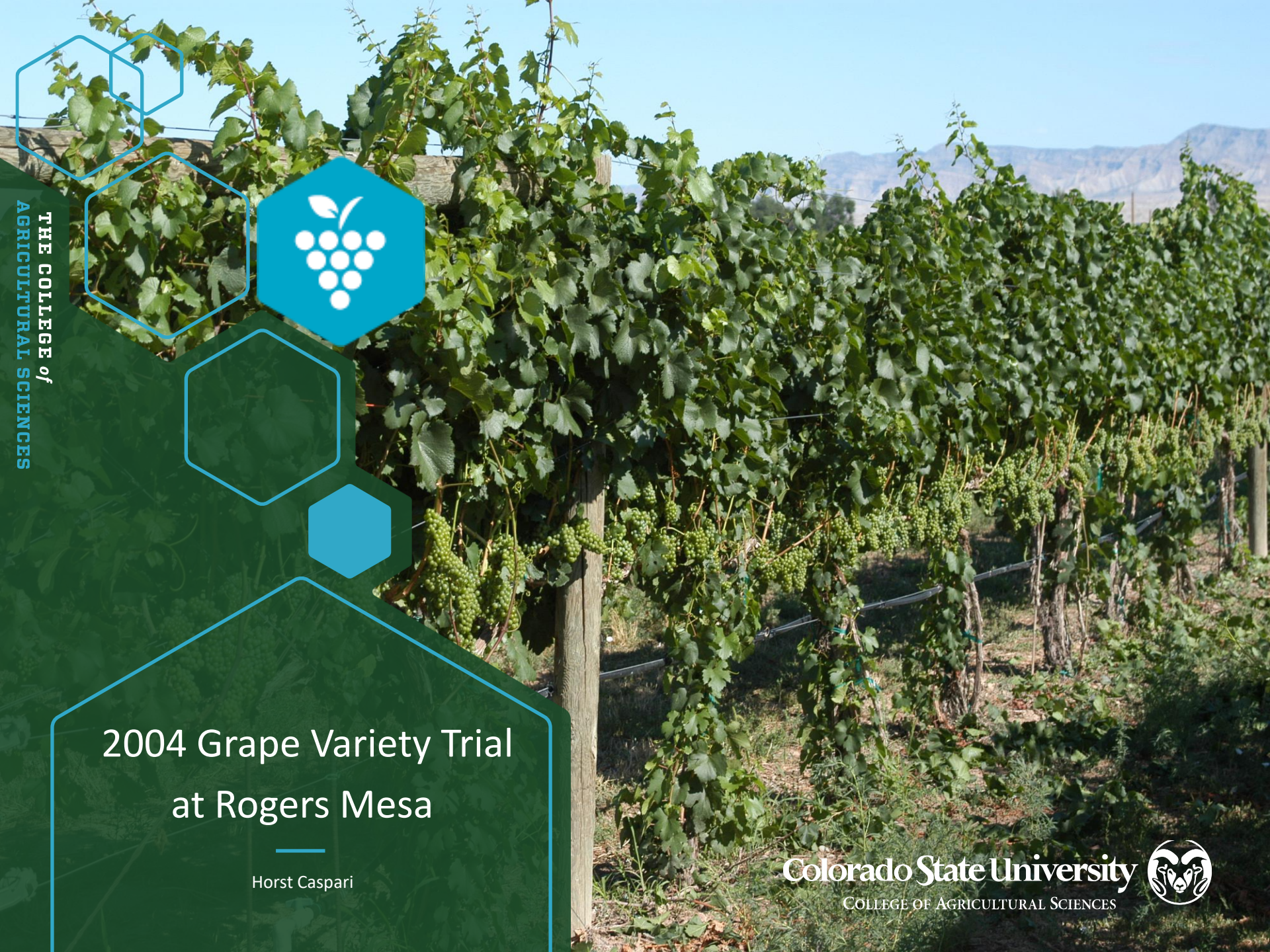

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2004 Grape Variety Trial at Rogers Mesa

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Grape variety trial (2004) at Rogers Mesa

In 2004, we started a variety and clonal trial at the Western Colorado Research Center – Roger Mesa.

Evaluation of several *V. vinifera* and hybrid varieties rarely used in Delta County.

Evaluation of Pinot noir clones.

Evaluation of irrigation / soil management systems.

Grape variety trial (2004) at Rogers Mesa

White varieties:

Riesling, Rkatsiteli, Traminette, Valvin Muscat

Red varieties:

Chambourcin, Corot noir, Geneva Red, Noiret

Dornfelder, Malbec, Pinot noir, Pinot Meunier, Regent

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Grape variety trial (2004) at Rogers Mesa

Pinot noir clones:

02A, 09, 23, 29, 115, 236, 777, Geneva, Pernand

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Materials and Methods

Planted in 2004, with additions in 2006

All vines are own-rooted

Vine x row spacing is 4’-6’ x 7’-8’

Cordon and spur

Vertical Shoot Positioning

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Soil / irrigation management

Comparison of two soil/irrigation treatments, each replicated twice:

Drip irrigation with bare soil in the inter-row area

Micro-sprinkler irrigation with a perennial grass cover crop in the inter-row area

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Bud cold hardiness

Controlled freezing test were used to monitor bud cold hardiness of Chambourcin and Rkatsiteli over 7 and 8 years, respectively.

Bud survival was evaluated for all varieties prior to dormant pruning.

Pruning adjustments were made if/when primary bud mortality exceeded 5 %.

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Results

First crop in 2006
On 30 Nov, 2006 the minimum temperature was -9.9 F.
There was close to 100 % bud mortality on Dornfelder, Pinot noir, Regent, and Valvin Muscat.
Riesling and Rkatsiteli had about 50 % bud mortality.
Chambourcin had about 10 % bud mortality.
Corot noir, Geneva Red, and Noiret had 0 % bud mortality.

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Results

In 2007, we had no crop on Dornfelder, Pinot noir, Regent, Traminette, and Valvin Muscat.

We would have had a full crop except for 100 % bird damage on Chambourcin, Corot noir, Geneva Red, Noiret.

Riesling (1.4 ton/acre) and Rkatsiteli (2.6 ton/acre) produced about half a crop.

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Results

Minimum temperatures during dormancy in the following years were

-3.4 F (17 Jan 2008)
-0.2 F (15 Dec 2008)
-6.7 F (10 Dec 2009)
-9.8 F (3 Feb 2011)
-1.9 F (24 Dec 2011)
-11.8 F (15 Jan 2013)
-7.3 F (5 Dec 2013)
1.9 F (1 Jan 2015)
-5.7 F (27 Dec 2015)

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Results

Malbec, Pinot noir, and Pinot Meunier were removed after the 2014 season due to very poor performance.

There was 100 % crop loss 5 times with Pinot noir between 2006 and 2014.

There was 100 % crop loss 5 times with Pinot Meunier between 2008 and 2014.

Malbec never produced a crop.

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Results

In 2015, despite netting the entire crop was destroyed by birds and racoons.

