NE 1720 University of Nebraska Viticulture Program Report

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Respond to the objectives and what was accomplished under these goals. **List short and sweet impact statements under each objective (no more than 50 words)**

1. Screen the viticulture characteristics of clones, cultivars and elite germplasm with significant potential throughout the USA.

2. Evaluate the viticultural and wine attributes of promising emerging cultivars and genotypes based on regional needs.

Objectives 1&2 Accomplishments:
Over 100 grapevine cultivars and selections have been evaluated over a period of 20 years by the University of Nebraska Viticulture Program. New selections from private breeders, the University of Minnesota and Cornell University have been tested for cold hardiness, tolerance to abiotic and biotic stresses, response to vineyard floor and trellis management systems, yield and fruit and wine quality and characteristics. New fertilizer and crop load adjustments are being explored in collaboration with UNL Food Science Department professionals (new faculty, Doctors Changmu Xu and Xiaoqing Xie).

3. Conduct explorations of new germplasm and lesser-known cultivars that may have economic potential for the US wine industry.

New selections from Cornell University, the University of Minnesota, North Dakota State University and a private breeder (Ed Swanson, Cuthills Vineyards owner and Capitol View Winery winemaker) have been newly initiated.

Include any data, gemplasm/cultivar descriptions, research results, etc. that you would like to discuss at the meeting. Please keep this brief, highlighting no more than three discussion points within 500 words. Additional information (data tables, abstracts, etc…) can be included in an appendix.

Harvest data collected from the table grape high tunnel project evaluating five different table grape cultivars.

Cultivar	Avg. Cluster Count	Total Yield - 15 plants (lbs)	Avg. Yield/Plant (lbs)	Avg. Cluster Weight (lbs)	Avg. pH	Avg. °Brix	Avg. TA
Canadice	5.6	n/a	n/a	n/a	3.12	19.6	6.96
Marquis	35	141	9.42	0.26	3.68	15.3	2.89
Thomcord	58	478	32	0.57	3.14	19.1	9.3
Mars	74	241	16	0.22	3.67	18.7	3.75
Somerset	33	204	14	0.33	3.43	18	10.72

Impact of in-row and alleyway planted groundcovers on yield and juice quality in 'Edelweiss' grapevines.

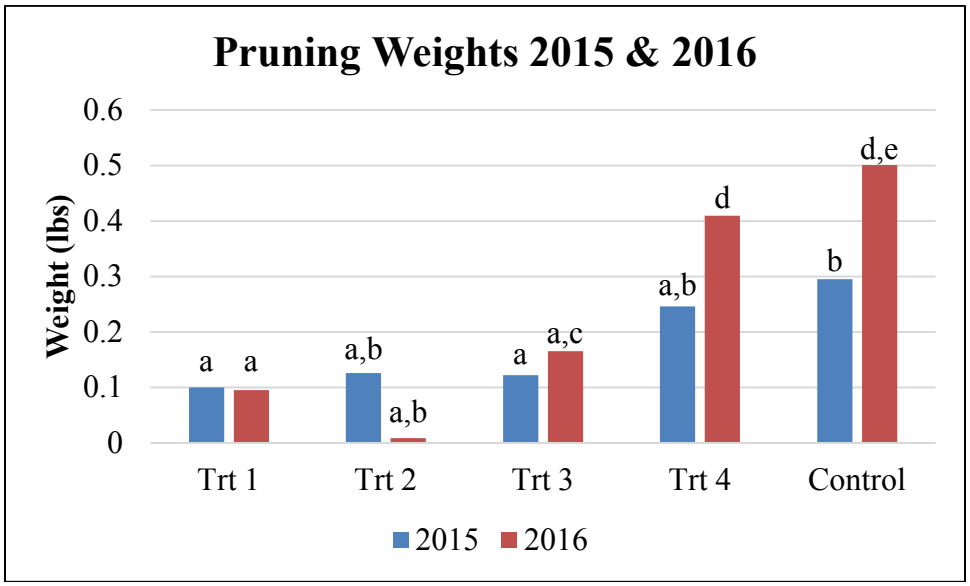
Trt 1 = Western Yarrow, Birdsfoot Trefoil and Dutch Clover; Trt 2 = Hard Fescue, Sheep's Fescue, Sideoats Grama, Buffalograss and Blue Grama; Trt 3 = KY Bluegrass, White Clover, Red Fescue, Hard Fescue and Chewing's Fescue; Trt 4 = Texoka Buffalograss; Control = weeds controlled by herbicide under-row.

