

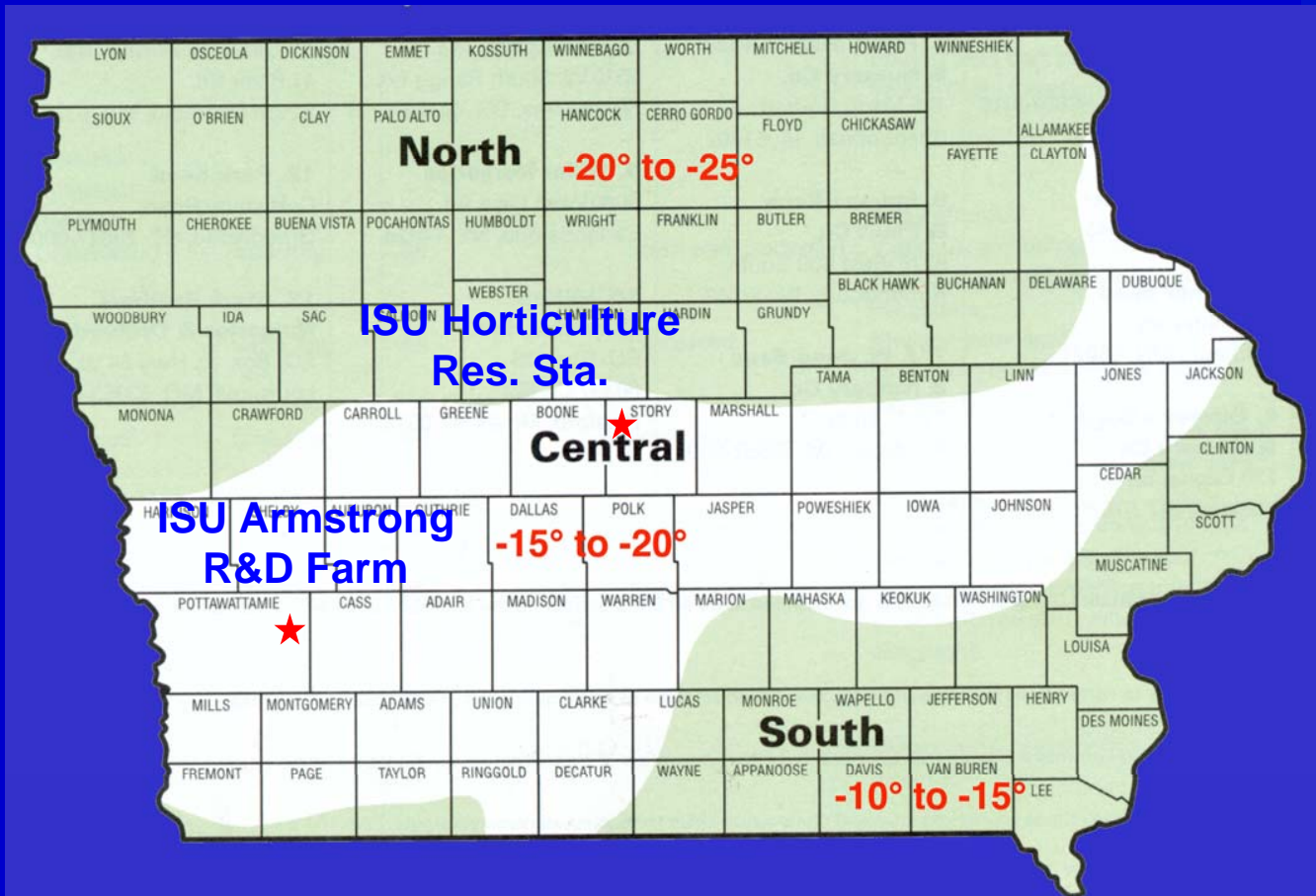


2006
Progress Report on the
2002 Leopold Grape Cultivar
by Management System Trial

Project Leaders

**Drs. Paul Domoto &
Gail Nonnecke**

2002 Leopold Grape Cultivar x Management System Trial



Initiated with a grant from the Leopold Center for Sustainable Agriculture.



Grape Cultivars

Wine		Seedless Table
Maréchal Foch Frontenac Cynthiana St. Croix Chambourcin ^v	Seyval Blanc ^v La Crosse ^v Vignole ^v Traminette ^v Edelweiss	Marquis Vanessa Reliance Mars Jupiter *
^v Trained to VSP		* Planted in 2003

Spacing: 8 x 10 ft, 545 vines per acre

Management Systems - 2006

Systems:	Weed Control	Disease Control	Fertilizer
Conventional	Pre- & Post-emergence Herbicides	Lime sulfur, Nova, Mancozeb, Topsin M, Captan, Sovran, Elevate	Urea
IPM / Best Management	Pre- & Post-emergence Herbicides	Lime sulfur, Nova, Mancozeb, Topsin M, Captan, Sovran, Elevate	Urea
Organic Approved	Straw Mulch & Mechanical	Lime sulfur & Fixed Copper	Corn gluten meal

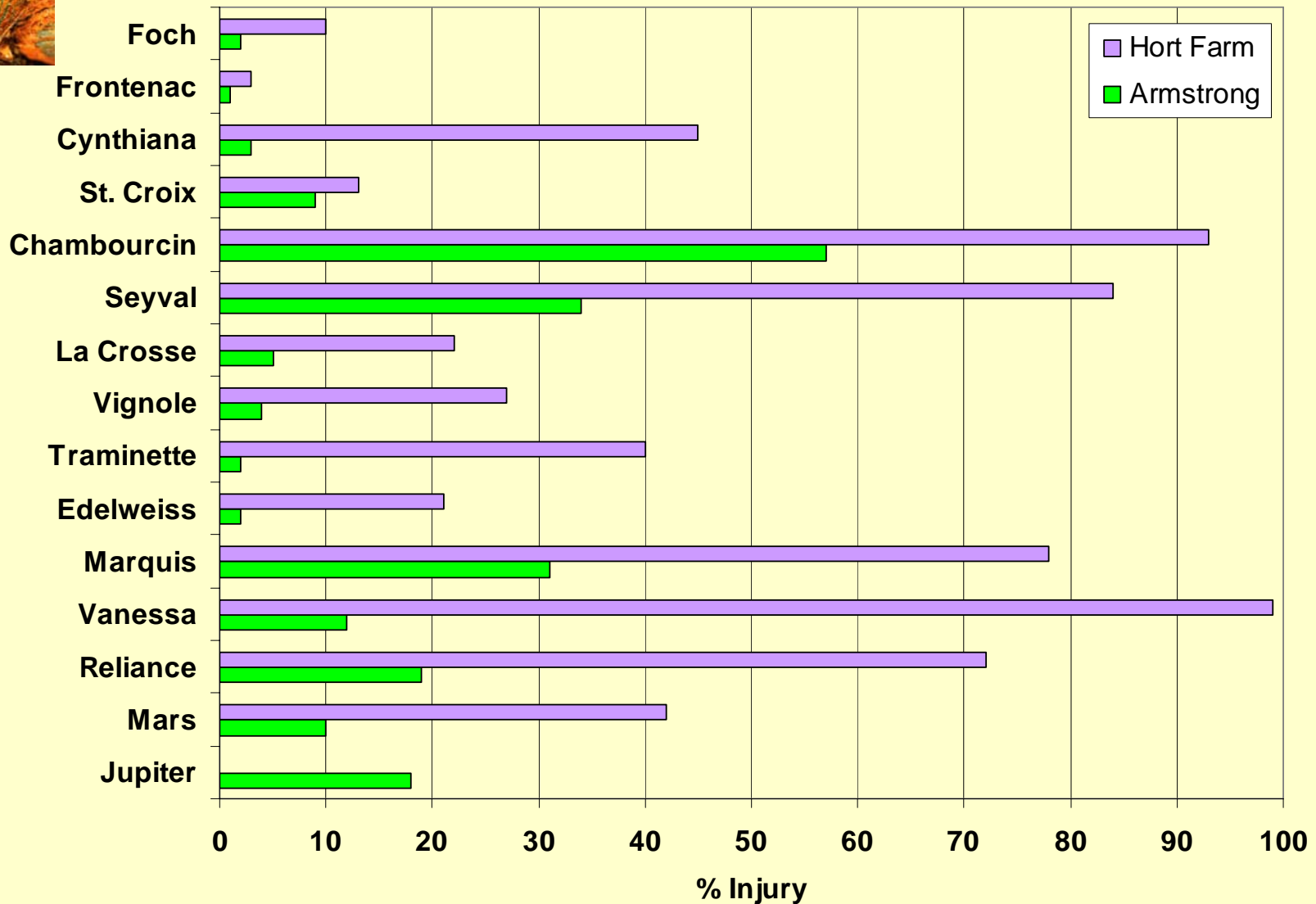
Disease Control Program

Stage	Fungicide	Pest
Dormant	Lime sulfur	Anthracnose
Bud break to bloom	Nova 40 Mancozeb 75 DF	Black rot, Powdery mildew Phomopsis, Downy mildew
Bloom to Shatter	Mancozeb 75 DF + Topsin M <i>or</i> Nova 40 (alternating)	Black rot, Powdery mildew Phomopsis, Downy mildew Botrytis rot, Powdery mildew
1 st Cover to Veraison	Alternate: Sovran & Nova 40 + Captan 50	Black rot, Powdery mildew Downy mildew
Veraison to Harvest	Elevate as needed	Bunch rot

