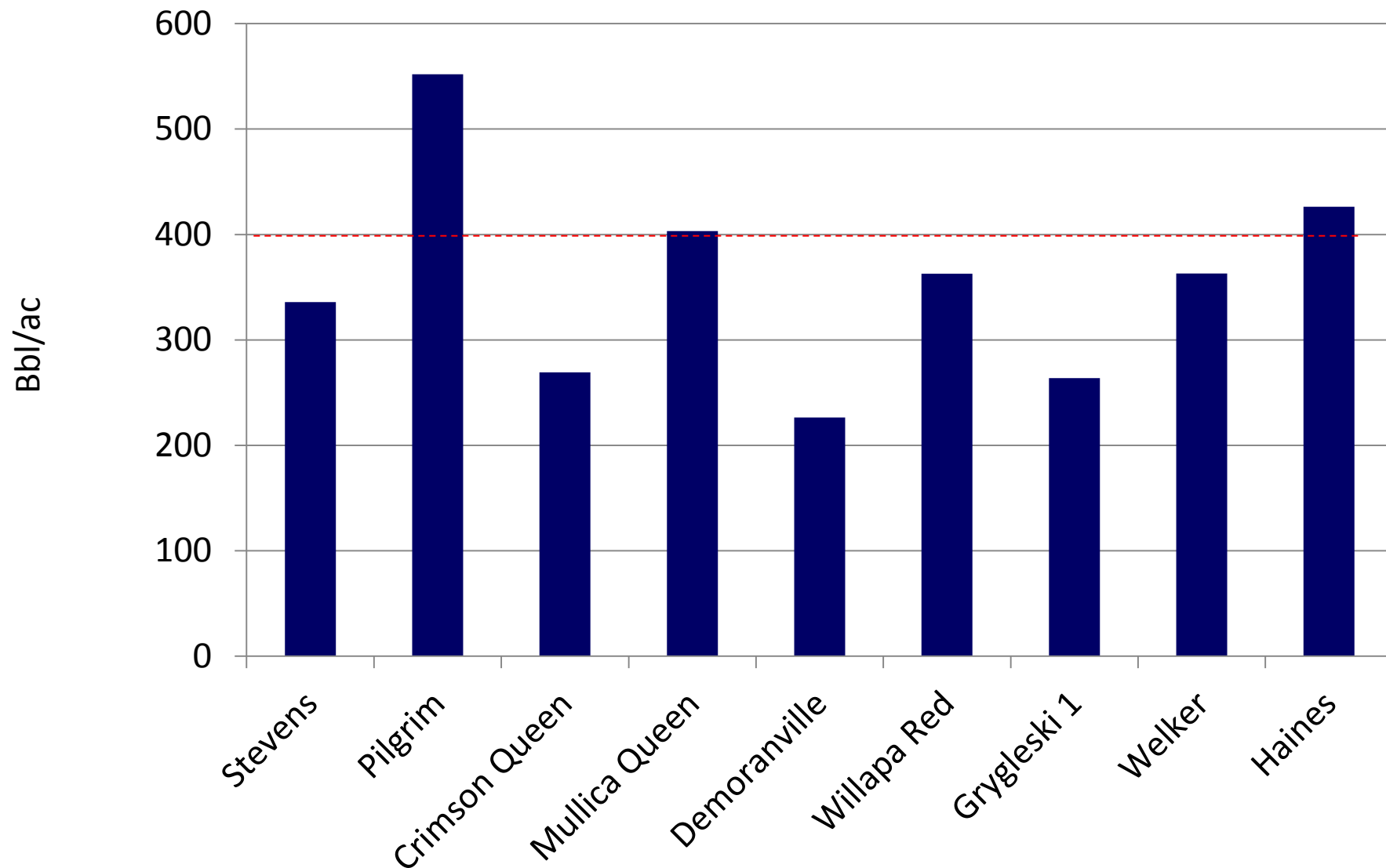
Oregon Yield 2011 to 2016

bbl/ac

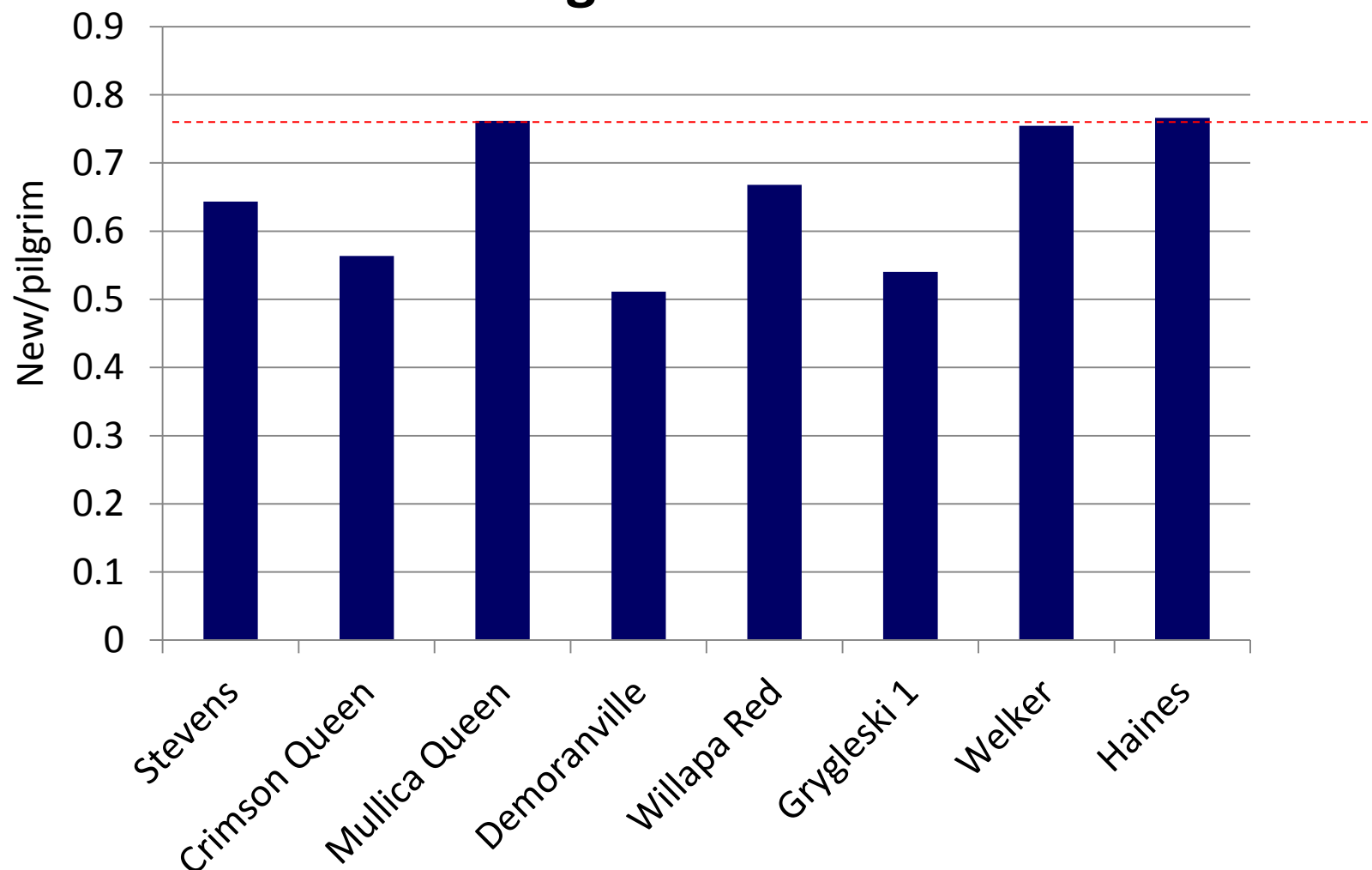


Note big decline in yield over time with Rutgers selections