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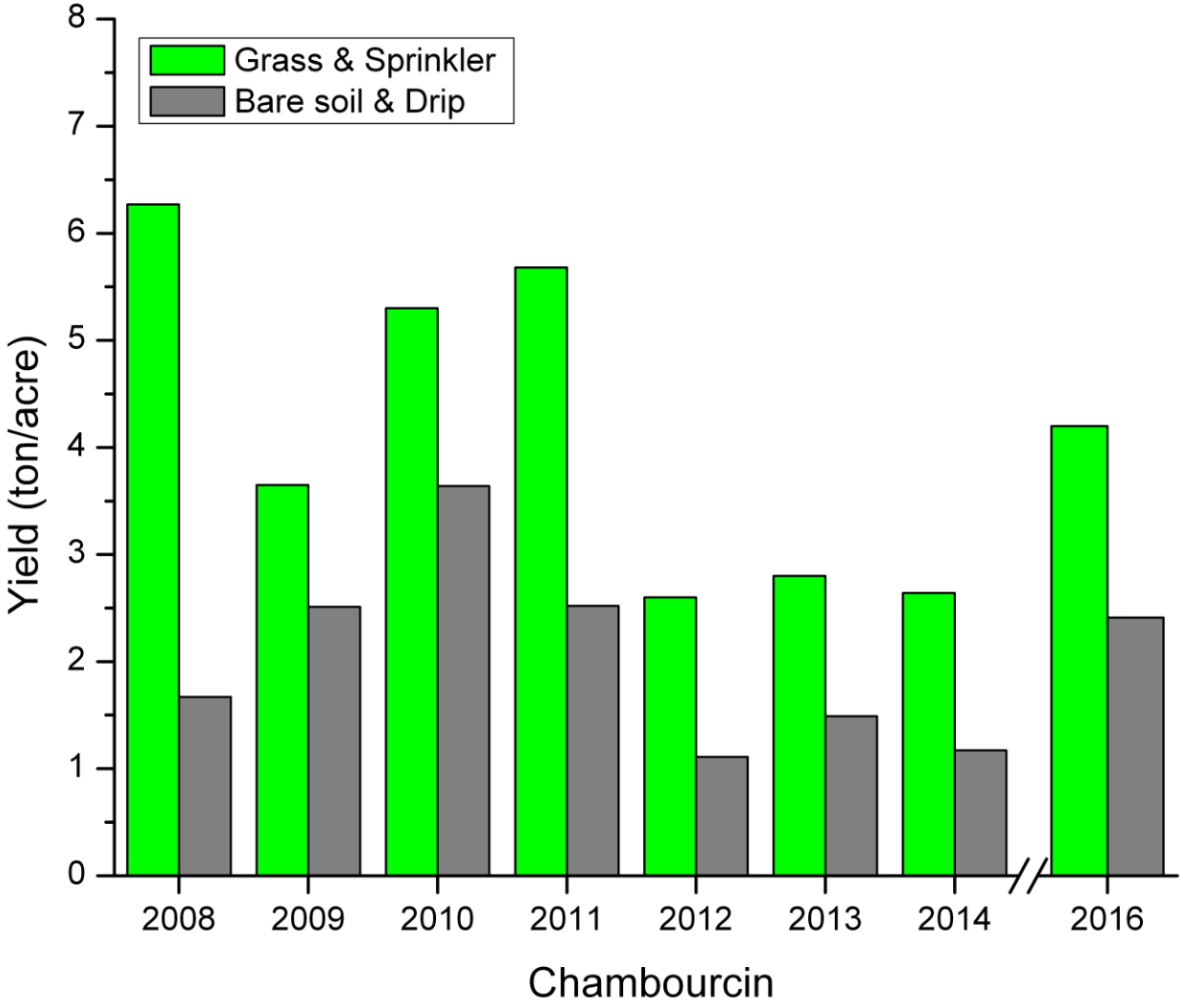
Chambourcin, 2008 - 2016



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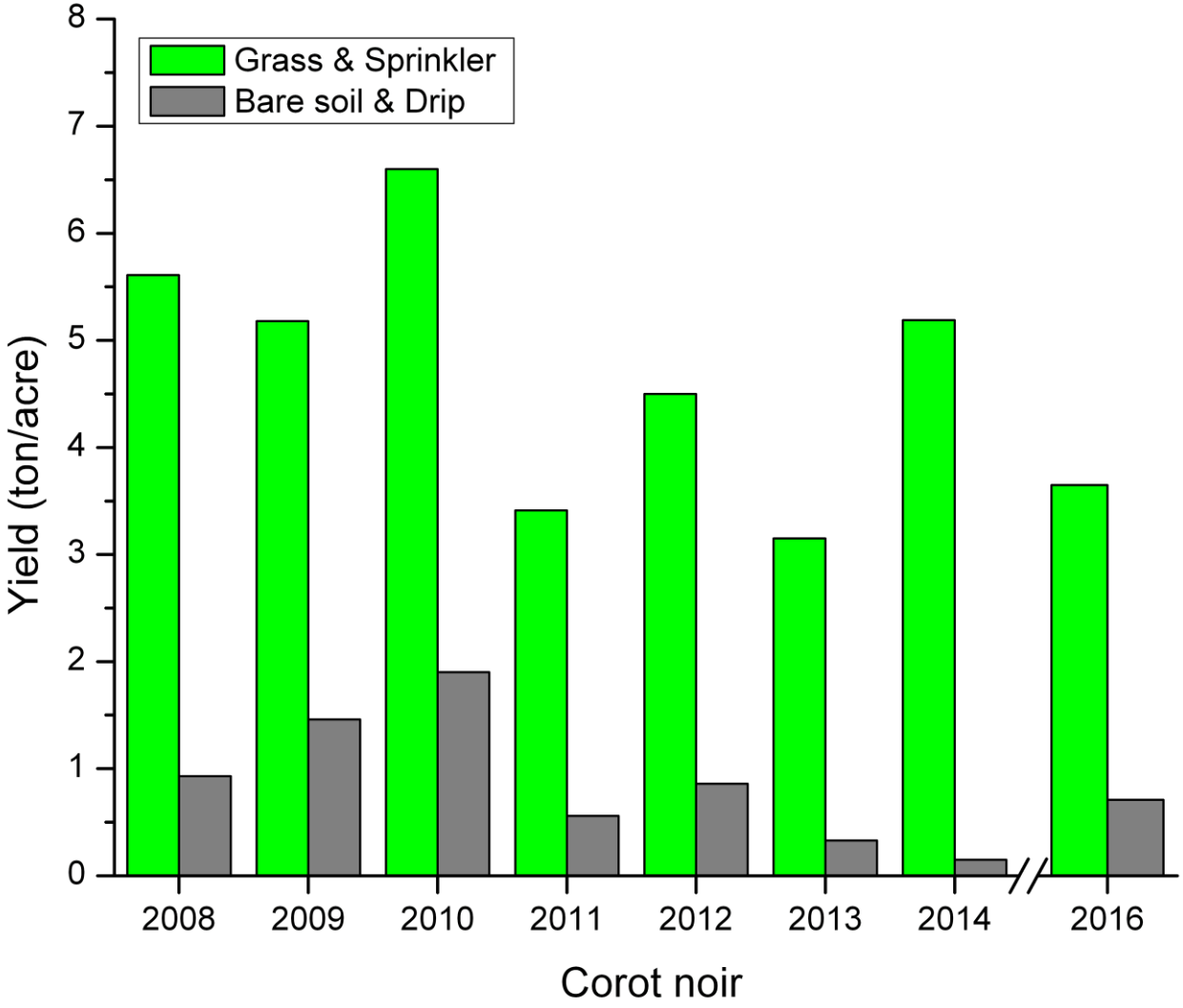
Corot noir, 2008 - 2016