Minimum Temperatures (F) Affecting the 2006 Growing Season

Date	Horticulture Res. Sta.	Armstrong
8 Oct 05	26	28
7-9 Dec 05	-16	-10
18 Feb 06	-15	-10
26 Apr	28	37

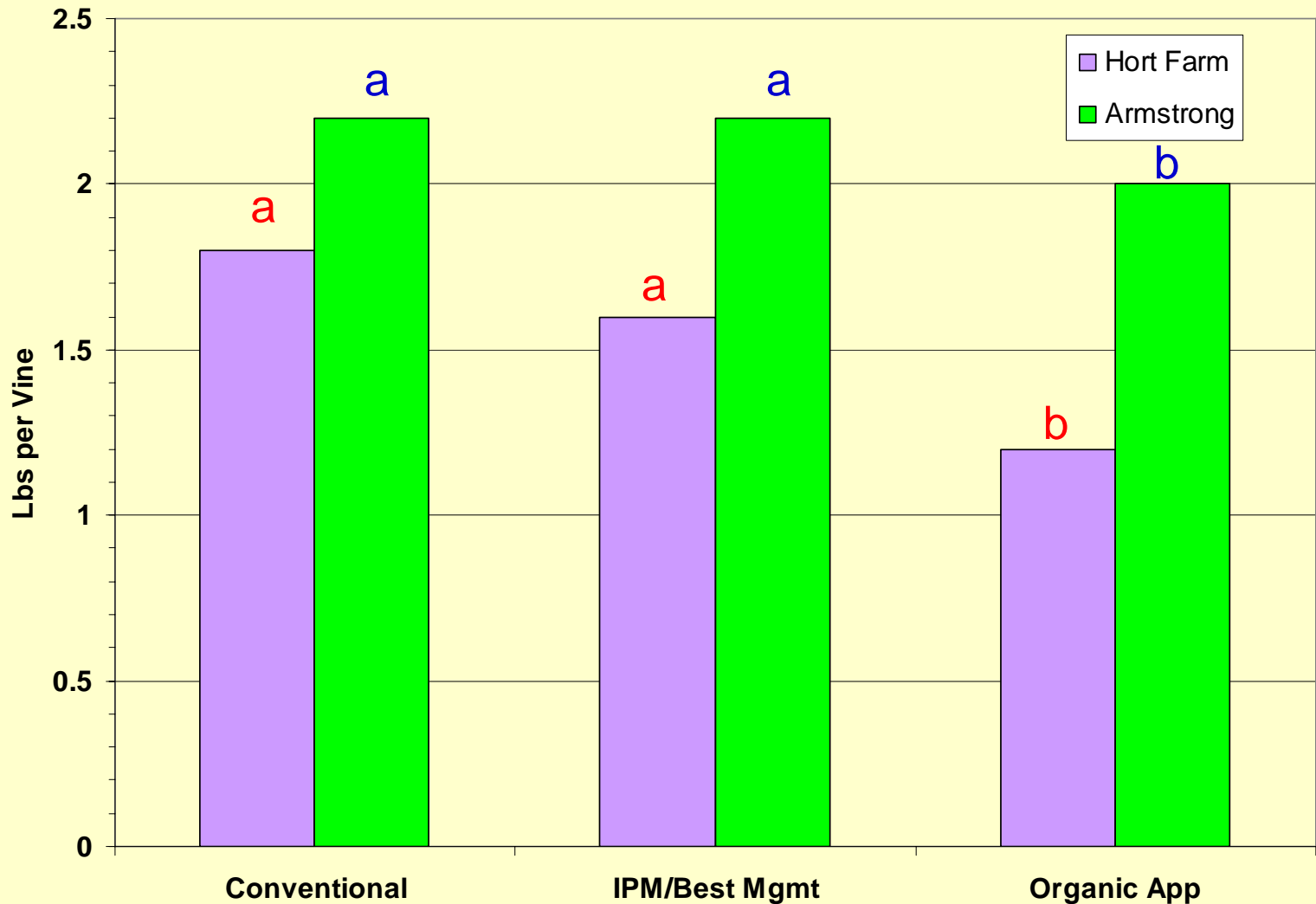
Primary Bud Injury



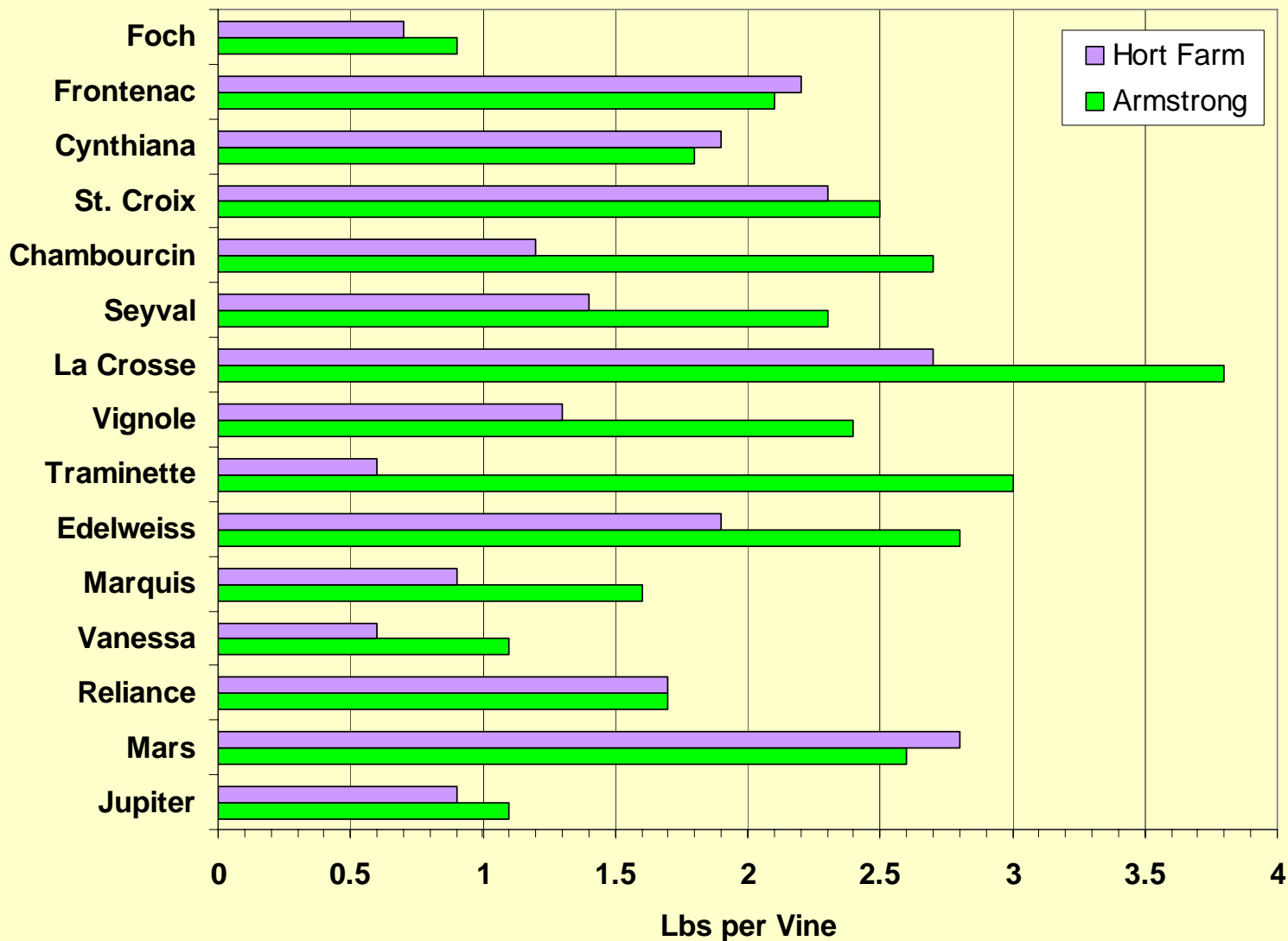
2006 Pruning Adjustment

Cultivar	Formula	Adjustment	
		Hort Res. Sta.	Armstrong
Marechal Foch	20 + 10	none	none
Frontenac	30 + 10	none	none
Cynthiana	30 + 10	43 + 10	none
St. Croix	25 + 10	none	none
Chambourcin	20 + 10	Min. prune	25 + 12
Seyval Blanc	20 + 10	27 + 13	22 + 11
La Crosse	30 + 10	33 + 11	none
Vignole	20 + 10	22 + 11	none
Traminette	20 + 10	25 + 13	none
Edelweiss	30 + 10	36 + 12	none
Marquis	30 + 10	53 + 17	39 + 13
Vanessa	30 + 10	Min. prune	none
Reliance	30 + 10	50 + 16	36 + 12
Mars	30 + 10	45 + 15	none
Jupiter	30 + 10		35 + 12