OR Mean Yield 2014 to 2016

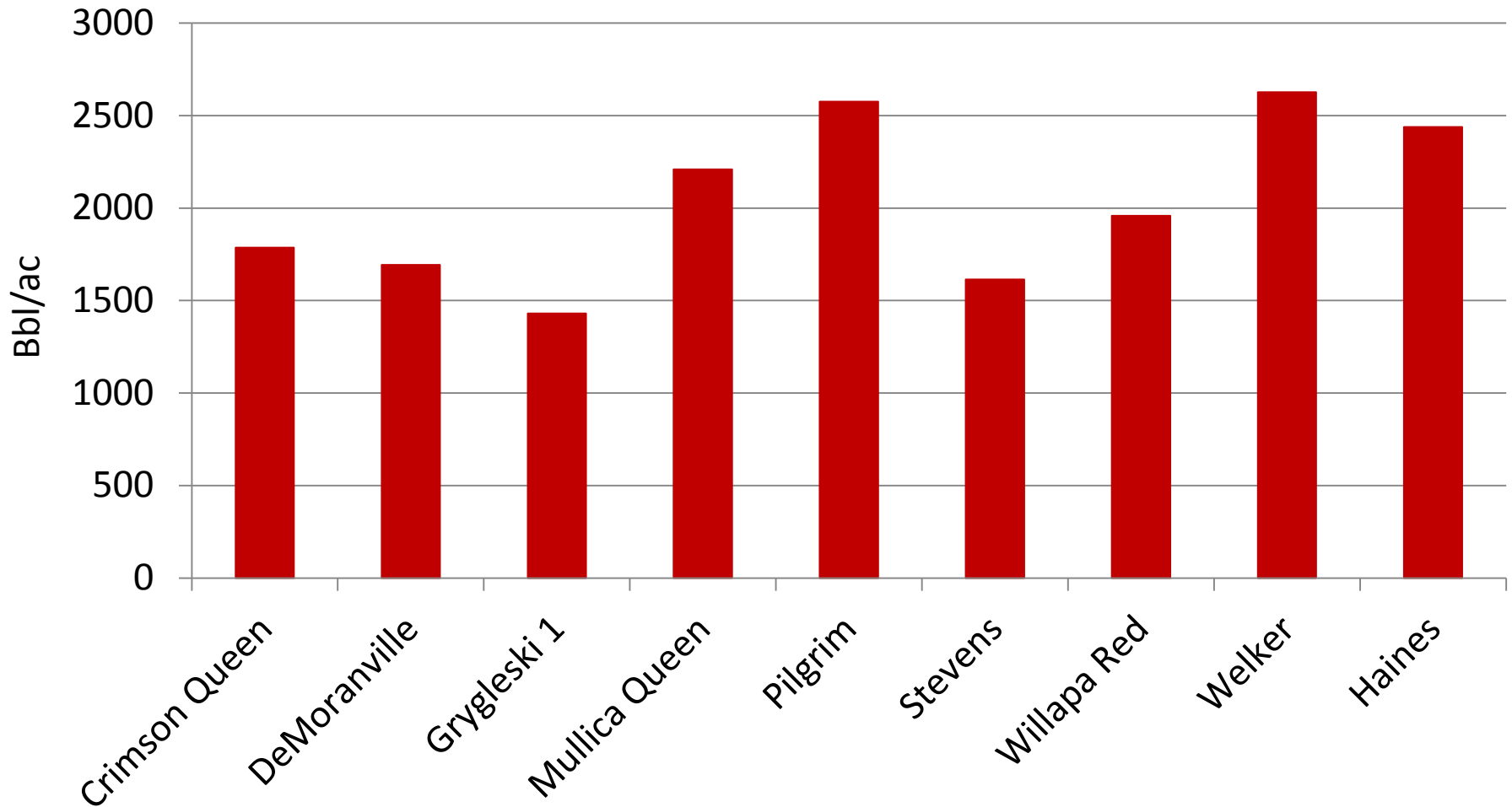


Ratio of mean 4 year yield of new varieties vs Pilgrim in OR