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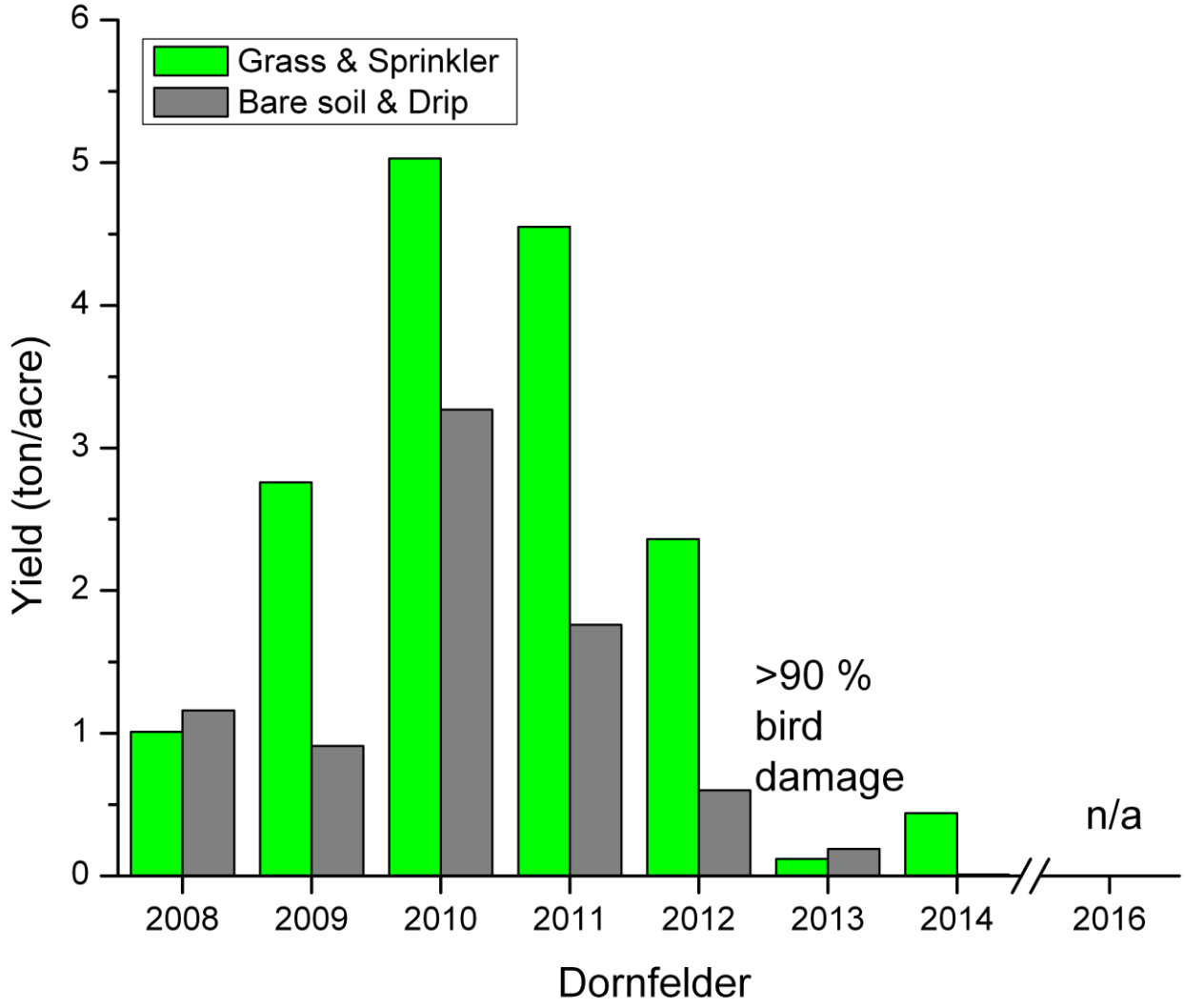
Dornfelder, 2008 - 2016



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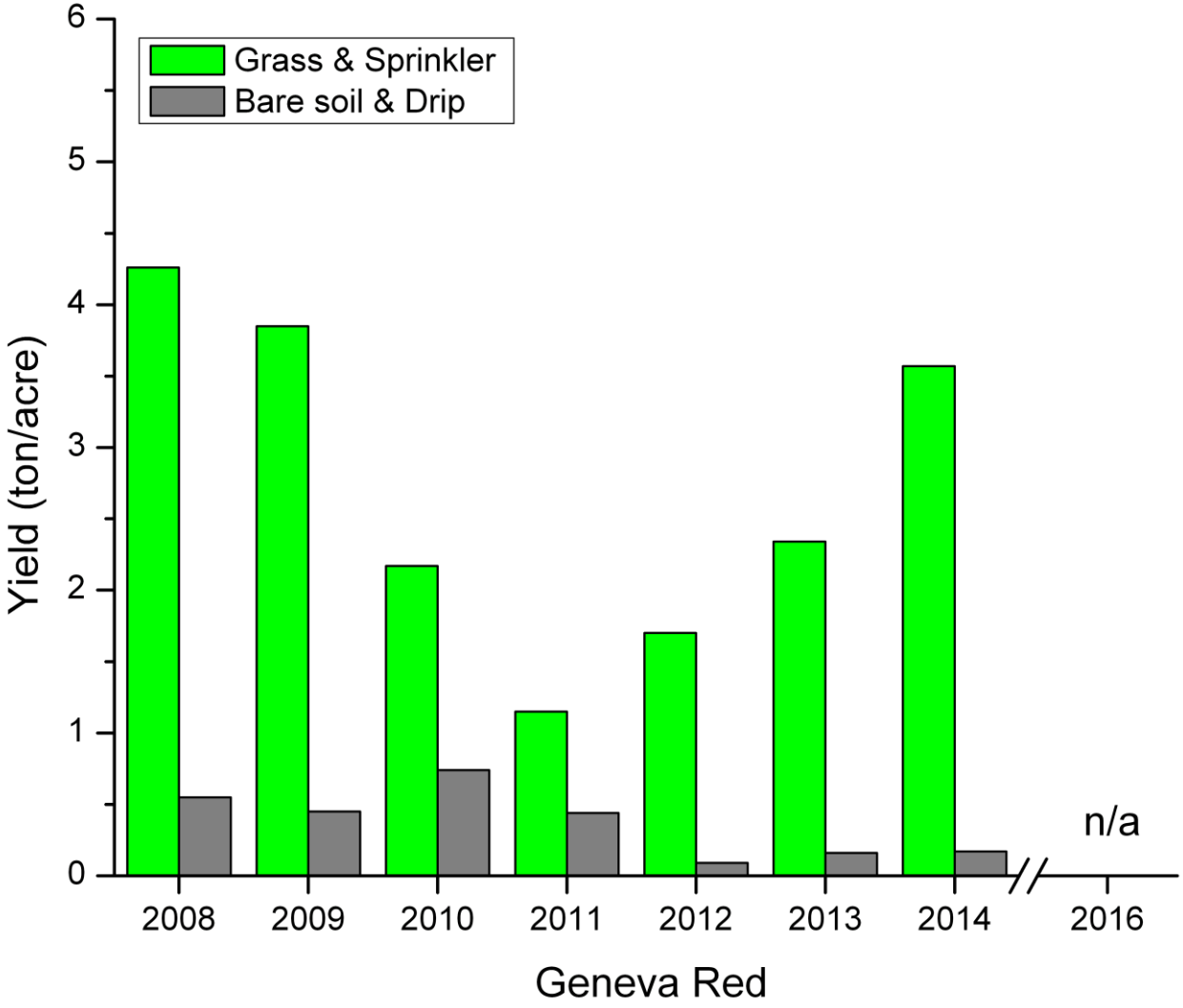
Geneva Red, 2008 - 2016