Pruning Weights

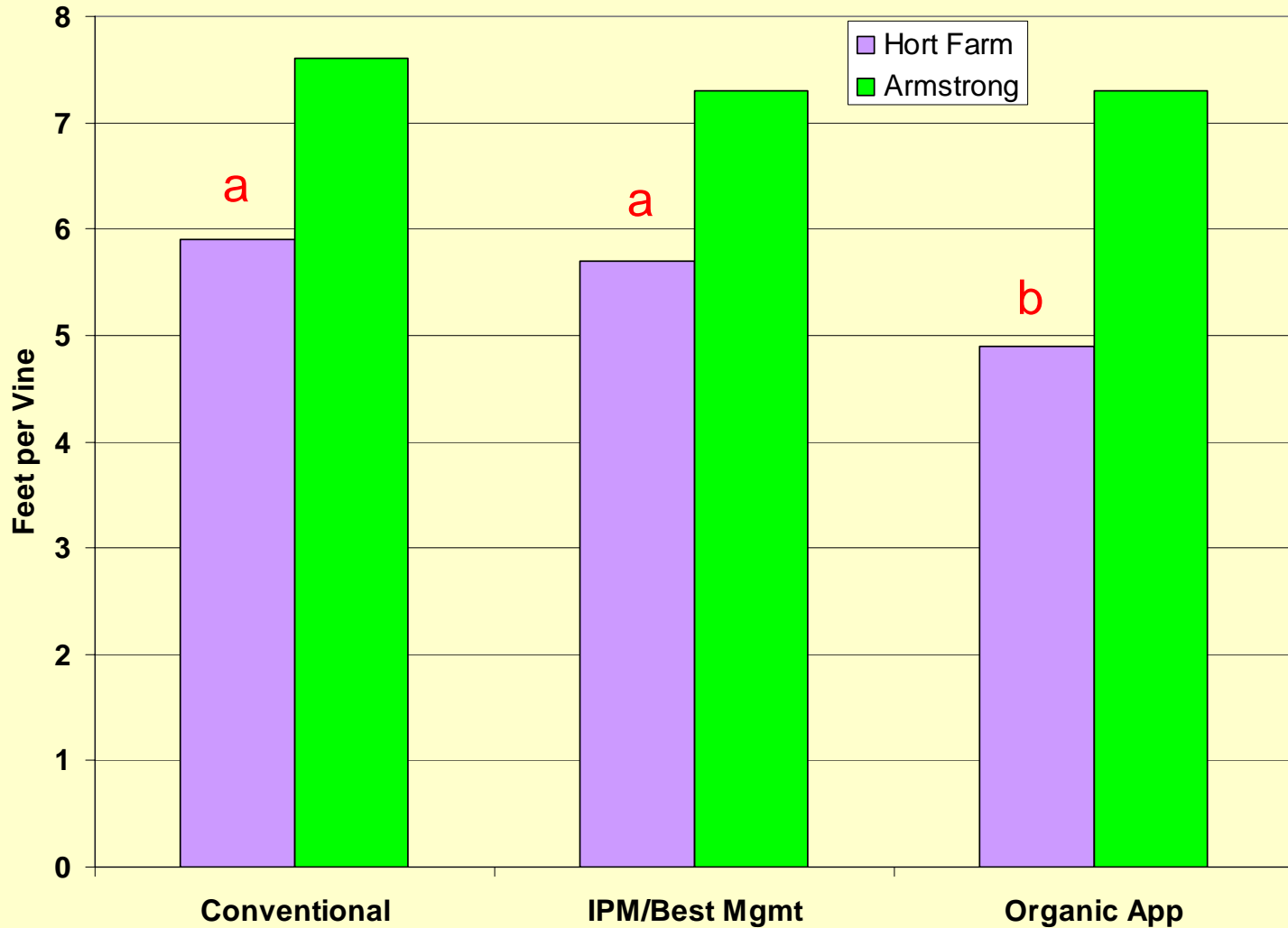


Pruning Weights

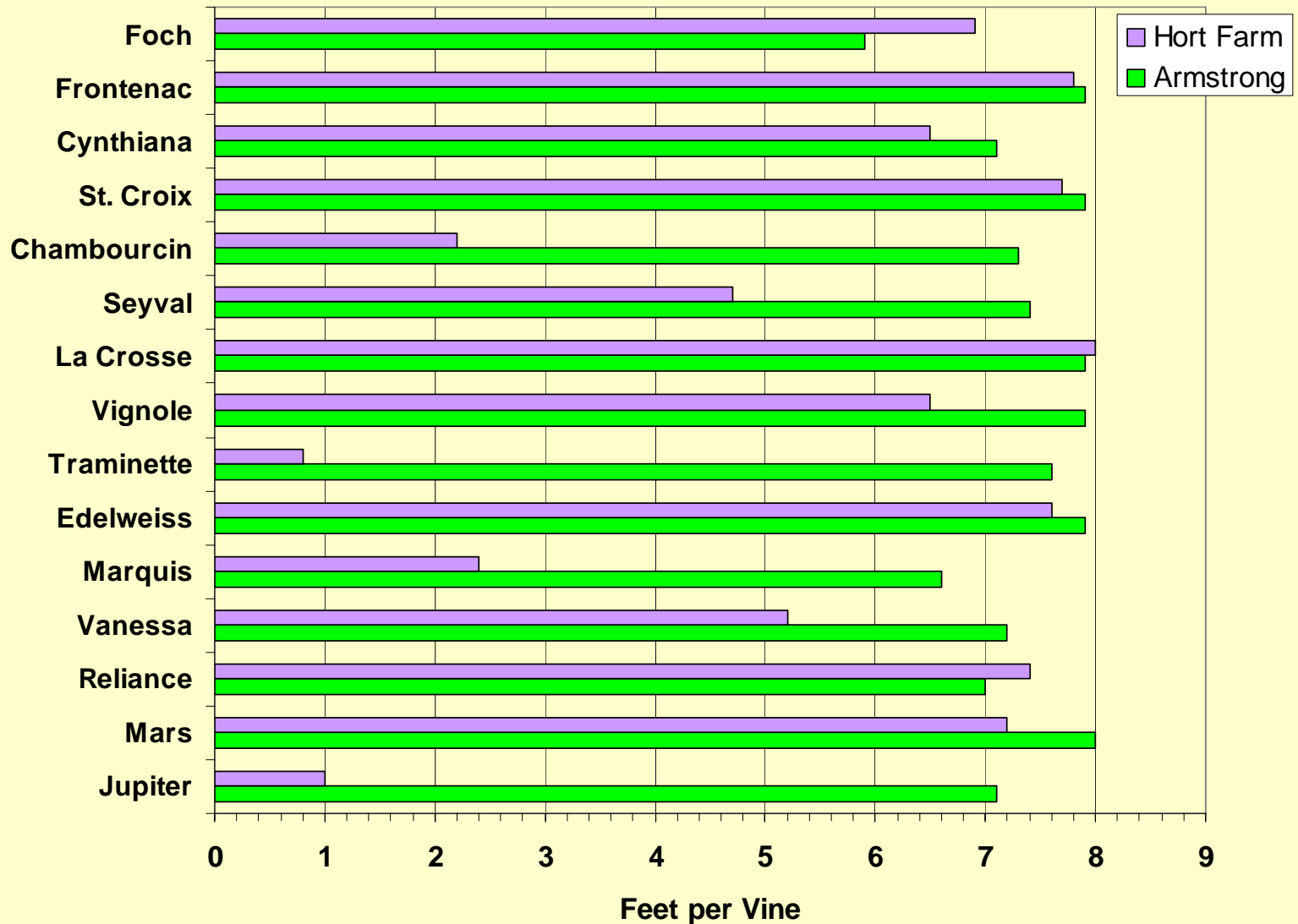




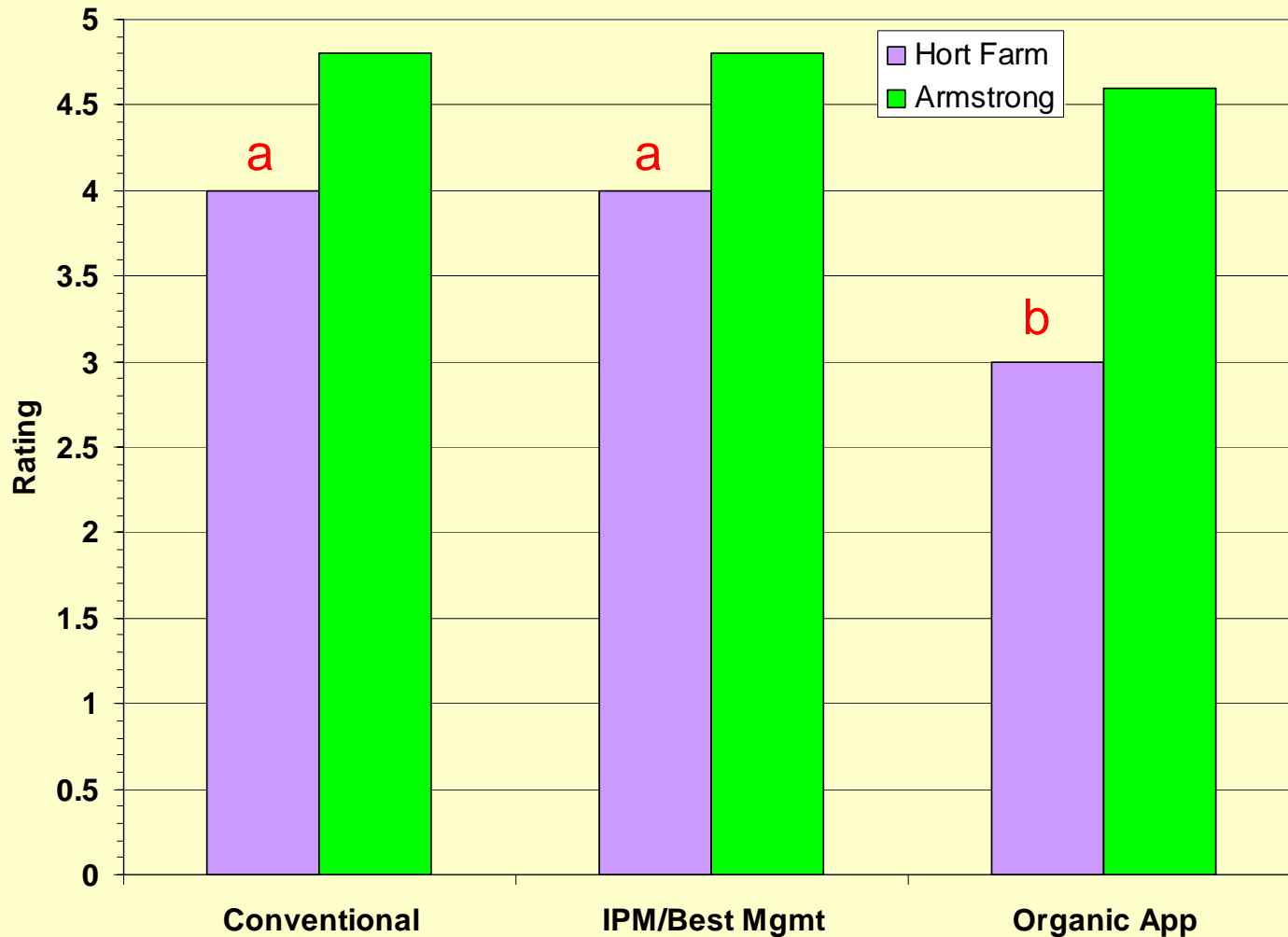
Cordon Establishment



Cordon Establishment



2005 Periderm Formation*



Scale: 0= None; 1 = 1 to 20%; 2 = 21 - 40 %; 3 = 41- 60%
4 = 61- 80 %; 5 = 81 - 100% of the primary shoot length was lignified.