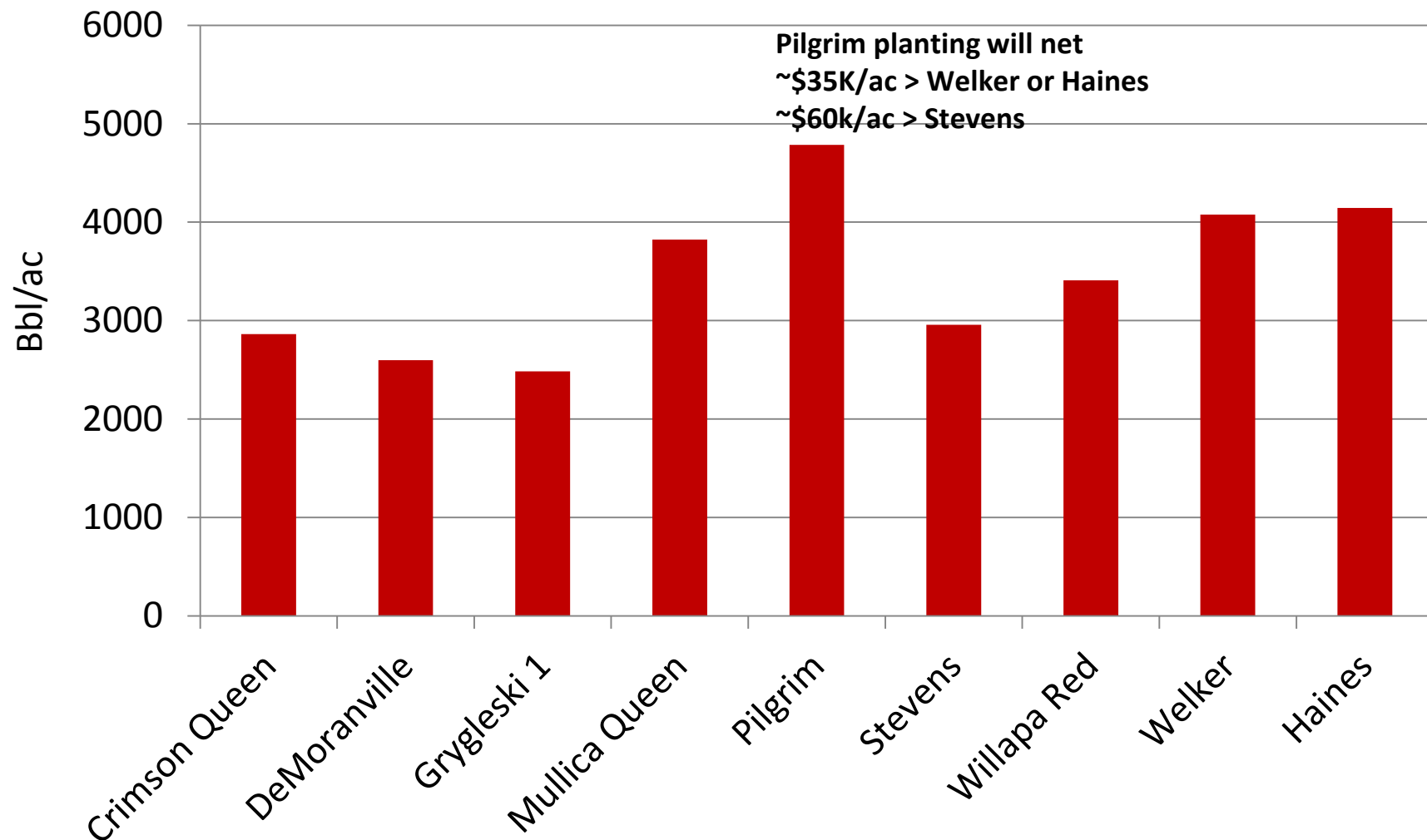


New varieties on average (over time) only yield 75% that of pilgrim

Total OR yield 2011 to 2016



