Journey of Extraction Session 1 – Maceration Strategies

OREGON WINE SYMPOSIUM

February 3 & 4, 2025

Bill Snyder – Winemaker, Decision Hill Wines, Snyder Wine Services
Rachel Rose - Winemaker & Vineyard Director, Bryn Mawr Vineyards
Matt Vuylsteke, GM & Winemaker, Amaterra Wines
Steve Price, ETS Laboratories

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SYMPOSIUM

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Session 1 – Maceration Strategies

Bryn Mawr Vineyards – Cold Soak Phenolic Trial

Rachel Rose - Winemaker & Vineyard Director

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BRYN MAWR VINEYARDS

Bryn Mawr Vineyards – Cold Soak Phenolic Trial

Cold Soak Pros vs. Cons

- Color vs. Color
- Microbiology vs. Microbiology
- Fruit Expression vs. Non-desired aromas and flavors (i.e. fungal, stemmy, insect/MALB & MSB)
- Positive textural contributions vs. Negative

What the experiment was about?

- How timing and temperature of cold soaks impacts the phenolic profile of Pinot Noir with a high proportion of whole clusters.

What we hoped to discover:

- Curious to see the phenolic profile of this specific wine – 3 years in the making
  - Multi clonal fermentation of 777, POM, and WAD all in equal proportion all from the western ridge of our Estate Vineyard
  - Thie wine always has a high % of whole cluster
- To understand the phenolic profile during the cold soak phase under different Time & Temp parameters
  - I've long since wondered whether the stems provide a sacrificial tannin effect. I have often found WC wines to be counterintuitively "rounder" with greater plushness in the midpalate - a textural feeling and placement I associate with skin tannin.
- To understand the phenolic profile of the entire fermentation process on a granular level
  - To help guide temperature and cap management decisions for fermentations that contain a high % of whole clusters.

Bryn Mawr Vineyards – Cold Soak Phenolic Trial

Glass 1- Control

5-day cold soak at 40-45 F

Glass 2- Extended Cold Soak

9-day cold soak at 40-45 F

- From the Bryn Mawr Vineyards Estate in the Eola-Amity Hills
- Multi-clonal fermentations of 777, POM, and WAD
- 50% Whole cluster
- 25ppm of SO2
- + 10 g/hL custom mix of non-Sacc "Bio Protection"
- No sequential inoculation
- 2-Ton stainless steel jacketed tank
- Temp. was controlled by connecting to a hot/cold glycol unit
- +Heated ~ 20 hours (2 days) until there were signs of fermentation
- No additional heat or cooling was applied thereafter
- BMV Cap Management SOP
    - Cold Soak: Pump/Over - 1 x volumetric turnover +Dry Ice
    - Peak: Punch/Downs - 2 x day
    - Remaining 1/3: Pump/Over - ½ x volumetric turnover
- 23 days on skins
- Pressed off at -2.0 Brix, finished in tank, <1.0 g/L R.S went to barrel

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Bryn Mawr Vineyards – Cold Soak Phenolic Trial

		CONTROL			EXTENDED COLD SOAK			
Date	**Day #**	**Brix**	**Cap (°F)**	**Juice (°F)**	**Brix**	**Cap (°F)**	**Juice (°F)**	**Cap Management**
1/8/2024	**0**	PROCESSED	x	x	PROCESSED	x	x	x
1/9/2024	**1**	NO ACTION	x	x	NO ACTION	x	x	x
10/10/2024	**2**	25.1	56	44	24.8	58	42	PO - total tank volume
10/11/2024	**3**	23.8	55	x	23.9	47	x	PO - total tank volume
10/12/2024	**4**	24.2	47	43	24	54	40	PO - total tank volume
10/13/2024	**5**	24.1	48	44	24.1	52	41	PO - total tank volume
10/14/2024	**6**	24	57	56	24.2	45	40	PO - total tank volume
10/15/2024	**7**	23.4	55	55	24	52	40	PO - total tank volume
10/16/2024	**8**	22.9	56	59	24.1	52	48	PO - total tank volume
10/17/2024	**9**	21.9	66	59	24	46	45	PO - total tank volume
10/18/2024	**10**	20.5	68	61	23.9	48	54	PO - total tank volume
10/19/2024	**11**	16.7	65	65	23.7	52	57	PD x 2 (AM & PM)
10/20/2024	**12**	10.4	72	71	23.3	54	58	PD x 2 (AM & PM)
10/21/2024	**13**	7.7	80	72	22.5	64	60	PD x 1 (AM)
10/22/2024	**14**	2.7	80	71	18.3	68	69	PO - total tank volume
10/23/2024	**15**	-0.1	79	72	9.9	84	74	PO - half tank volume & PD
10/24/2024	**16**	-1.4	84	75	4.9	84	80	PO - half tank volume
10/25/2024	**17**	-1.9	82	69	0.8	84	75	PO - half tank volume
10/26/2024	**18**	-2.1	79	69	-0.9	81	74	PO - half tank volume
10/27/2024	**19**	-2.2	76	66	-1.5	73	71	PO - half tank volume
10/28/2024	**20**	-2.2	68	67	-1.7	73	71	PO - half tank volume
10/29/2024	**21**	-2.3	x	64	-2	76	70	PO - half tank volume
10/30/2024	**22**	-2.2	x	63	-2	68	64	PO - half tank volume
10/31/2024	**23**	**DRAIN & PRESS**						