2016	Cluster Number	Avg Vine Yield (g)	Avg Cluster Weight (g)	Avg Berry Weight (g)	°Brix	pH	TA
Trt 1	46.1 a	2709.6 a	58.6 a	1.8 a	15.8 a,b	3.2	10.3 a
Trt 2	32.3 a	2575.1 a	58.0 a	1.8 a	15.8 a,b	3.2	10.3 a
Trt 3	53.3 a	2345.1 a	57.5 a	1.8 a	15.9 a,b	3.2	10.2 a
Trt 4	60.9 a	2345.1 a	58.6 a	1.8 a	15.9 b	3.2	10.0 a
Control	51.2 a	2382.1 a	59.1 a	1.8 a	16.0 a	3.2	10.0 a
2017	**Cluster Number**	**Avg Vine Yield (g)**	**Avg Cluster Weight (g)**	**Avg Berry Weight (g)**	**°Brix**	**pH**	**TA**
Trt 1	112.0 a	4989.5 a	43.7 a,b,d	2.3 a	18.0	3.4	7.6 a,b
Trt 2	52.4 b	1583.0 b	29.1 a,b	2.0 a	17.1	3.3	8.5 b
Trt 3	118.0 a	5302.5 a,c	56.0 c,d	2.1 a	18.2	3.5	6.5 a

Trt 4	105.6 a	4136.8 a,b	36.3 a	2.0 a	15.7	3.4	8.2 b
Control	150.5 a	7833.5 c	49.9 d,c	2.1 a	17.0	3.4	8.2 b

*Values with the same letter in the same column indicate no statistical differences at $p \leq 0.05$

Impact of in-row and alleyway planted groundcovers on the pruning weights in two and three year old 'Edelweiss' grapevines. See treatments on above table.



List retrievable or archived publications arising from your collaborative research projects including journal articles, book chapters, review articles, theses, proceedings, and extension publications. Please use ASHS style.

Title	Authors	Year	Type	Presented/Published	Status
History of Viticulture and Wine Making in Midwest USA	Read, P.E. Loseke, B.A. Gamet, S.J.	2019	Journal Article	Acta Horticulturae	Accepted
Teaching Beverage Crop Science: Vines, Wines and You, a Case Study	Read, P.E. Loseke, B.A. Gamet, S.J.	2019	Journal Article	Acta Horticulturae	Accepted
Relating Harvest Timing to Growing Degree Day Accumulation	Read, P.E. Loseke, B.A. Gamet, S.J.	2019	Journal Article	Acta Horticulturae	Accepted
Biofortification with Selenium and Lithium Improves	Zhao, H. Xie, X. Xu, C. Read, P.E.	2019	Journal Article	Journal of Agricultural and Food Chemistry	In Review

Nutraceutical Properties of Major Winery Grapes in the Midwestern United States	Li, W. Loseke, B.A. Gamet, S.J.				
Rootstock and Mounding Affect Growth and Cold Hardiness of Young 'Gewürztraminer' (Vitis vinifera) Vines	Gu, S. Read, P.E. Loseke, B.A.	2019	Journal Article	International Journal of Fruit Science	In Review
Impact of Alleyway and In-row Planted Groundcovers on 'Edelweiss' Grapevine Growth and Fruit Production	Read, P.E. Loseke, B.A. Gamet, S.J.	2019	Journal Article	International Journal of Fruit Science	Submitted
High Tunnel Table Grapes: An Alternative to Field Production in Nebraska?	Read, P.E. Loseke, B.A. Gamet, S.J.	2019	Poster	American Society for Horticultural Science	Presented
Chilling Requirements for 'Edelweiss', 'Frontenac' and 'Norton' Grapevines	Read, P.E. Loseke, B.A. Gamet, S.J.	2019	Poster	American Society for Horticultural Science	Presented
Hybrid Trunk Disease Evaluation: A Serendipitous Opportunity	Read, P.E. Loseke, B.A. Gamet, S.J.	2019	Oral Pres.	International Workshop on Trunk Diseases	Presented
Trunk Diseases and Winter Injury in NE America, How are They Related?	Smart, R. Barriault, E. Read, P. Volenberg, D.	2019	Magazine Article	Wine Business Monthly	Published