Total OR yield 2011 to 2020 (using mean 2014 to 2016 yield to project to 2020)





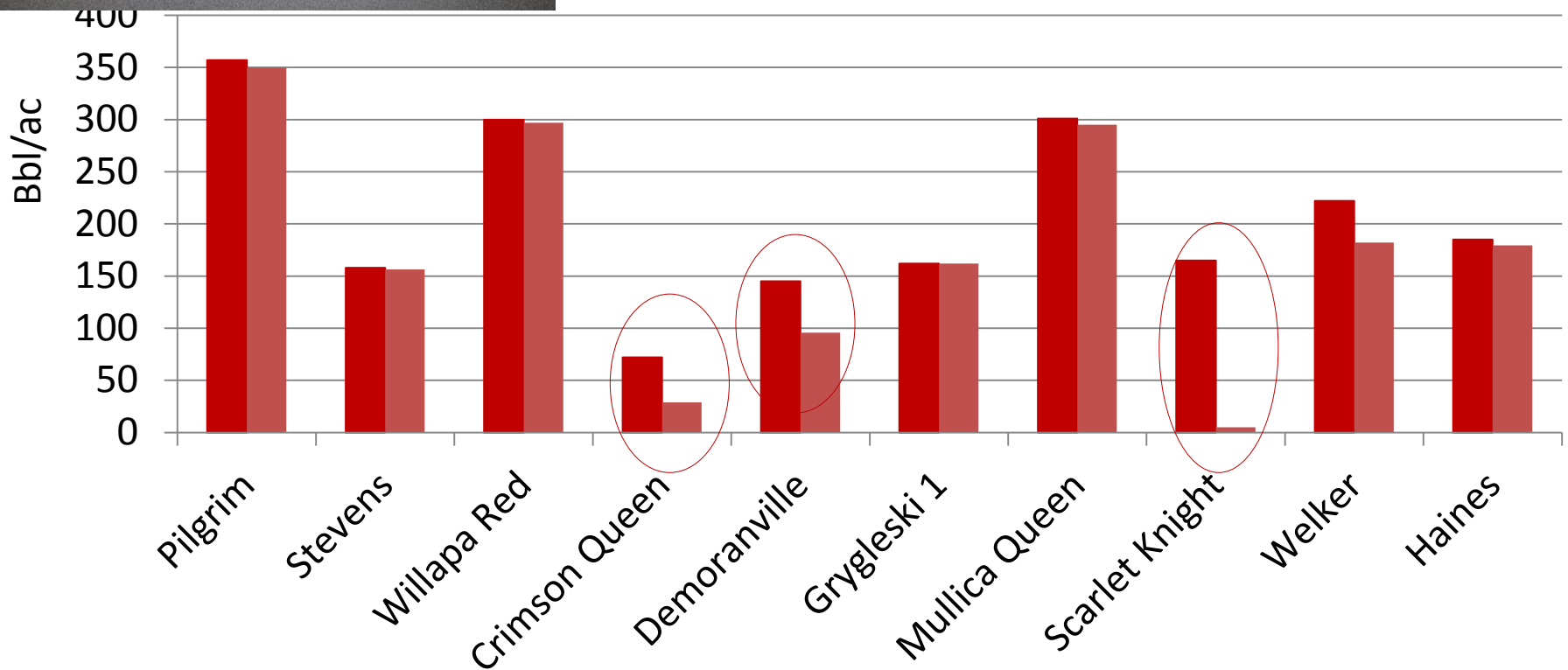
Demoranville:
Fruit from May Bloom vs August bloom