2005 Periderm Formation*



Scale: 0= None; 1 = 1 to 20%; 2 = 21 - 40 %; 3 = 41- 60%
 4 = 61- 80 %; 5 = 81 - 100% of the primary shoot length was lignified.

Winter



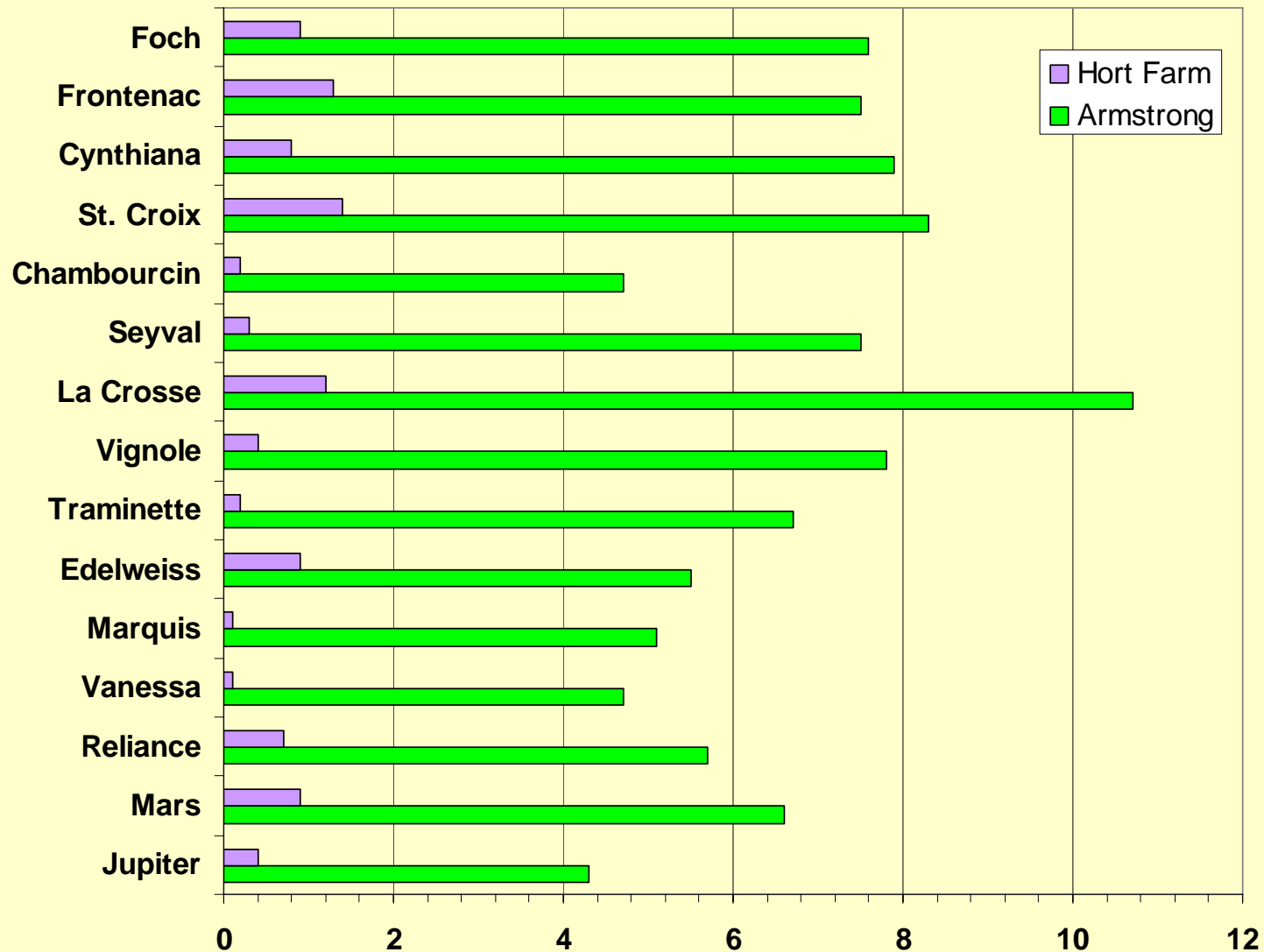
Bud Injury



Spring

With winter and spring bud injury, a count of the live primary buds was taken.