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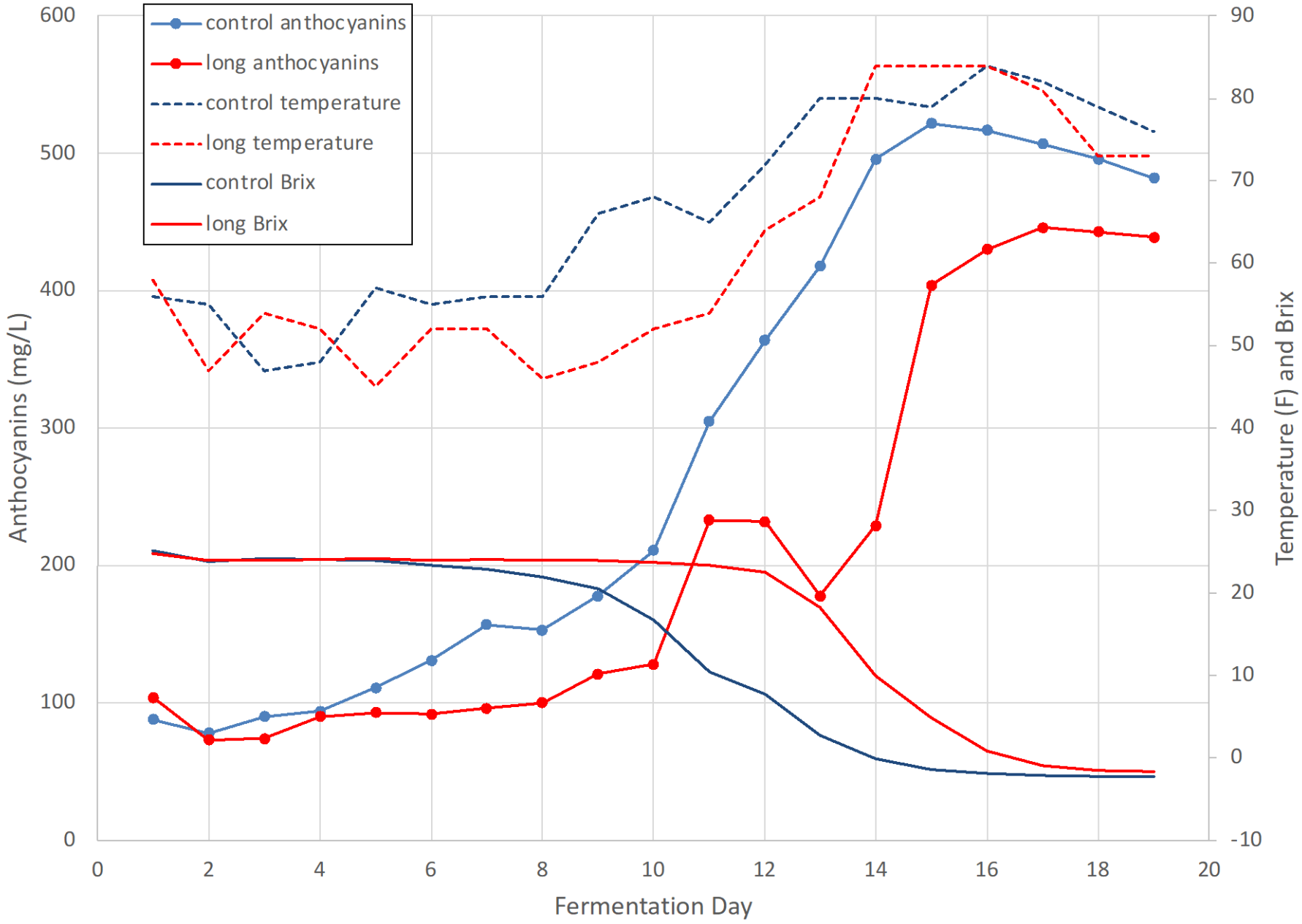
Cold Soak Trial – Anthocyanins



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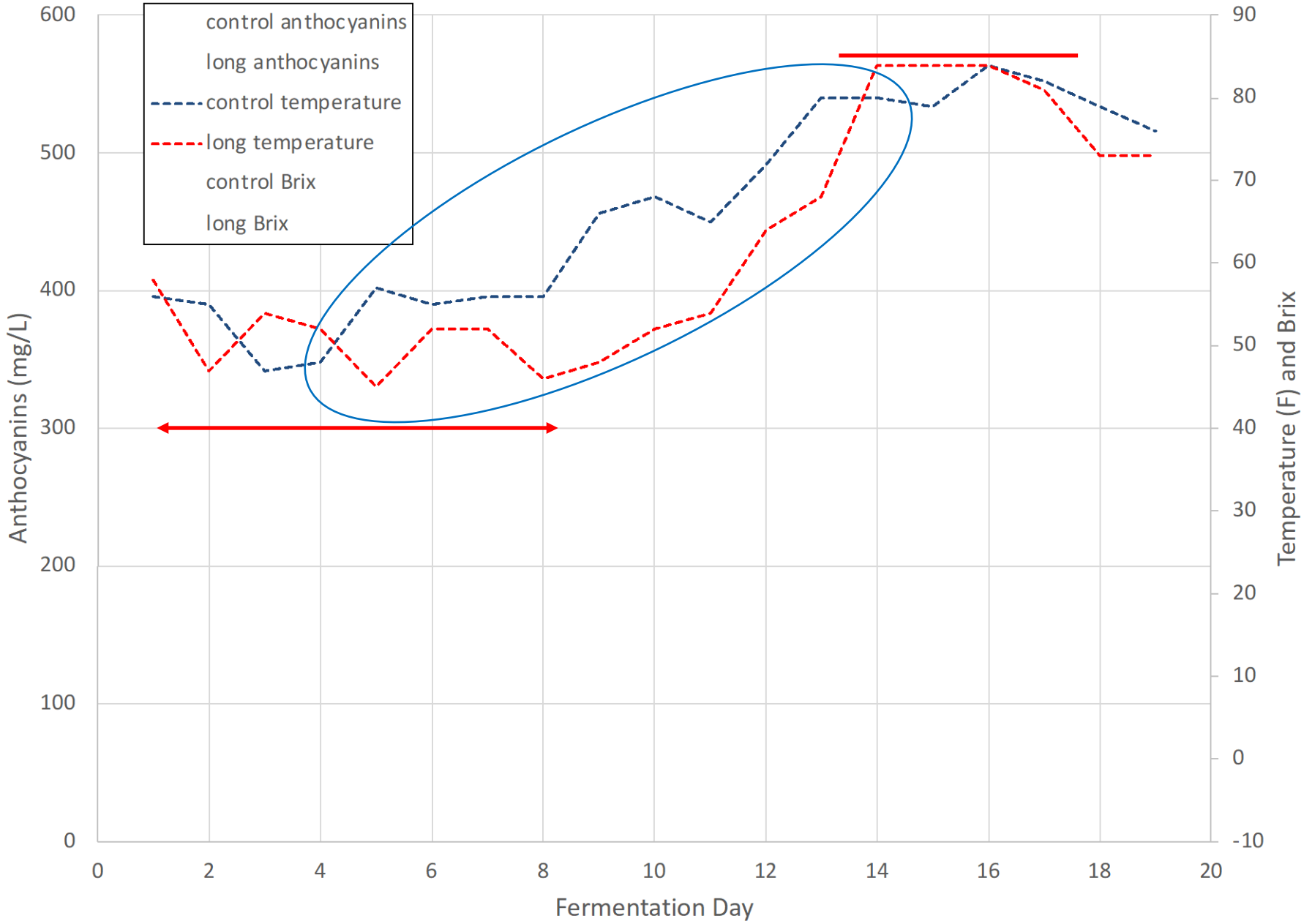
Cold Soak Trial – Cap Temperature