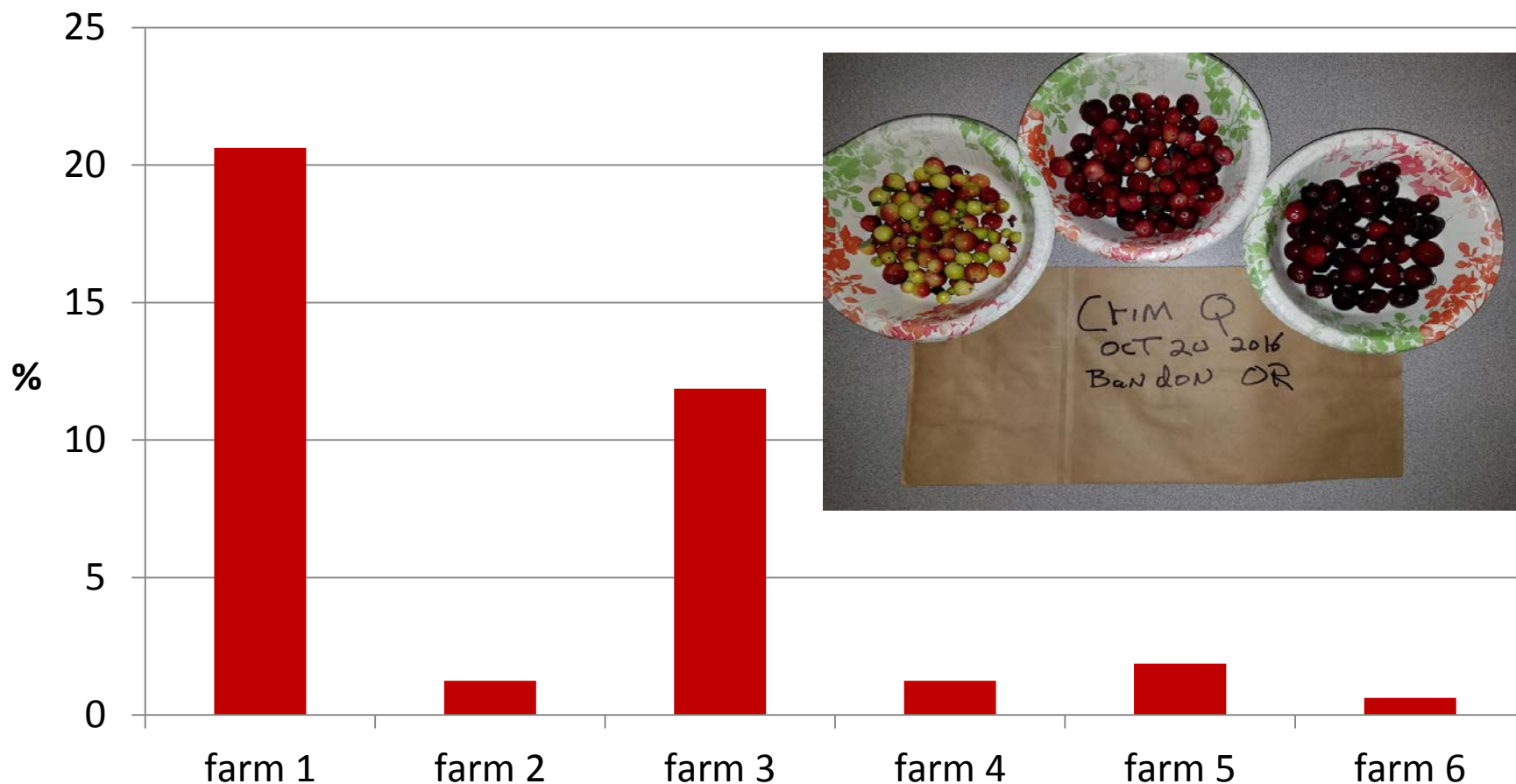
Total OR yield 2016 and total yield of normal fruit