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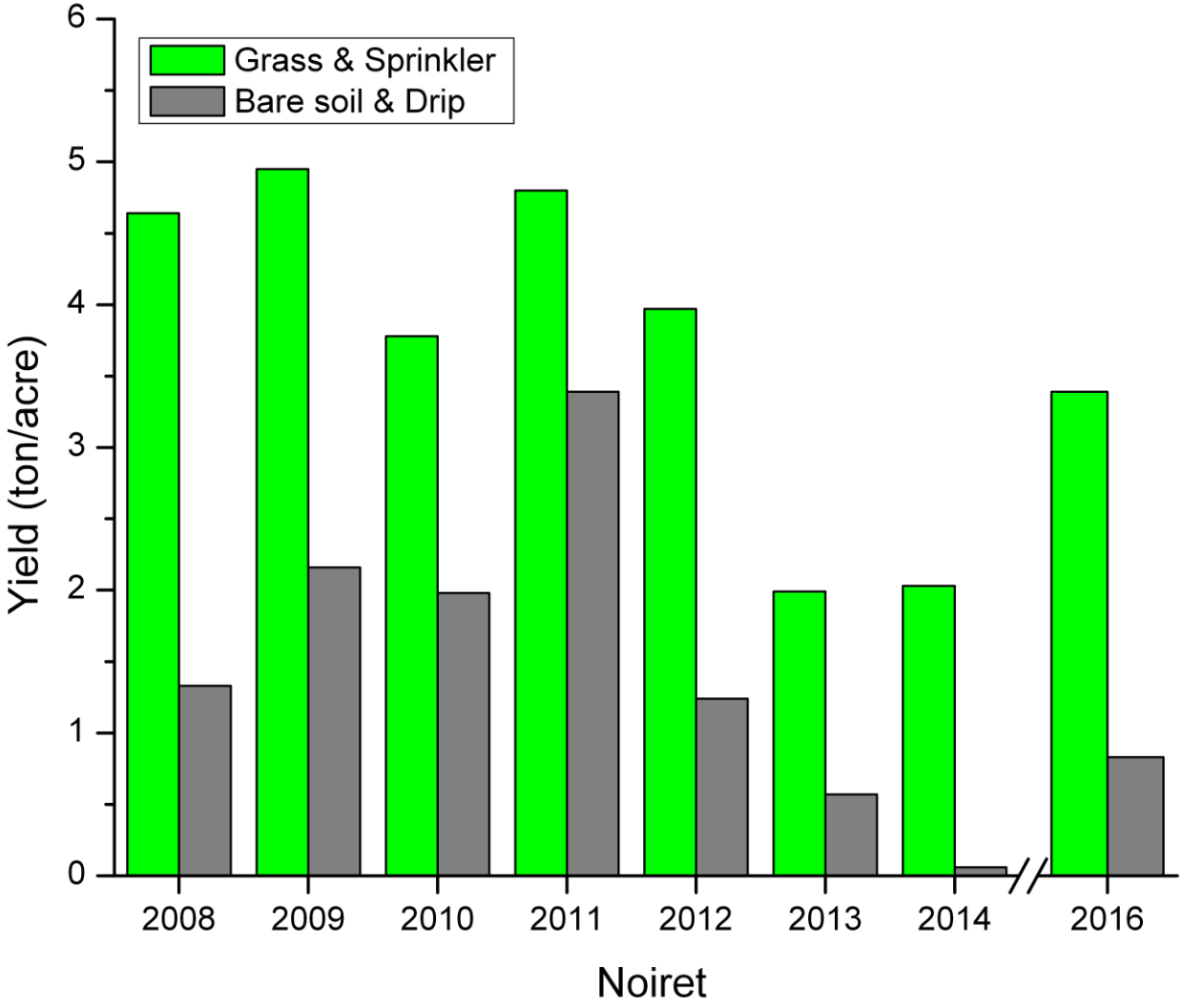
Noiret, 2008 - 2016



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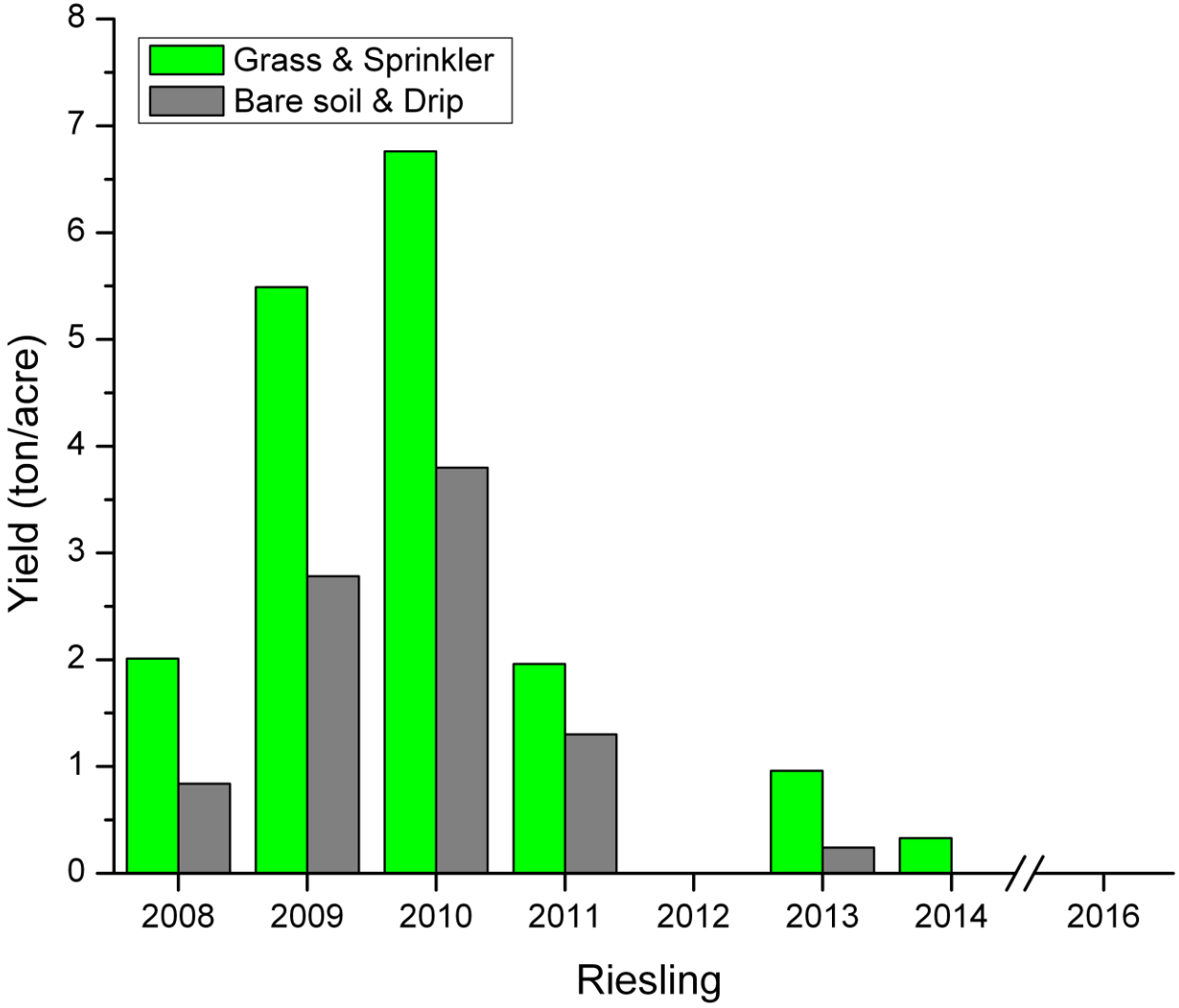
Riesling, 2008 - 2016