Primary Buds per Foot of Cordon



Cluster Thinning

Cultivar	Clusters per Shoot	
	Arising from a Spur	Arising along a Cane
Marechal Foch	No cluster thinning	2 per 3 shoots
Frontenac	2	2 per 3 shoots
Cynthiana	No cluster thinning	2 per 3 shoots
St. Croix	No cluster thinning	2 per 3 shoots
Chambourcin	1	1 per 3 shoots
Seyval Blanc	1	1 per 3 shoots
La Crosse	No cluster thinning	2 per 3 shoots
Vignole	No cluster thinning	2 per 3 shoots
Traminette	No cluster thinning	2 per 3 shoots
Edelweiss	1	1 per 3 shoots
Marquis	1	1 per 3 shoots
Vanessa	1	1 per 3 shoots
Reliance	1	1 per 3 shoots
Mars	2	2 per 3 shoots
Jupiter	1	1 per 3 shoots

2,4-D Injury: Rated on a scale of 1 (no apparent injury) to 5 (very severe injury).

None
1



Slight
2



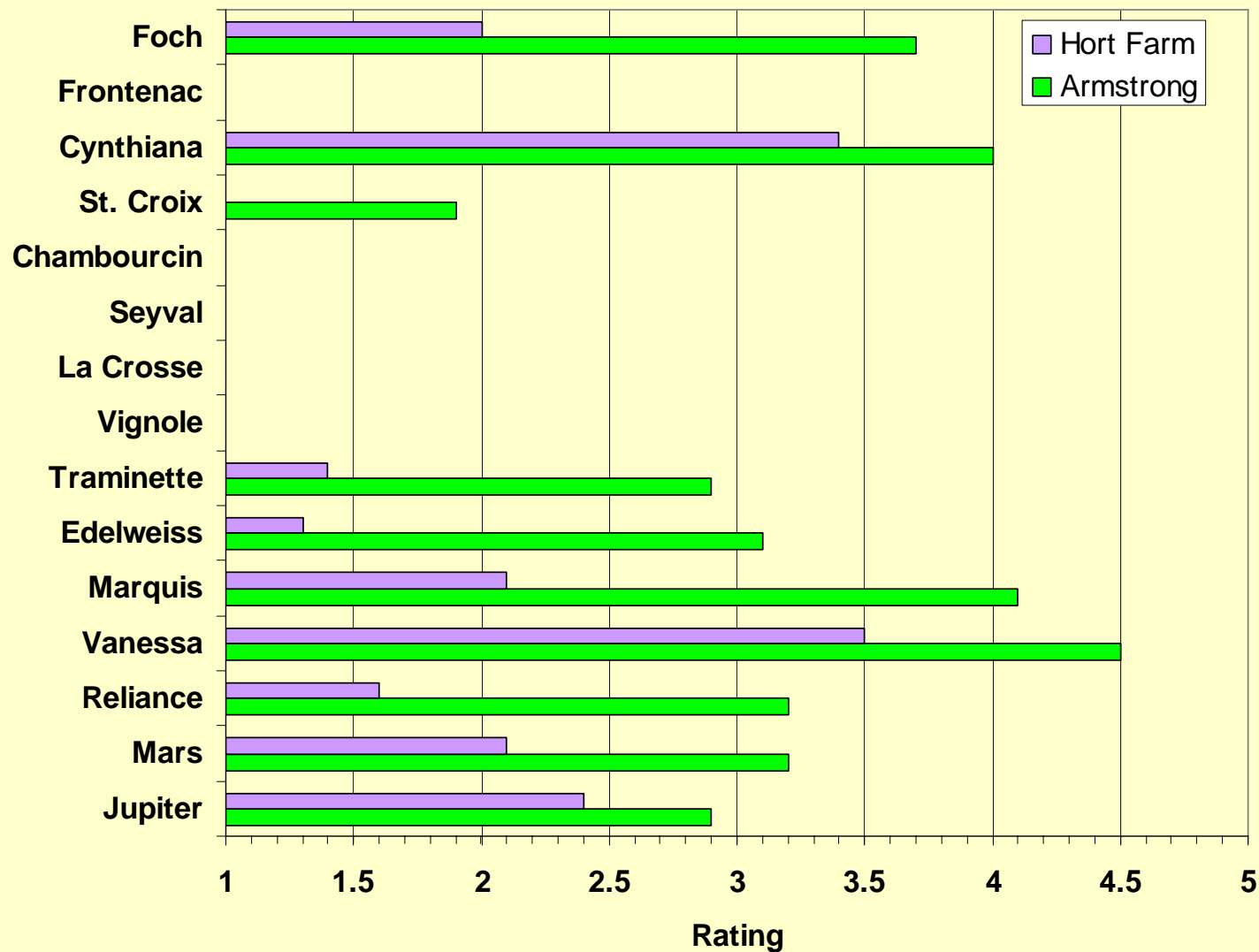
Moderate
3



Very
Severe
5



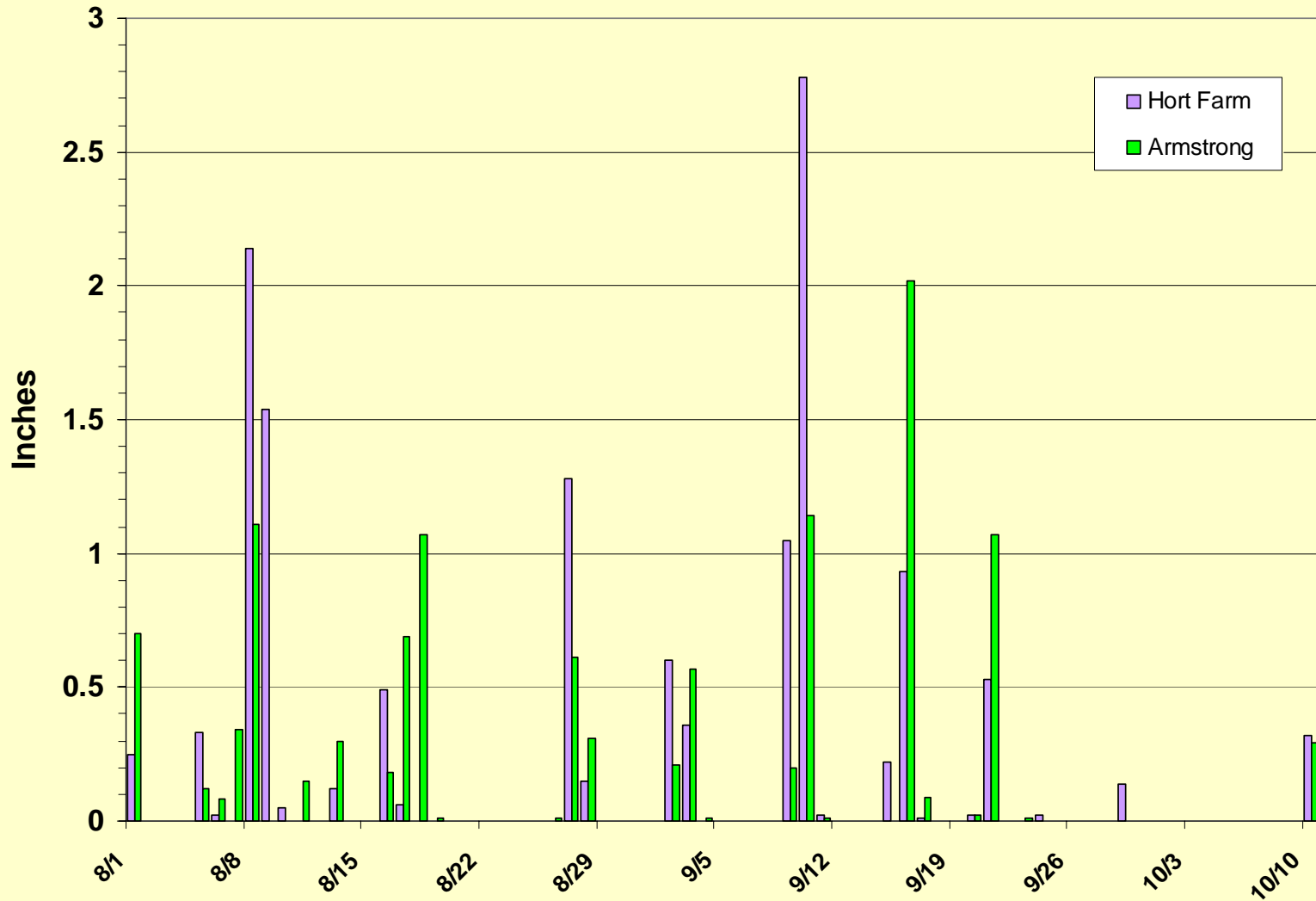
2,4-D Rating



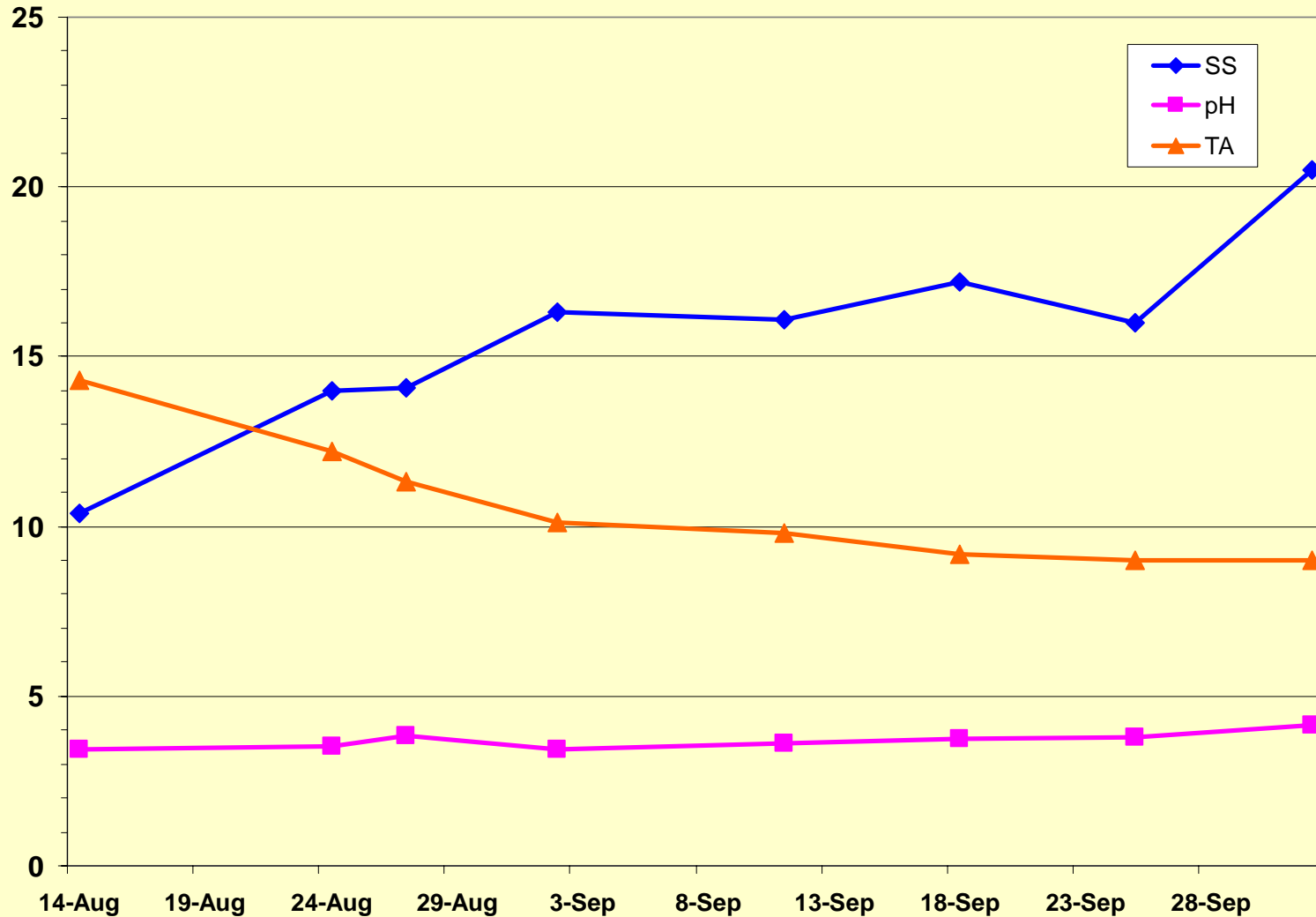
Harvest Dates & Maturity

Cultivar	Hort Res. Sta.				Armstrong Farm			