■ total ■ spring bloom



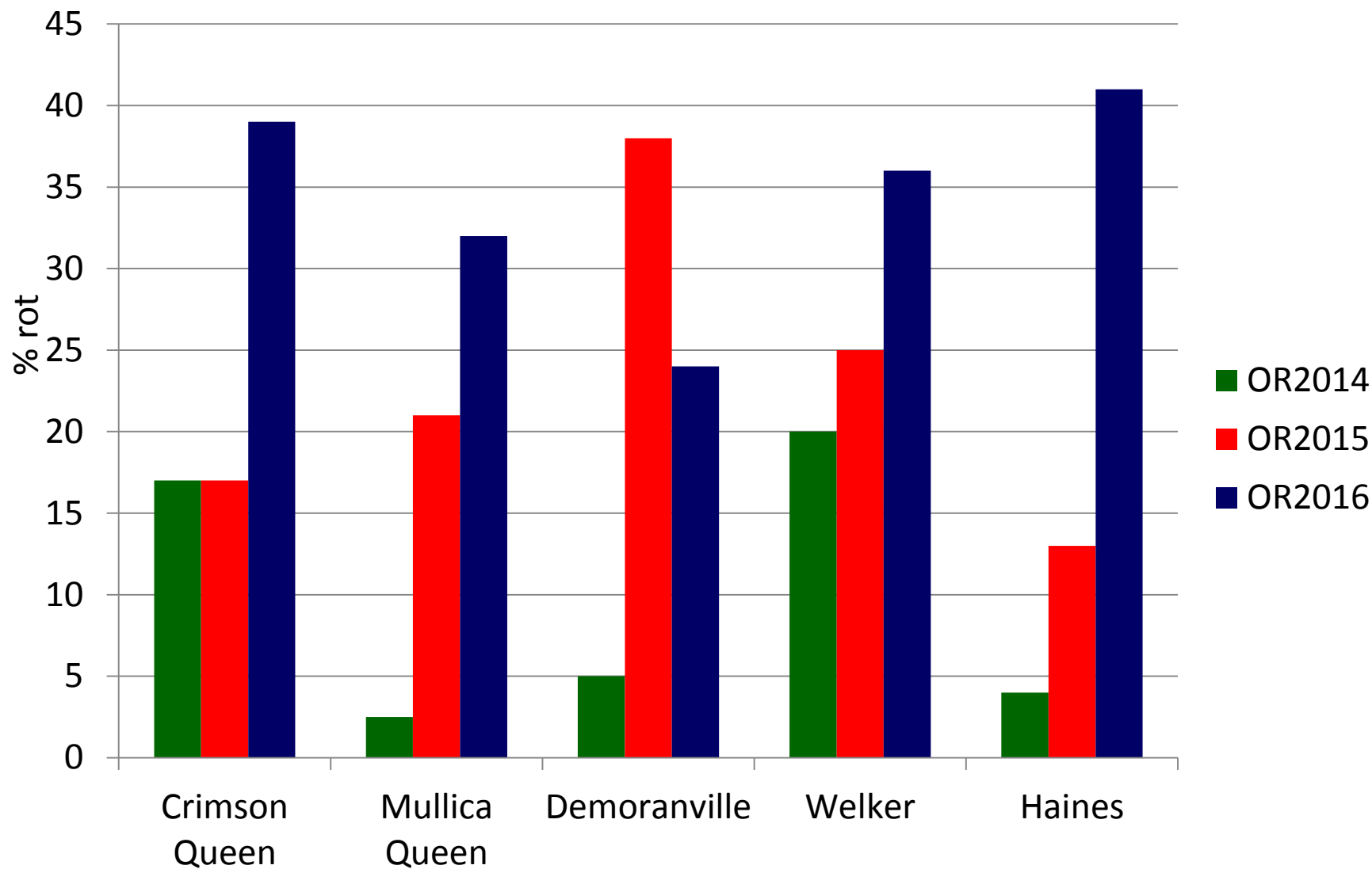
Some varieties too much summer bloom to be useful in OR