Temperature

- extended cold soak
- same maximum
- control warmer for nine days

avg temperature

control = 66º

long = 61º

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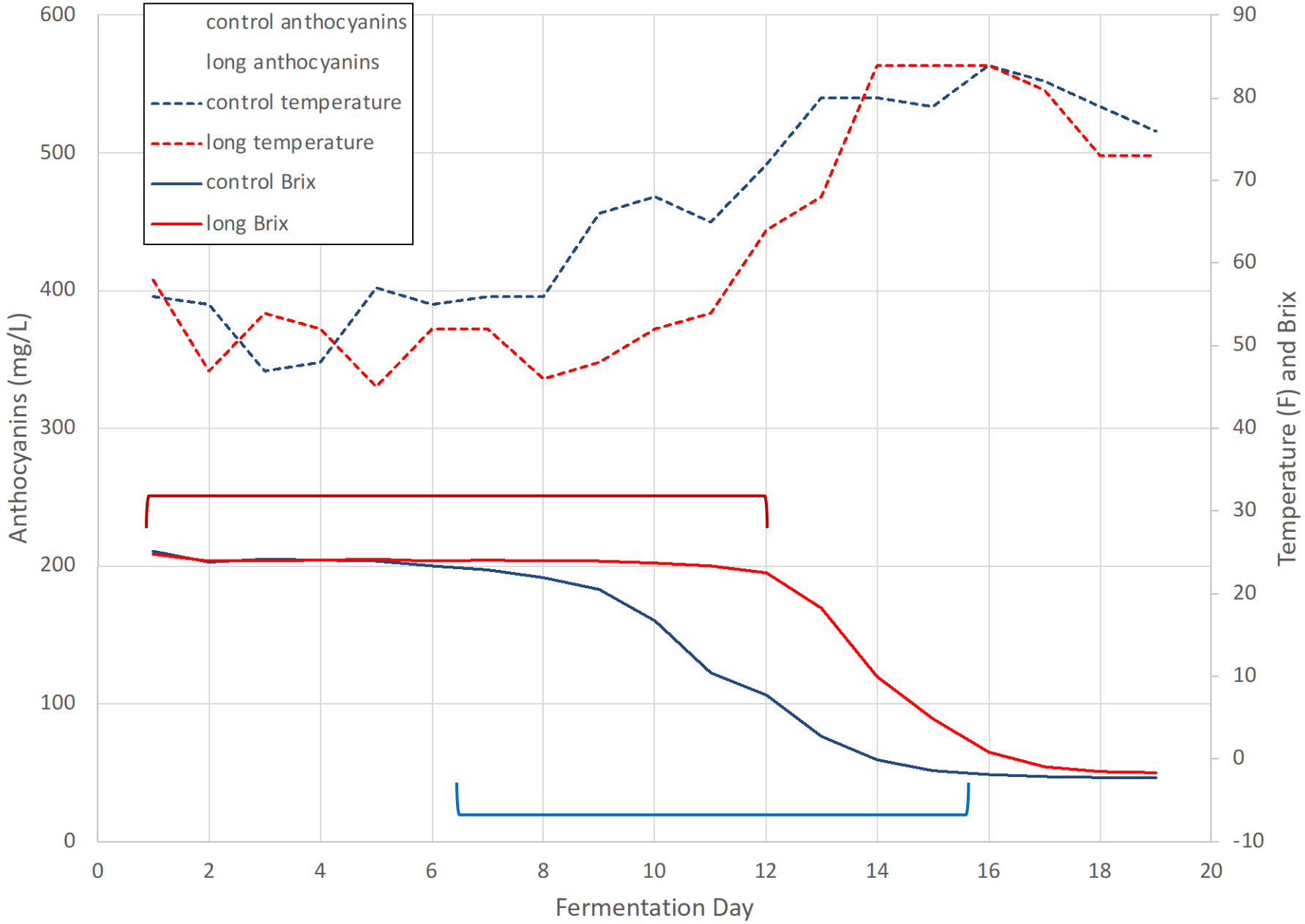
Cold Soak Trial – Fermentation