	Date	SS	pH	TA (g/l)	Date	SS	pH	TA (g/l)
Edelweiss	Aug 16	14.0	3.21	10.0	Aug 17	13.2	3.42	14.1
Marechal Foch	Aug 24	19.0	3.45	10.6	Aug 28	20.1	3.70	9.9
St. Croix	Aug 30	17.5	3.68	8.9	Aug 25	17.2	3.52	9.3
Seyval Blanc	Aug 30	19.5	3.40	7.1	Aug 30	17.4	3.68	9.2
Frontenac	Sep 19	22.4	3.26	10.5	Sep 4	20.4	3.54	13.1
Traminette	Sep 13	18.4	3.33	8.6	Sep 25	19.3	3.61	8.4
La Crosse	Sep 13	17.8	3.26	8.0	Oct 2	20.5	4.16	9.0
Vignole	Sep 19	22.4	3.13	10.4	Sep 25	23.1	3.56	13.4
Chambourcin	Oct 4	22.0	.	.	Oct 9	22.6	3.81	12.8
Cynthiana	Oct 13	22.5	3.08	16.3	Oct 9	23.0	3.81	17.1

Precipitation



La Crosse at the Armstrong Farm



Harvest Dates & Maturity

Cultivar	Armstrong Farm				Hort Res. Sta.			
	Date	SS	pH	TA (g/l)	Date	SS	pH	TA (g/l)
Reliance	Aug 16	18.0	3.30	7.0	Aug 17	16.4	3.44	10.0
Jupiter	Aug 24	19.0	3.68	4.7	Aug 24	18.1	3.79	5.4
Vanessa	Aug 24	20.0	3.56	3.9	Aug 24	19.0	3.77	5.4
Mars	Aug 28	15.7	3.23	6.6	Sep 13	16.7	3.56	6.7
Marquis	Sep 13	17.3	3.52	3.8	Sep 25	16.4	3.81	5.1