% of Crimson Queen Upright with fall bloom in 2016

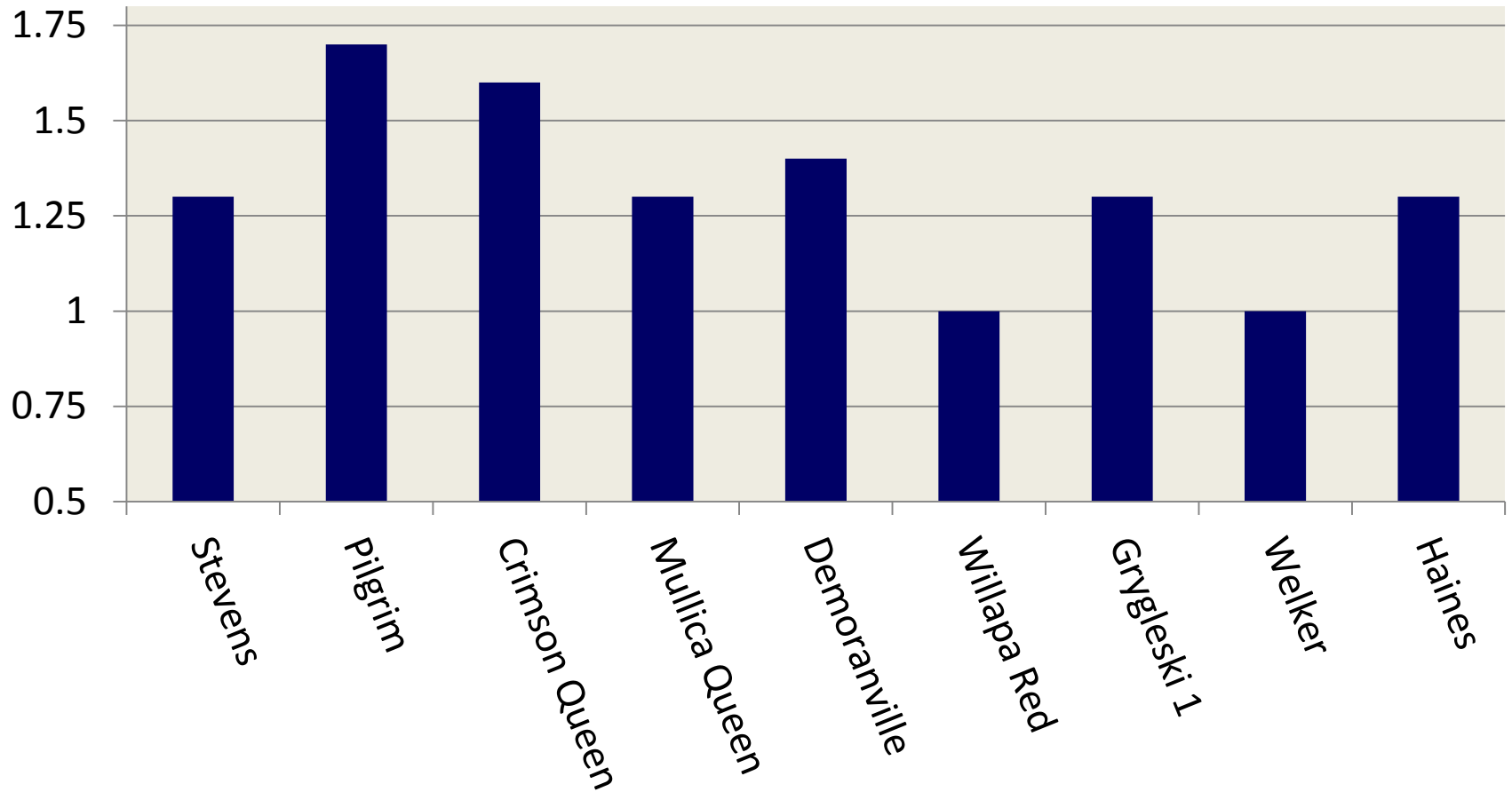


Is summer /fall bloom a management induced problem?