Brix

- 12-day delay
- active fermentation

control = 10 days

long = 5 days

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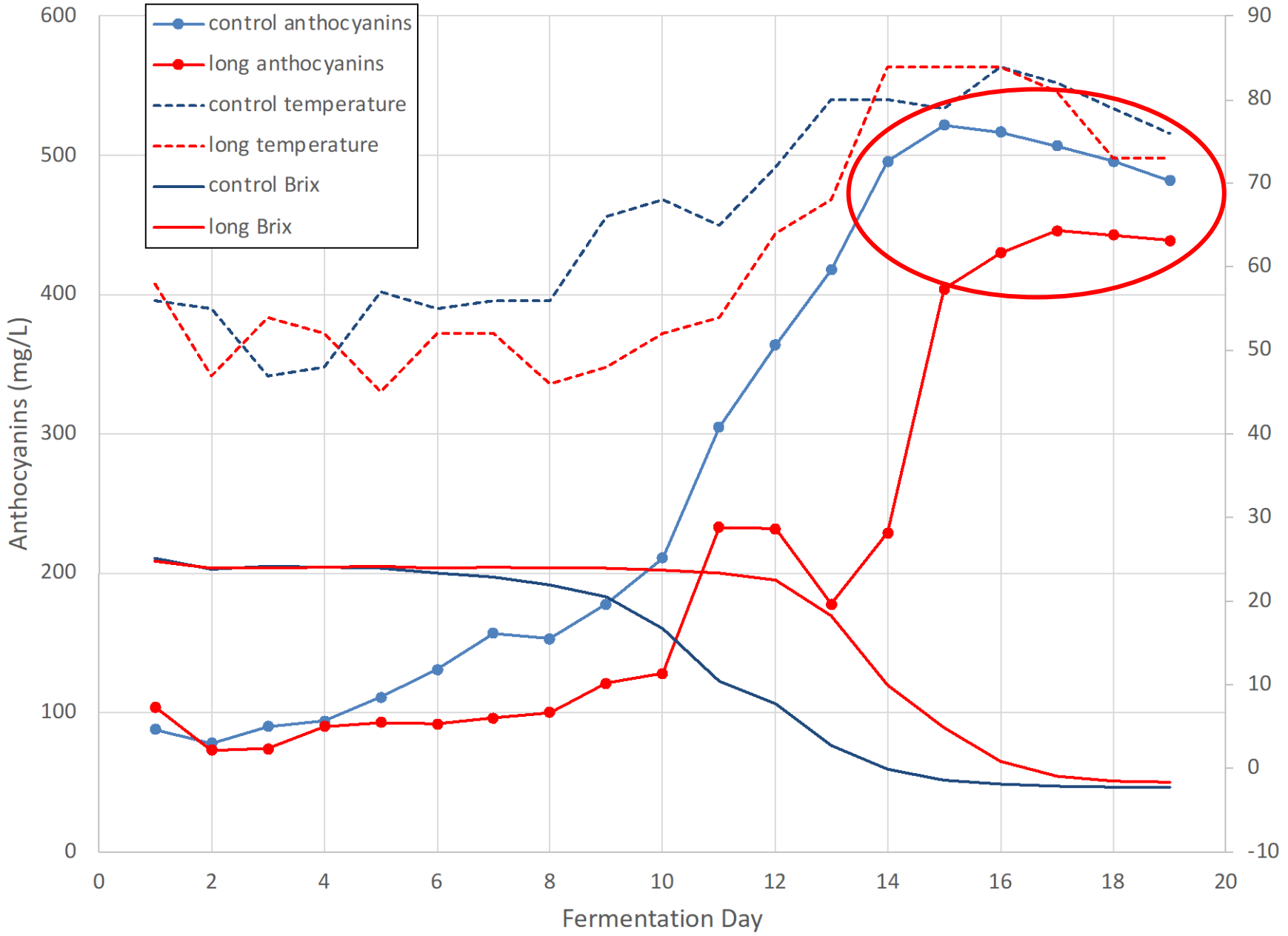
Cold Soak Trial – Anthocyanins



Anthocyanins

control

- higher temperatures
- longer exposure to alcohol during maceration
- more anthocyanin extraction
- degradation at higher temperatures!

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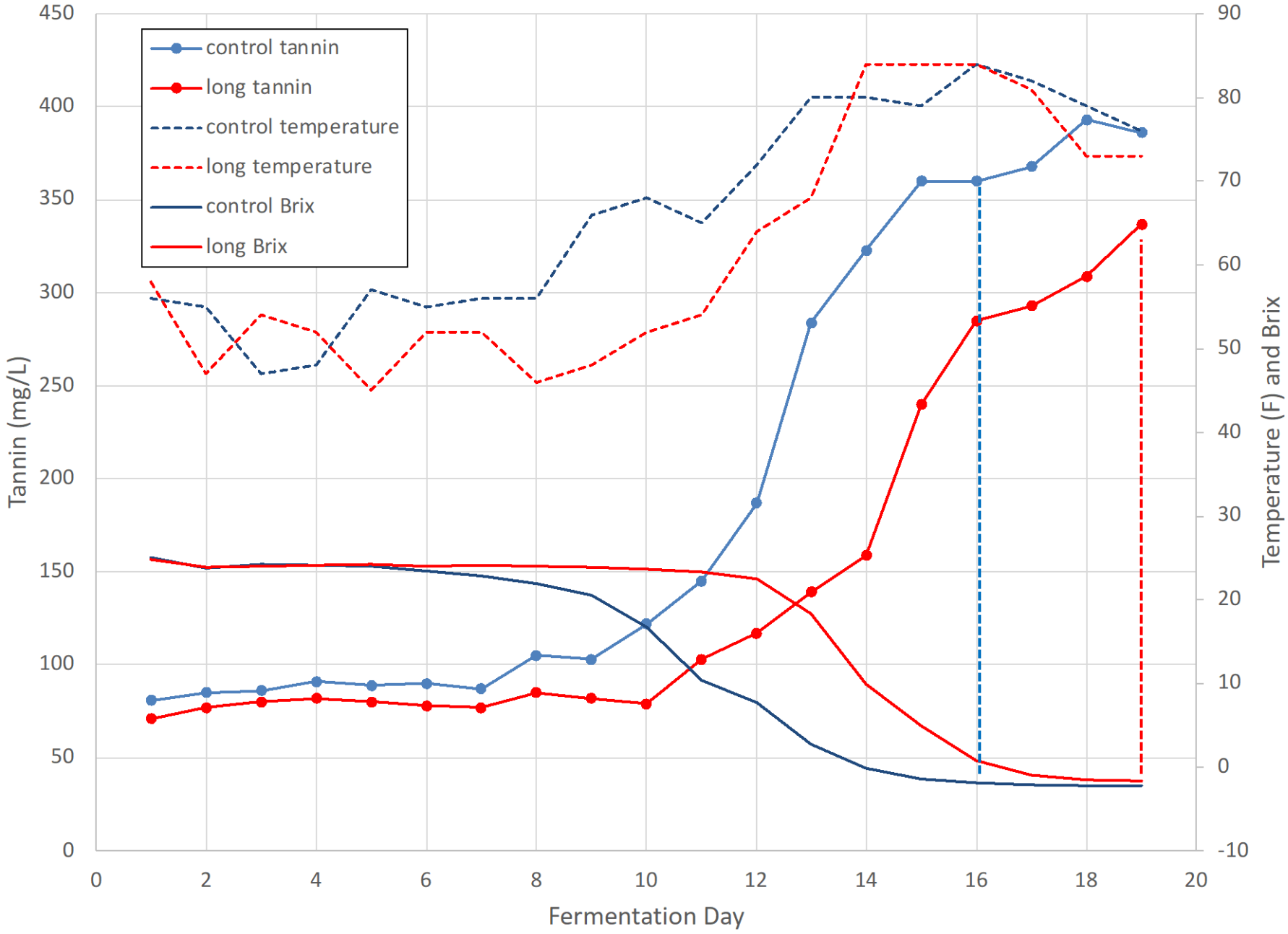
Cold Soak Trial – Tannin