Influence of Vineyard Management Practices on Grape Berry Properties*

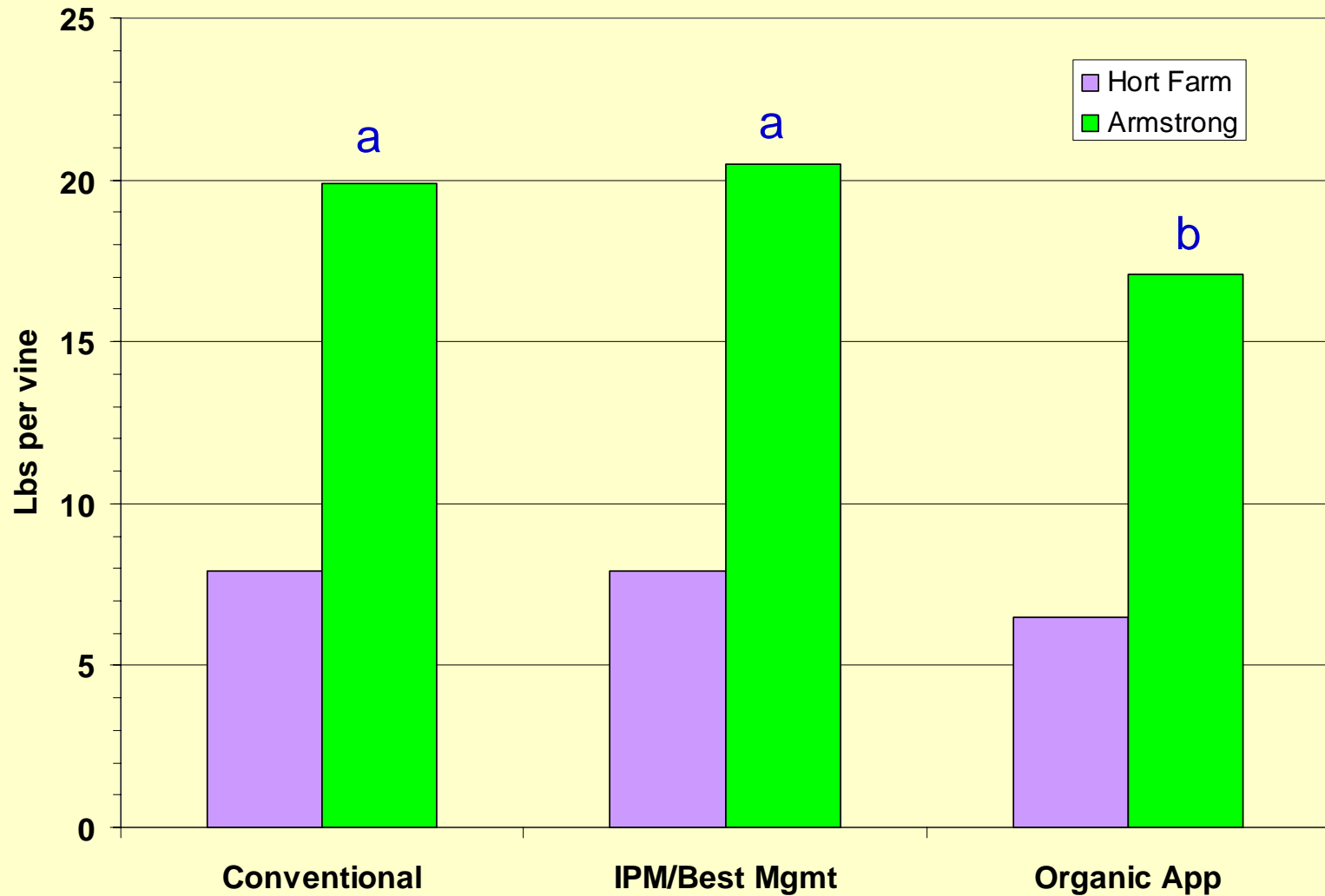
Lisa Wasko, undergraduate student



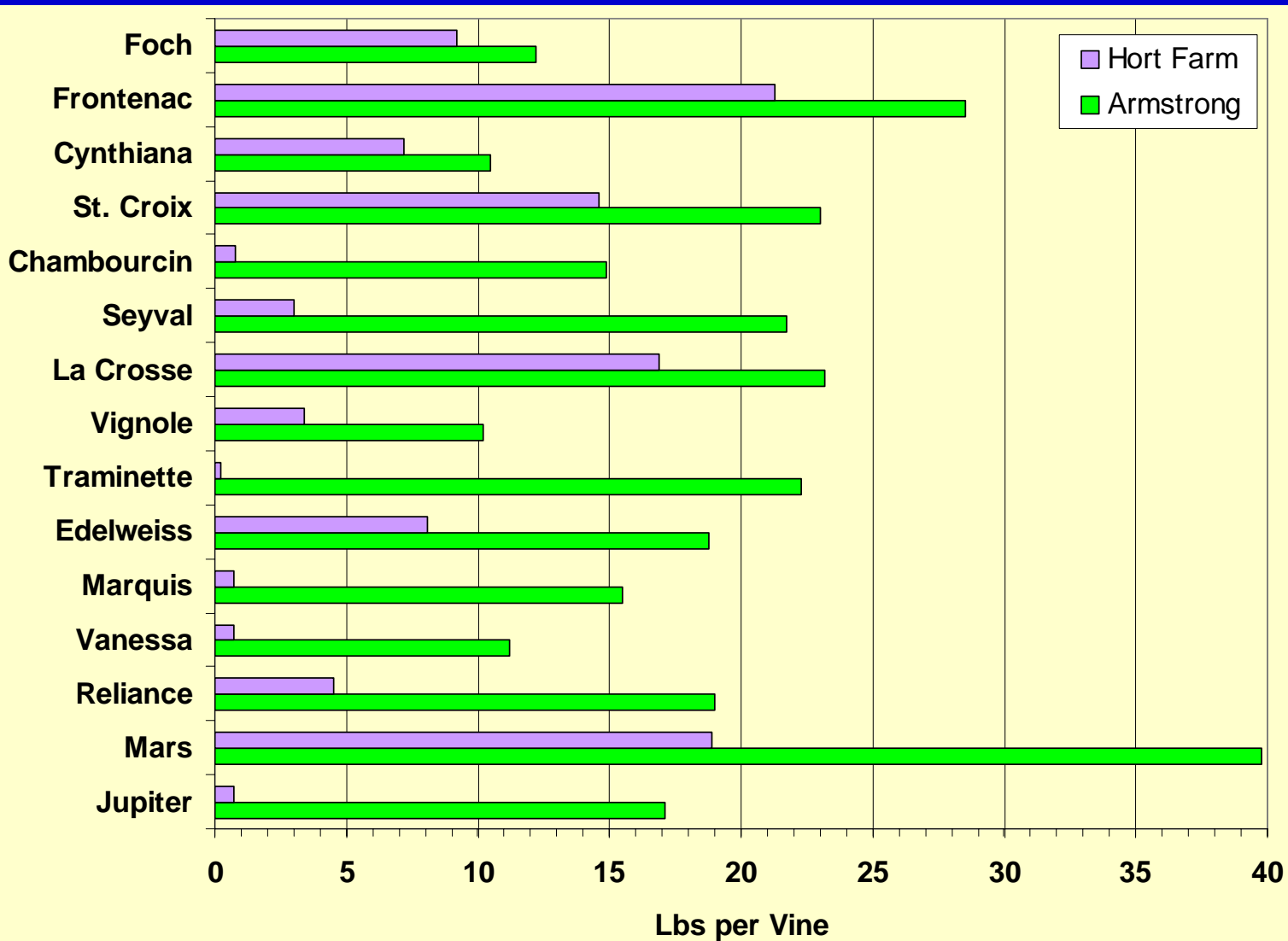
System	Avg. Berry wt. (g)	pH	% SS	TA (g/l)
Conventional	1.46 b	3.29 a	19.68 b	9.48 a
IPM/Best Mgmt	1.57 a	3.28 a	19.61 b	9.37 a
Organic-approved	1.53 a	3.27 a	19.96 a	9.47 a

* Average values for 7 cultivars: Mars, Frontenac, Cynthiana, La Crosse, Vignole, and Seyval Blanc.