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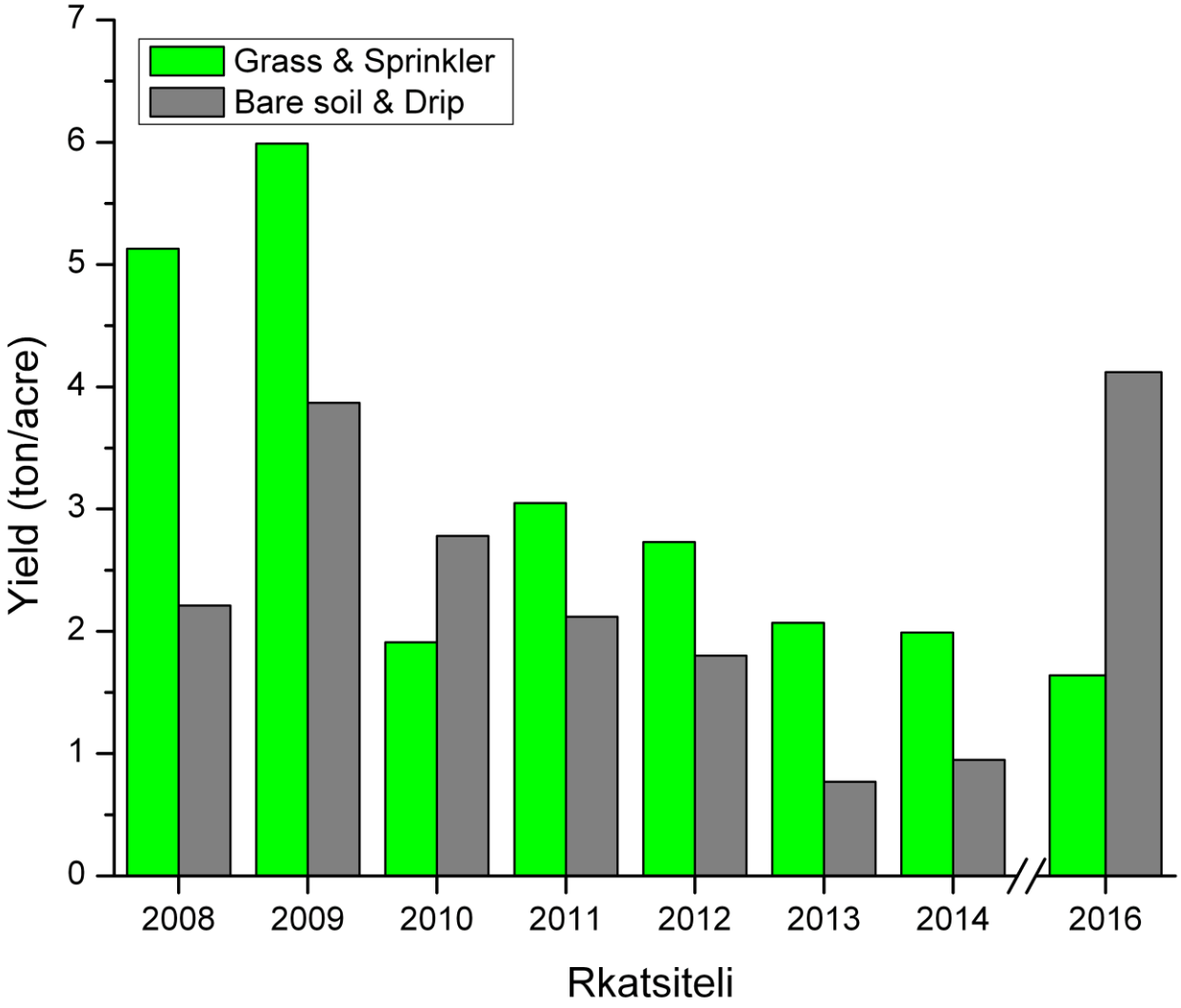
Rkasiteli, 2008 - 2016



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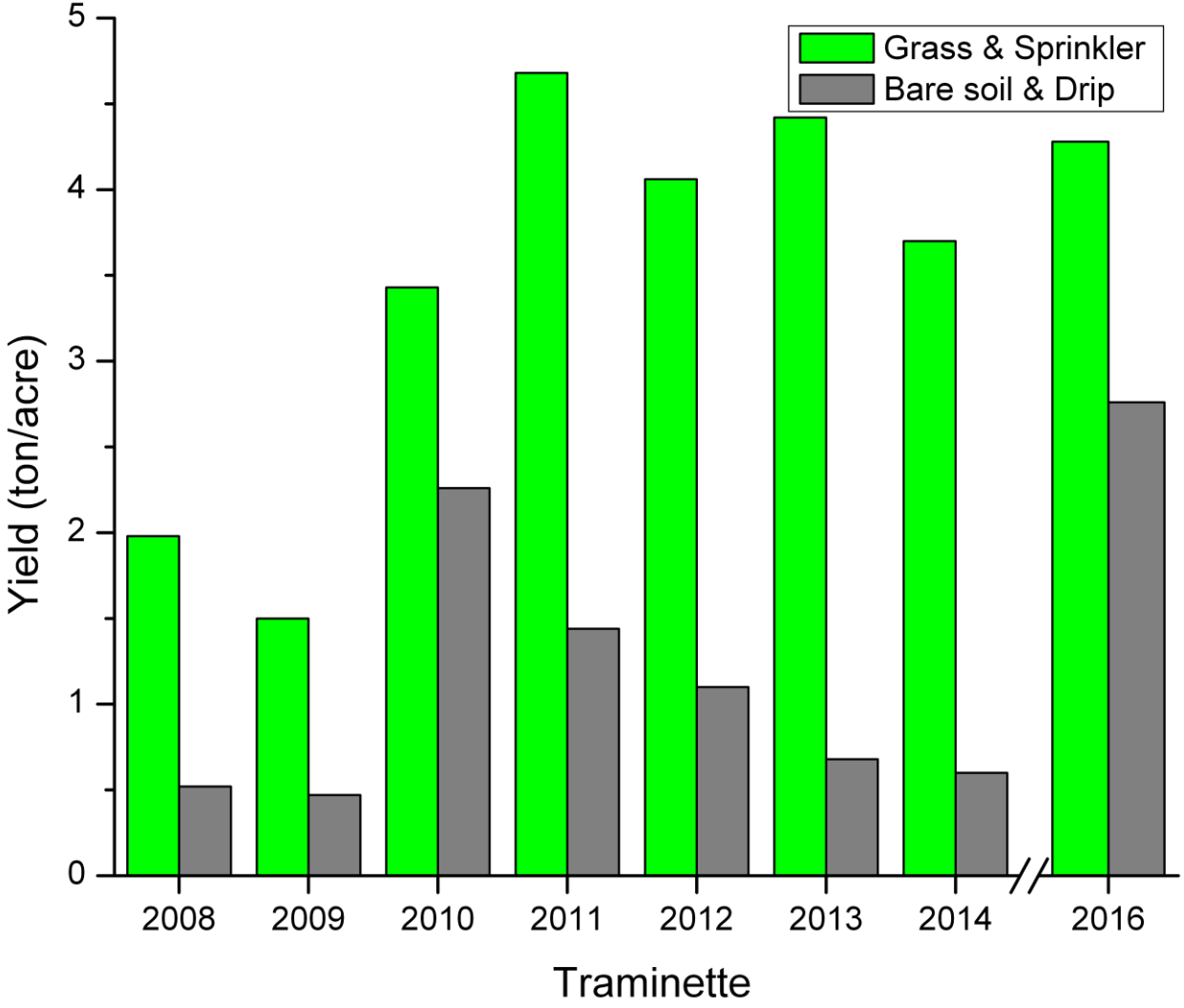
Traminette, 2008 - 2016