Tannin

high temperatures

increase tannin

control had a post fermentation maceration

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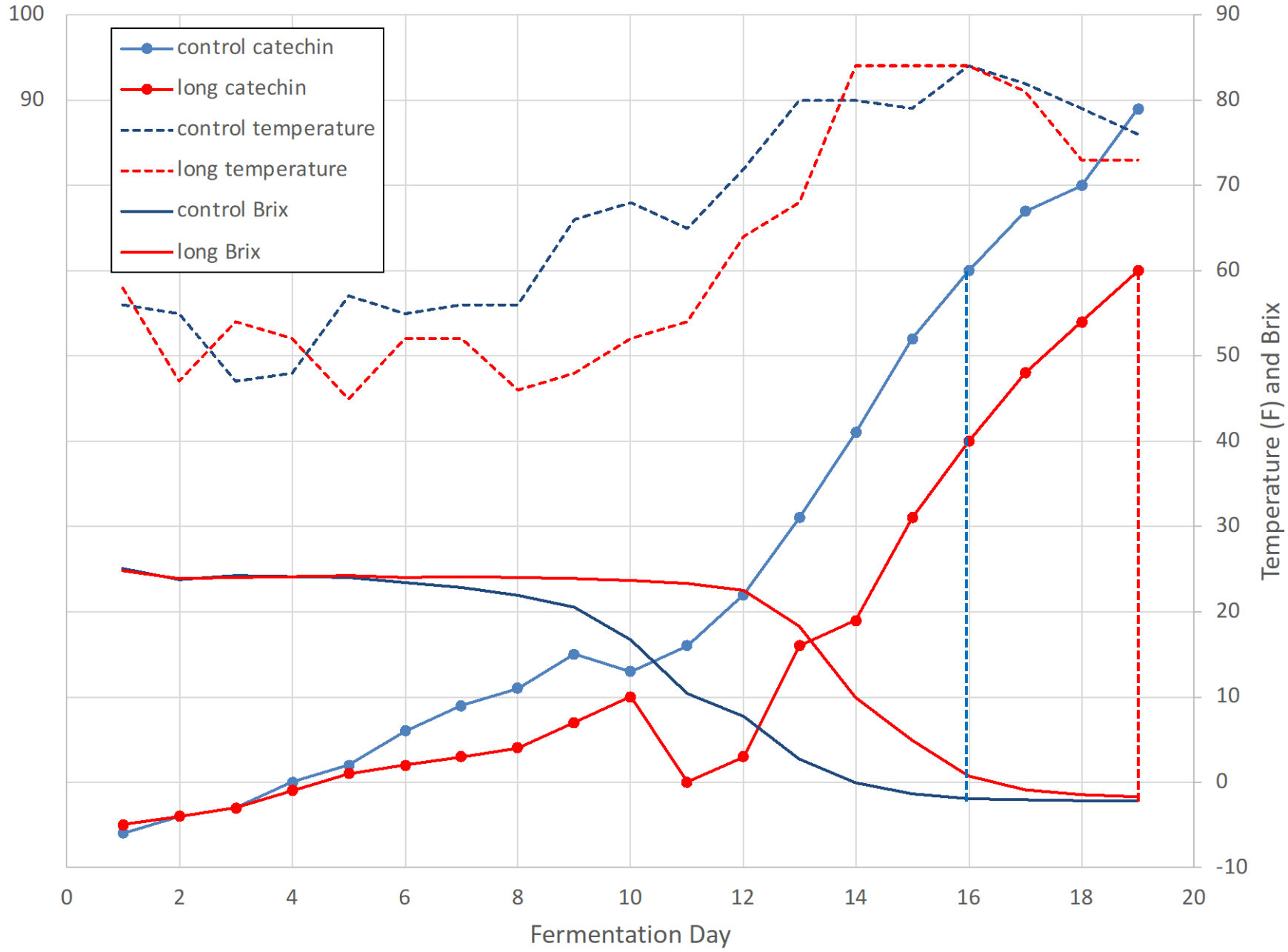
Cold Soak Trial – Catechin



Catechin

extended maceration

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AMATERRA

Amaterra Wines and 51Weeks Winemaking

AMATERRA

- Founded in 2017
- First vintage in winery was 2021
- Focus is Willamette Valley, Pinot Noir and Chardonnay
- Estate vineyard site is Swede Hill Vineyard

FIFTY-ONE WEEKS
WINEMAKING

- Founded in 2012
- Focus on non-traditional single varietal bottlings (Petit Verdot)
- Additional focus on experimentation and pushing beyond traditional approaches
- Primarily Walla Walla (Oregon), Yakima Valley, Horse Heavens

Why ‘Static’ Fermentation?