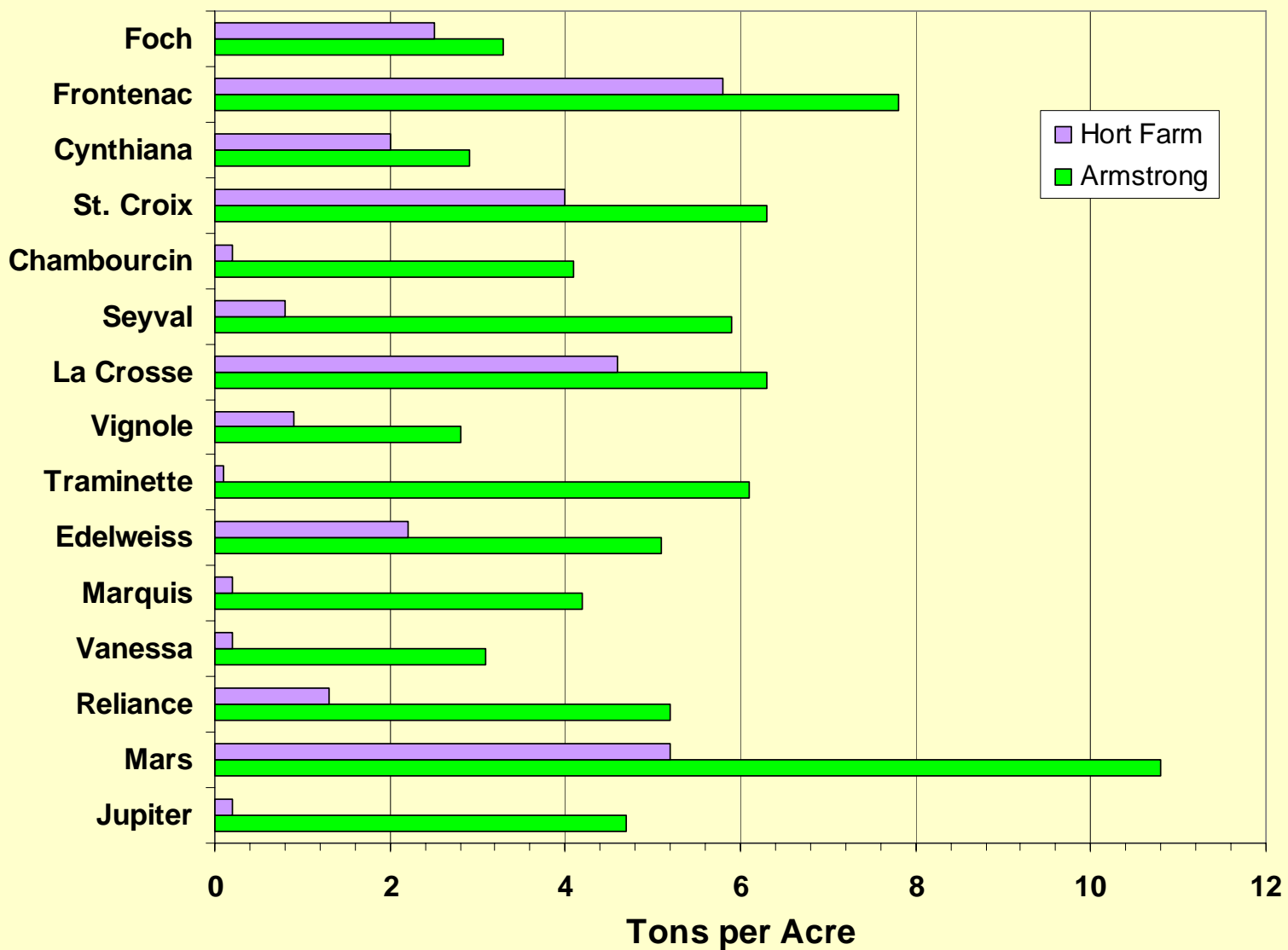
Fruit Yield per Vine



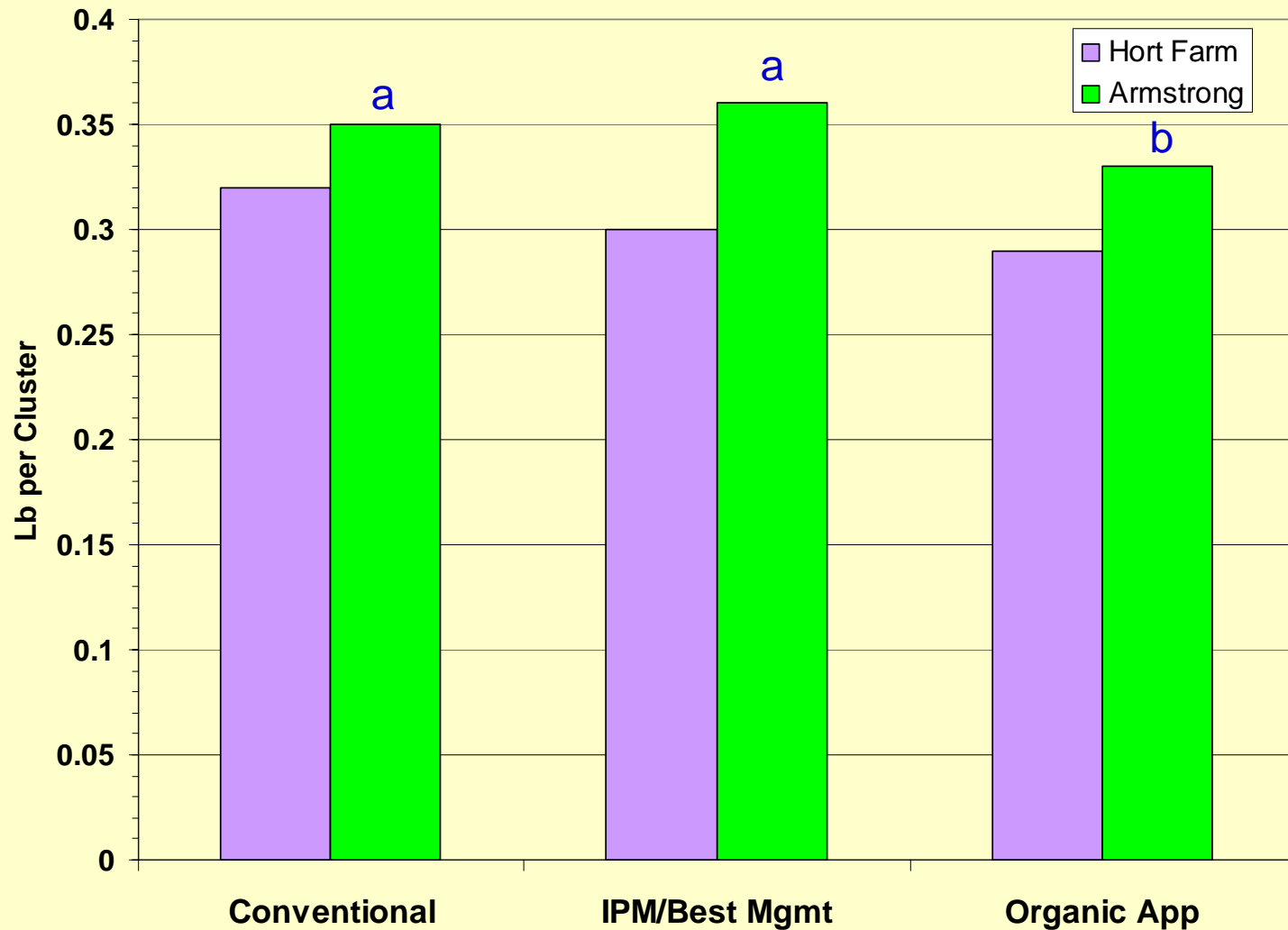
Fruit Yield per Vine



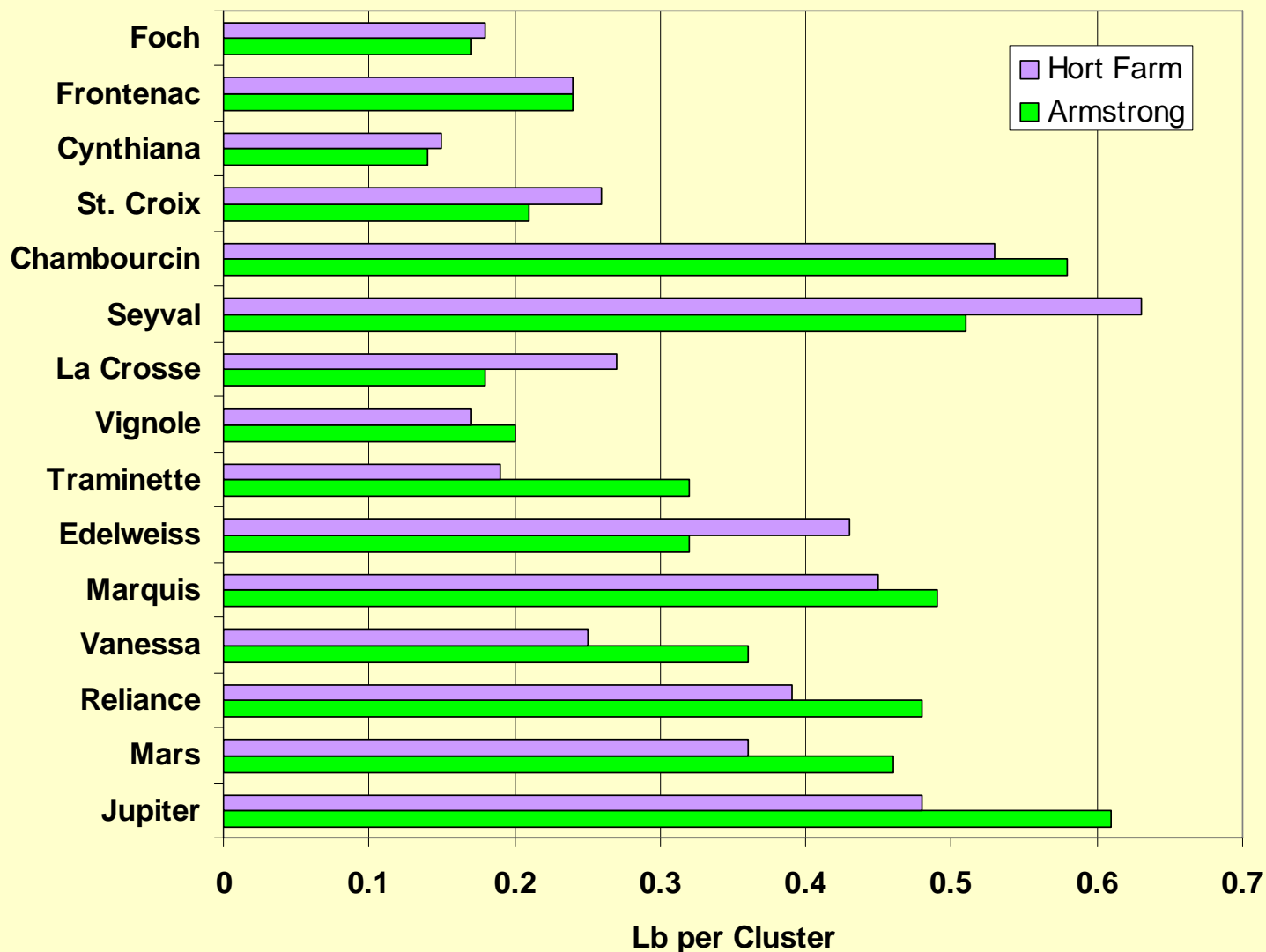
Yield per Acre



Average Cluster Weight



Average Cluster Weight





Seyval

Acknowledgements:

Iowa Grape & Wine Commission

Bernie Havlovic, Armstrong Farm

Nick Howell, Horticulture Res. Station

Dennis Portz, grad student