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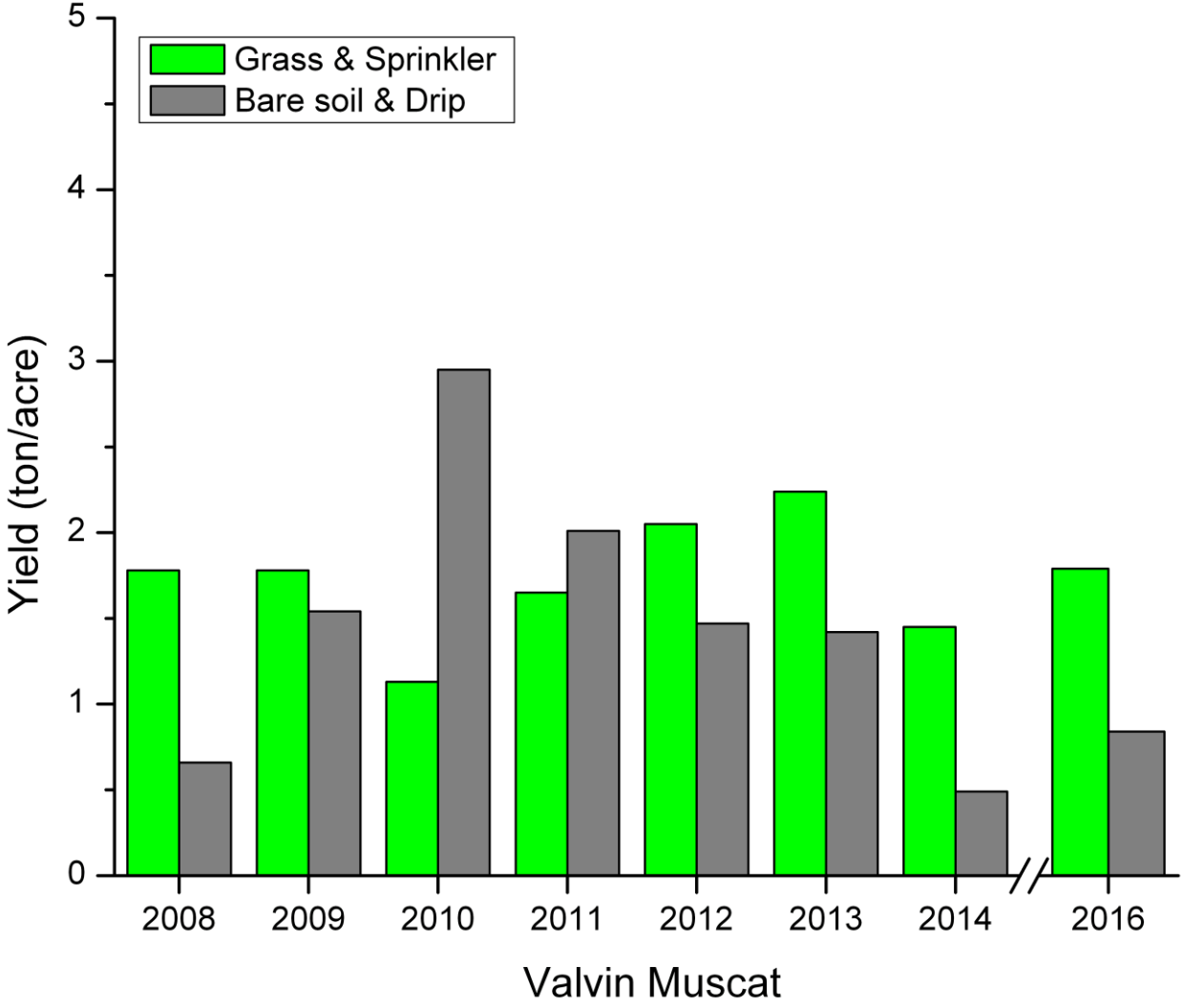
Valvin Muscat, 2008 - 2016



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Bud cold hardiness, Chambourcin and Rkatsiteli

No or minimal primary bud damage was found in 4 out of 9 years (2007/08, 2008/09, 2011/12, 2014/15)

Between 10 to 35 % bud damage was observed in 3 years (2010/11, 2012/13, 2013/14).

In two years primary bud damage reached 50 % (2006/07, 2009/10).