- Started *submerged cap fermentations* in 2016
  - 1-2 wines per vintage
  - Varietals: Barbera, Pinot Noir, Petit Verdot, Merlot, Cabernet Sauvignon, Syrah
- *Submerged cap fermentation* observations:
  - Cooler fermentation temperatures, aromatic impact
  - Longer fermentation timeline, more days on skins
  - Wines generally have a more purple hue
  - Beneficial overall textural impact, concentrated and refined structure
- Would static fermentation have similar characteristics?
  - Similar in terms of no movement, no shear from punch downs or other cap management
- Our definition of ‘Static’ fermentation

Static Fermentation Considerations

- Static fermentation risks
  - Overheat of cap, stuck fermentation
  - Reduction, not enough oxygen
  - Volatile acidity production – especially during start and finish of fermentation
- Controls for risk factors
  - Tank size, proportions (1:1), tank design that can be sealed
  - Low yeast rates, encourage slow kinetics
  - Siphon CO_2 and don't open the tank too frequently!
  - SO_2 addition on top, via watercan

Static Fermentation Trials

- Trial on Pinot Noir static fermentation conducted in 2023
  - Not ideal vintage with dehydration, necessary adjustments (a couple pump overs were required)
  - Wine had excellent phenolic structure, concentrated but well rounded (low perception of astringency)
  - Excellent fruit aroma characteristics – similar to submerged cap
  - Surprised at the level of extraction in general, was more comparable to one of our more aggressive approaches vs a more gentle protocol
- Trials for 2024
  - Compare static with other treatment approaches on Pinot Noir (we did 2 trials)
  - Add additional varietals
  - Look at free run composition vs press fraction and homogenized wine

Static Fermentation Trials

Trial #1 (wines 3 and 4): Static Pinot Noir maceration comparison

1) Control – aggressive destemmed approach
   - SO_2 (+50 ppm), dry ice, enzyme (HE Grand Cru at 3g/100kg)
2) Carbonic – 100% whole cluster
   - SO_2 (+50 ppm), inoculated/pigeage at day 7
3) Partial whole cluster – 43% whole cluster inclusion
   - SO_2 (+50 ppm), dry ice
4) Static fermentation – all destemmed
   - SO_2 (+50 ppm), dry ice

Vineyard and harvest details:

- Hirschy Vineyard, Yamhill-Carlton AVA
- Block K – planted 2013, Pommard/3309
- Harvest date: 9/25/2024
- Harvest labs: 24.4 Brix, pH 3.5, TA 4.43 g/L

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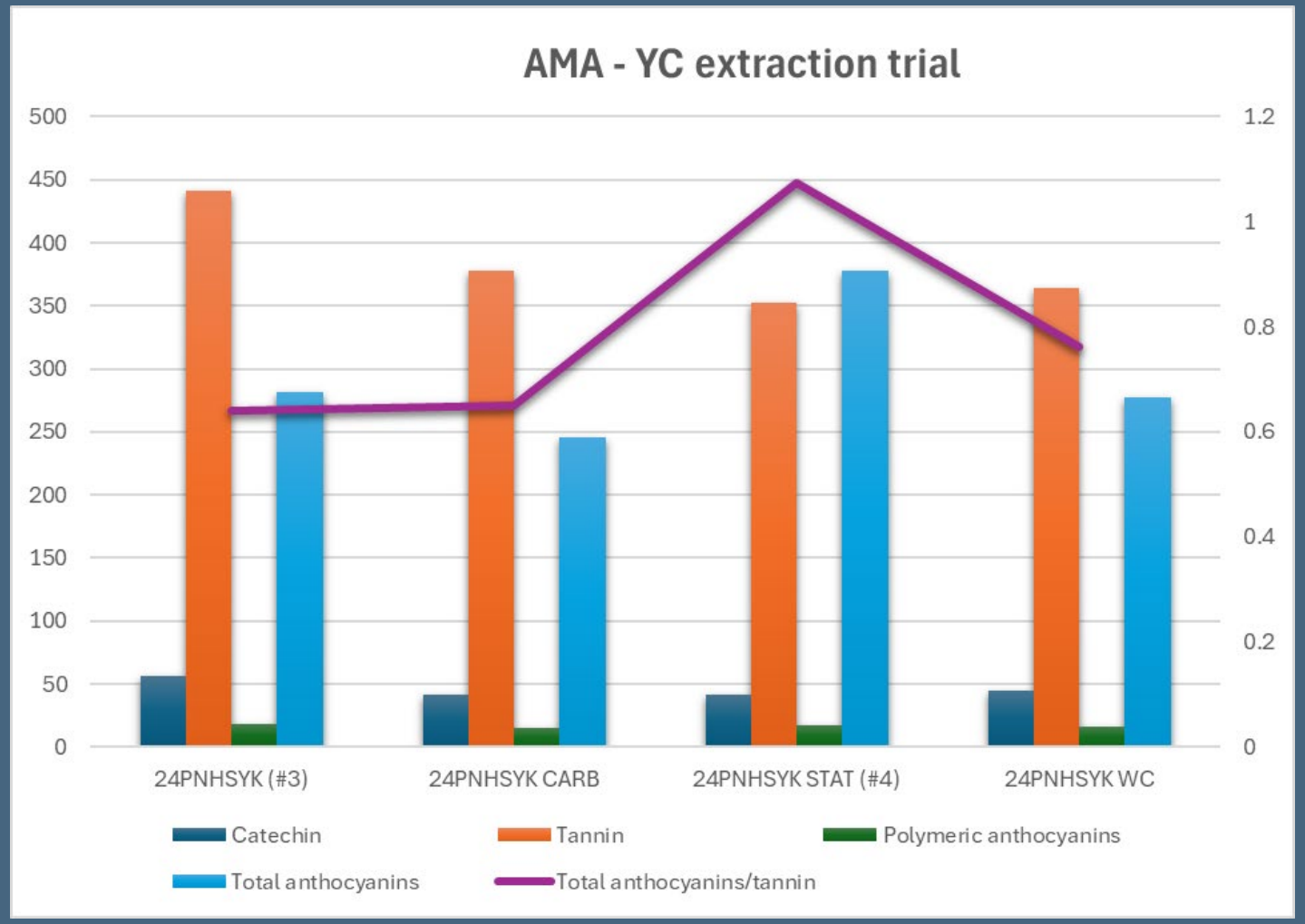

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Static Fermentation Trials

Trial #2 (wines 5): Static Cabernet Sauvignon fractions

1) Free run
2) Press fractions
3) Free run and press fractions combined

Treatments: +60 ppm SO_2, Tartaric, Water

Vineyard and harvest details:

- Coyote Canyon Vineyard (Andrews), Horse Heaven Hills AVA
- Block CS07G, planted 2007
- Cabernet Sauvignon clone 8, own rooted
- Harvest date: 10/22/2024
- Harvest labs: 26 Brix, pH 3.93, TA 3.72 g/L, YAN 57ppm

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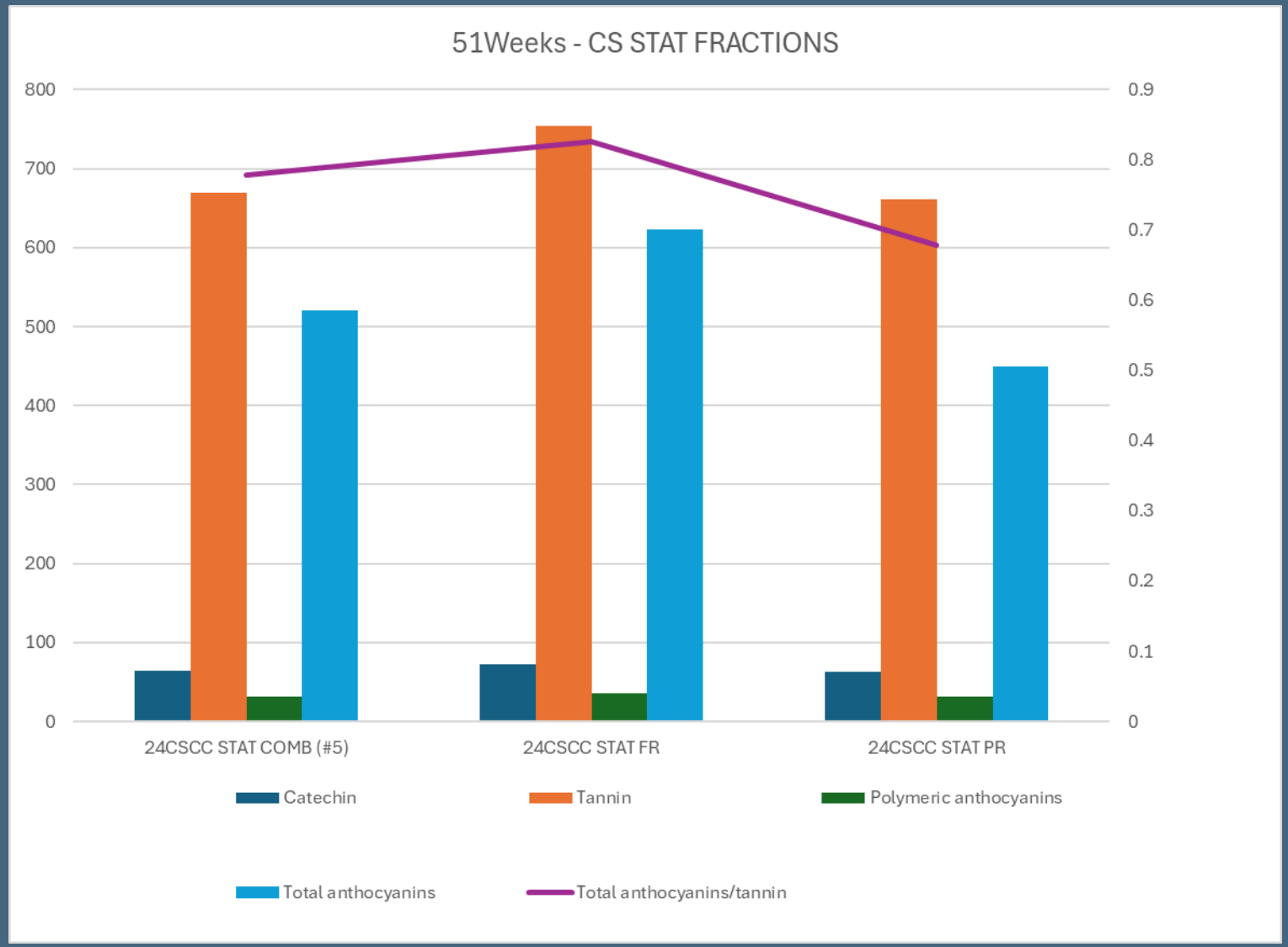