% Field rot – OR 2014 to 2016



OR 4 year mean Fruit size (g/fruit)

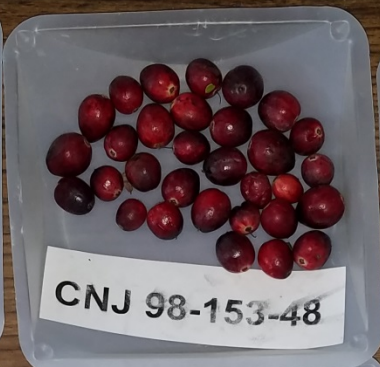




Yellow River



Stevens



CNJ 98-153-48



GH1



BG's



Pilgrim



CNJ 93-21-170



NJS 98-71



Willapa Red



HyRed



Deerfoot



Crimson Queen



AR2

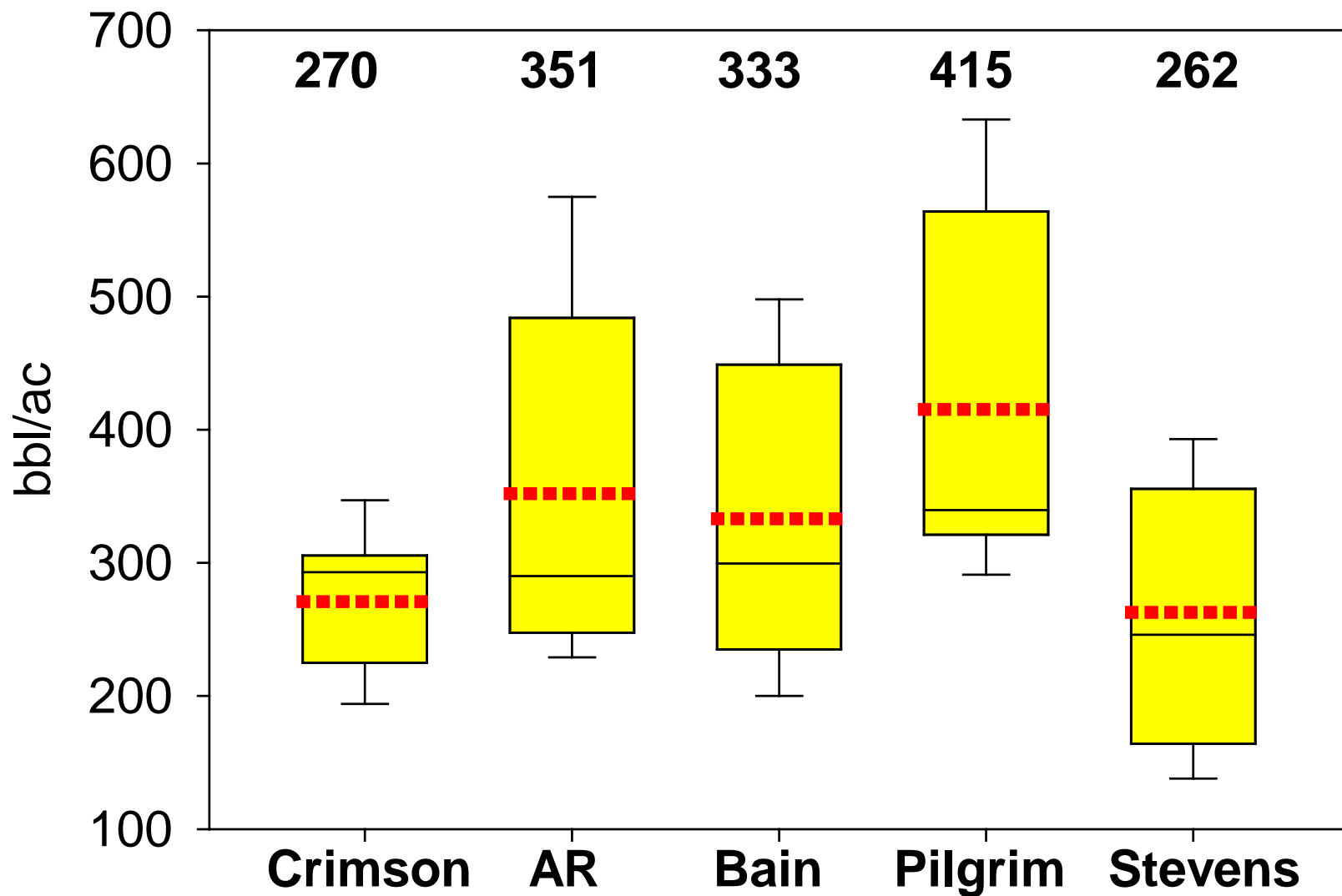


Bain Favorite



Mullica Queen

Mean 10 year average yield 2007 to 2016



Summary of variety data

- Some of the Rutgers hybrids look good, others have issues
 - Fruit rot, on-off years, and summer bloom can be an issue.
- Tonnage- Welker, Haines & Pilgrim

Questions



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