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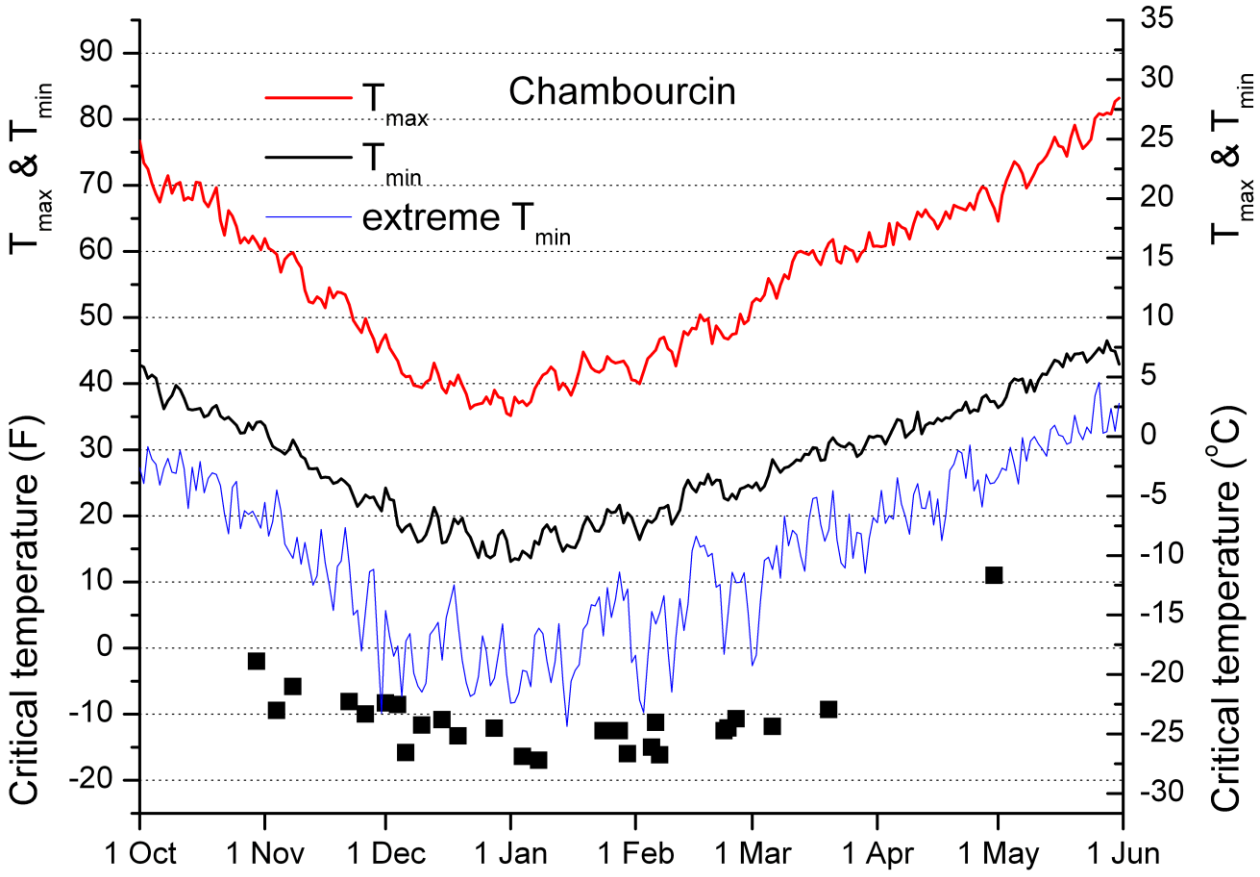
Bud cold hardiness, Chambourcin



Long-term (1997-2018) average maximum, average minimum, and extreme minimum temperatures at the Rogers Mesa site as well as multi-year data of critical temperatures for a 50 % primary bud kill for Chambourcin

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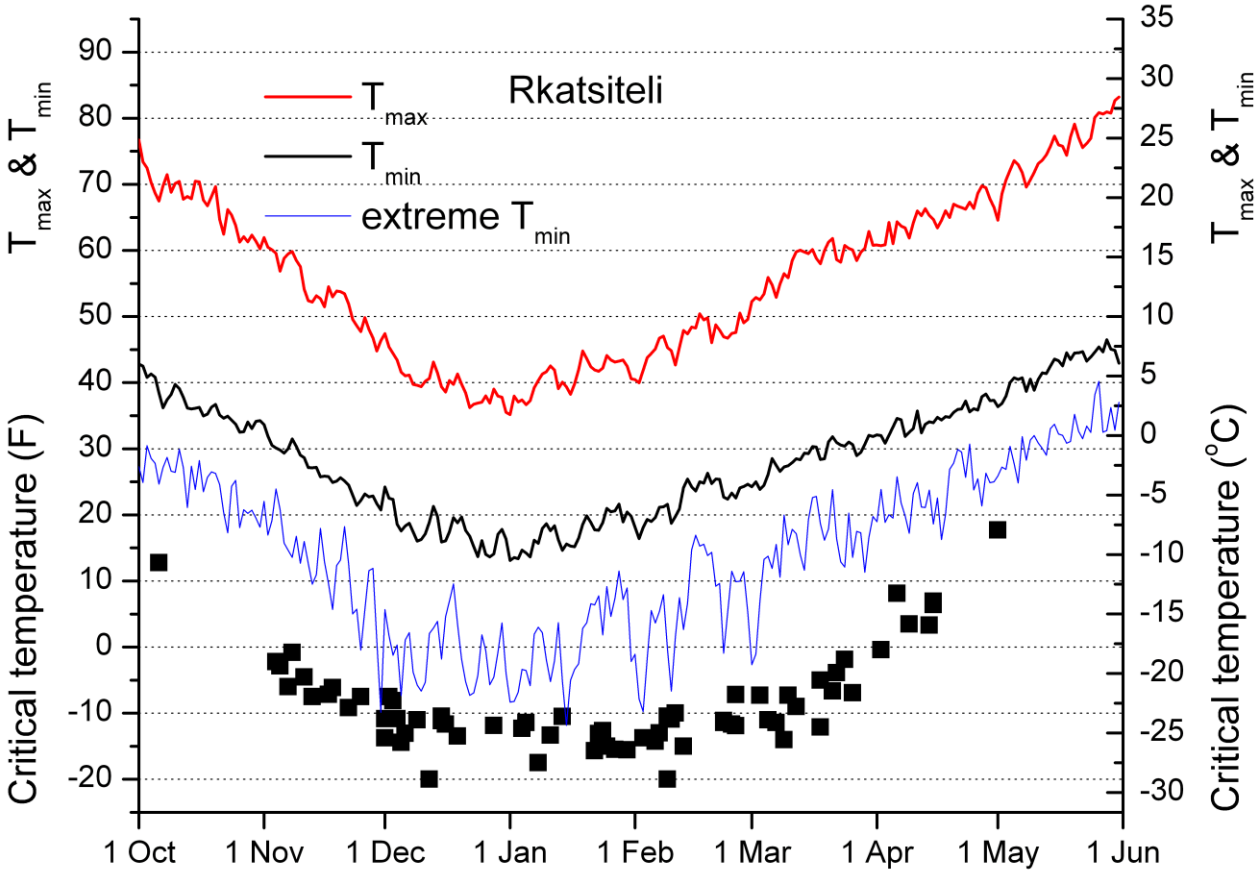
Bud cold hardiness, Rkatsiteli



Long-term (1997-2018) average maximum, average minimum, and extreme minimum temperatures at the Rogers Mesa site as well as multi-year data of critical temperatures for a 50 % primary bud kill for Rkatsiteli

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Summary

After 10 years the highest average yield was by Chambourcin and Rkatsiteli (2.7 to 2.9 ton/acre), followed by Corot noir, Regent, and Noiret (~2.5 ton/acre), Traminette (2 ton/acre), then Dornfelder and Riesling (~1.4 ton/acre).