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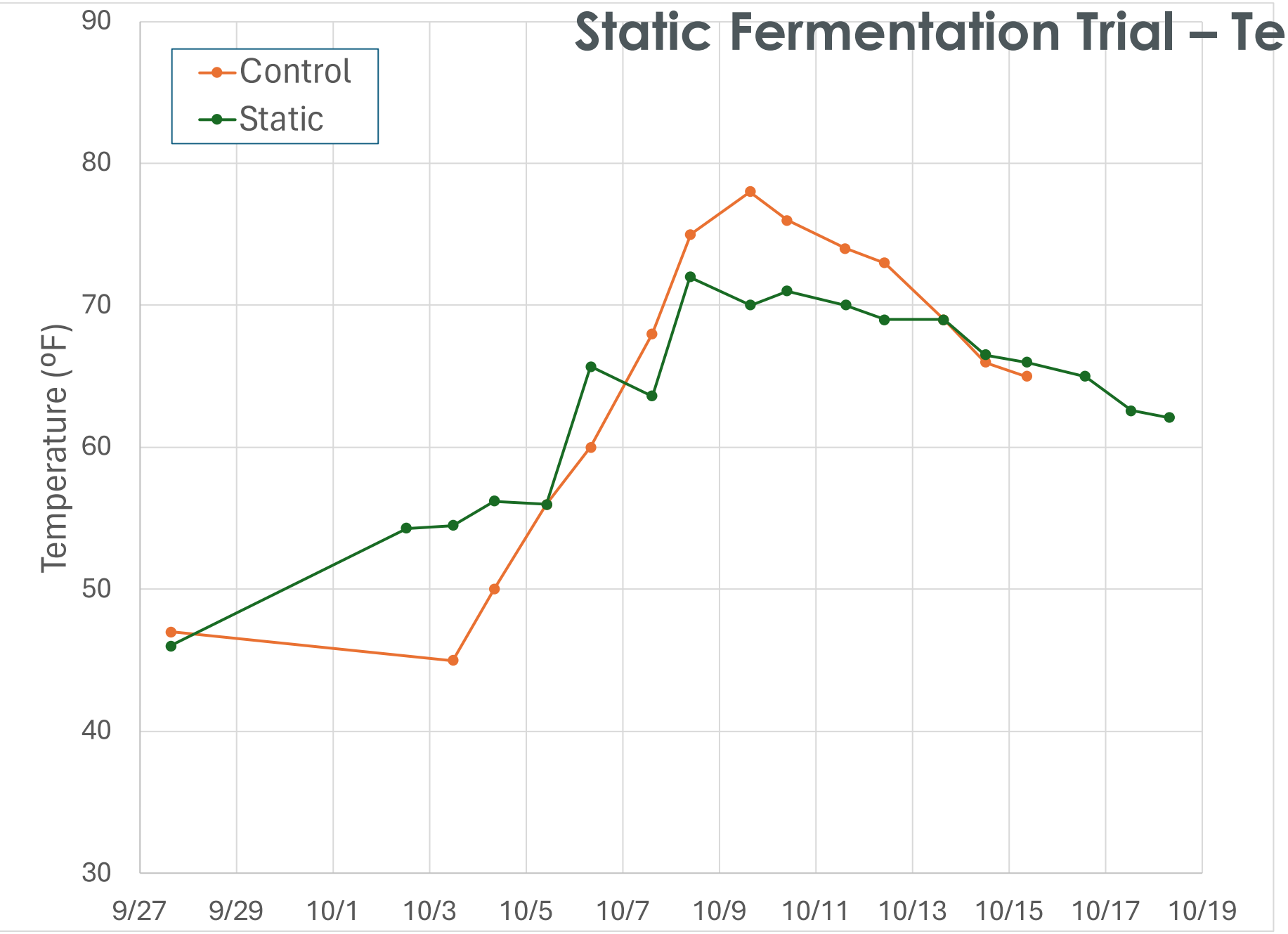
Static Fermentation Trial – Temperature



Static Fermentation

warmer start

cooler middle

extended ferment

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Static Fermentation – Pinot Noir
Phenolic Results

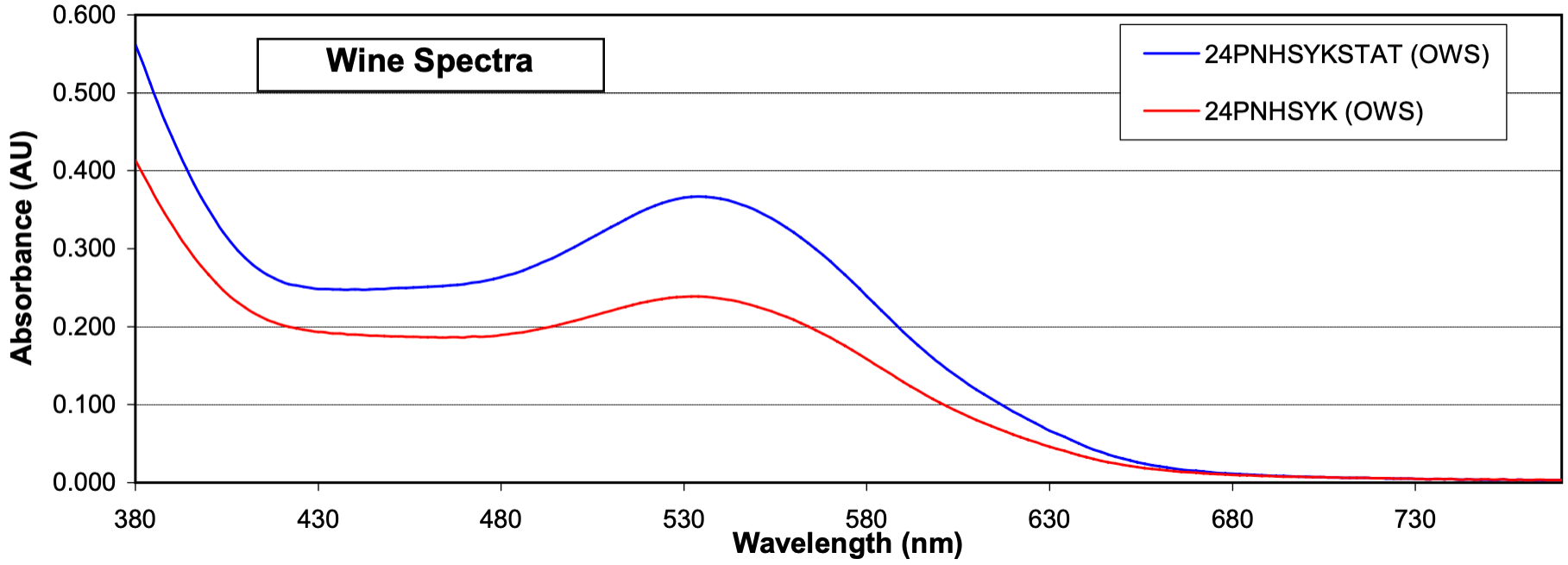
	catechin	tannin	polymeric anthocyanins	total anthocyanins	max temp	avg temp
Control	56	441	18	282	78	64.4
Static	42	352	17	378	72	63.8

Static Fermentation – Pinot Noir
Phenolic Results

	catechin	tannin	polymeric anthocyanins	total anthocyanins	max temp	avg temp
Control	56	441	18	282	78	64.4
Static	42	352	17	378	72	63.8

Static Fermentation – Pinot Noir CIEL*a*b*

	520nm	L "lightness"	a* "red"	b* "yellow"	hue angle
Control	0.232	85.2	13.5	2.0	8.3
Static	0.351	78.9	20.7	0.7	-2.0



Static Fermentation
Phenolic Results

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Control	56	441	18	282	78	64.4
Static	42	352	17	378	72	63.8
		Cabernet Sauvignon				
Static	65	659	32	521		

polymeric anthocyanin : tannin index = 0.049

Thank you!

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Please dump your glasses, and get up from your seat to facilitate our event staff clearing