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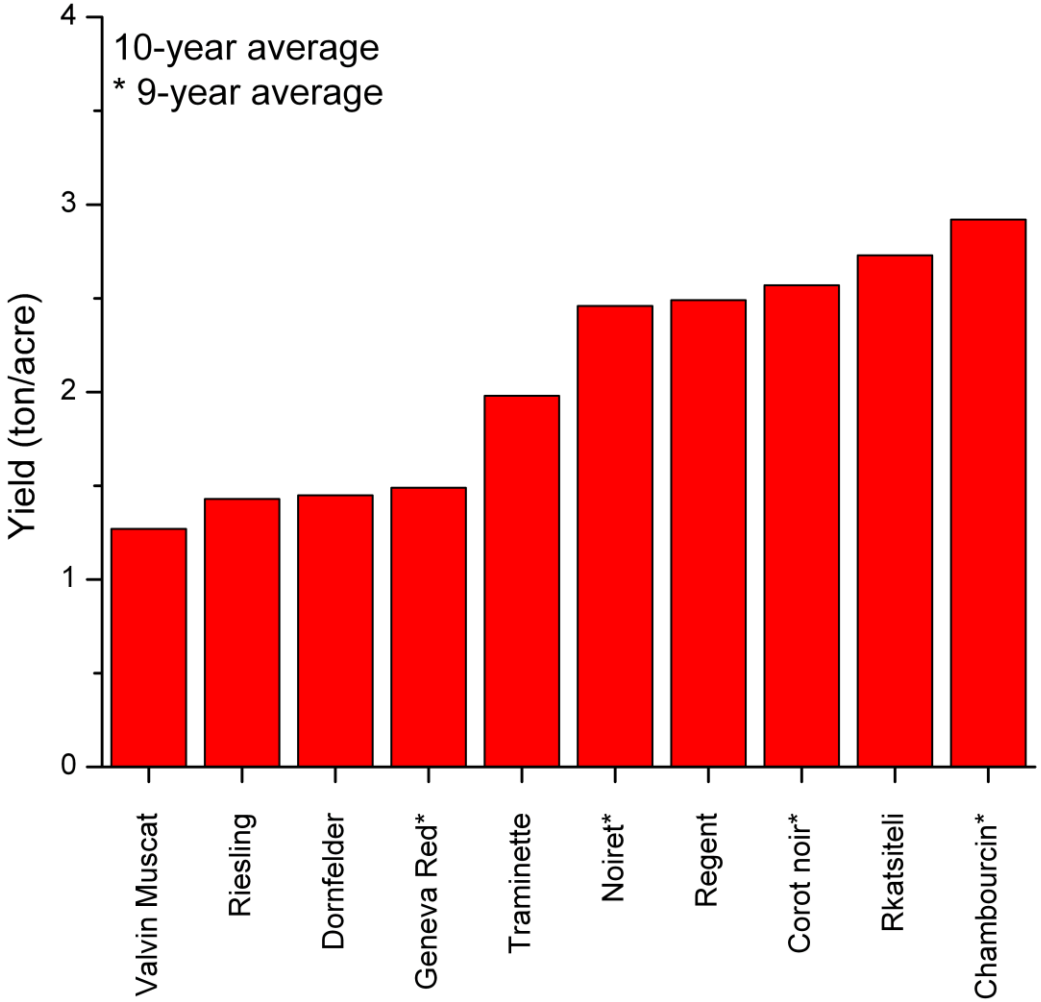
Average yield, 2006 - 2016



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Summary

Averaged across all years and all varieties:

The sprinkler irrigation / grass cover crop treatment has produced 2.3 times the yield compared to the drip / bare soil treatment.

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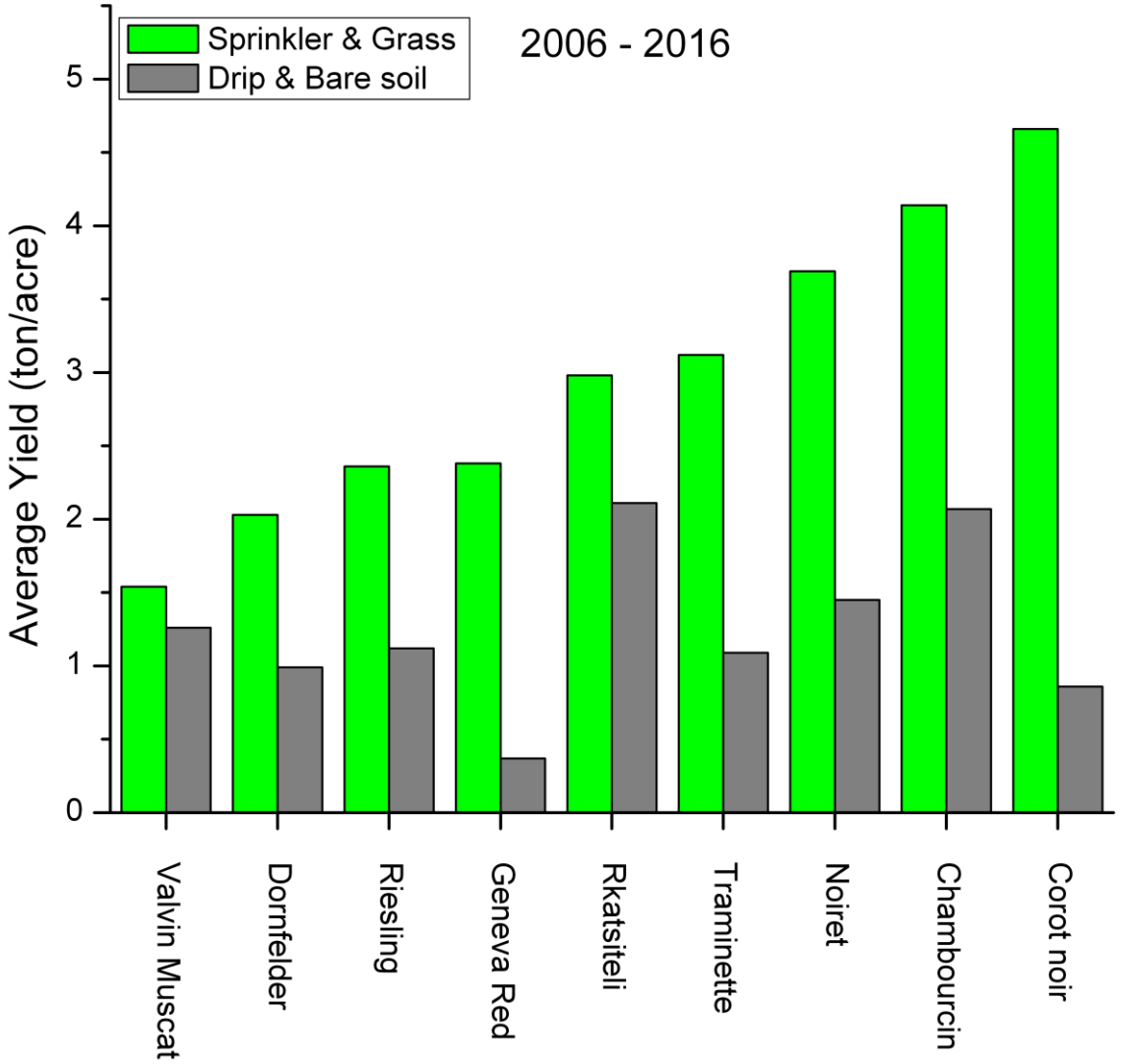
Soil & irrigation management effect on average yield, 2006 - 2016



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Summary

Averaged across all years and all varieties:

Titratable acidity was always higher with sprinkler / cover crop (every variety, every year) – difference ~2 g l^{-1}.

Juice pH (~ -0.1) and soluble solids (~ -1.0) were generally lower with sprinkler / cover crop.

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Summary

Initial yields of Traminette were disappointing. However, over the last seven years Traminette has averaged 2.8 ton/acre.

With sprinkler irrigation and a grass cover crop, the average yield of Traminette over the last seven years was 4.1 ton/acre.

Grape variety trial (2004) at Rogers Mesa

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Questions?

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