

The background of the slide is a vibrant blue watercolor wash. The colors range from a deep, dark blue in the center to a bright, almost white light blue at the edges. The texture is organic and painterly, with visible brushstrokes and splatters. The text is overlaid on this background.

Practical methods for tannin retention

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With support from Jacob Holman (Les Bourgeois Vineyards)

The tannin experience

1. What and Why

Tannins in wine

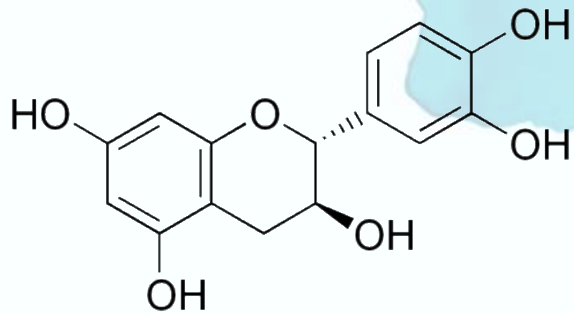
3. Winemaking from 2019

2. Winemaking from 2018

4. Current work

Tannins: What and Why

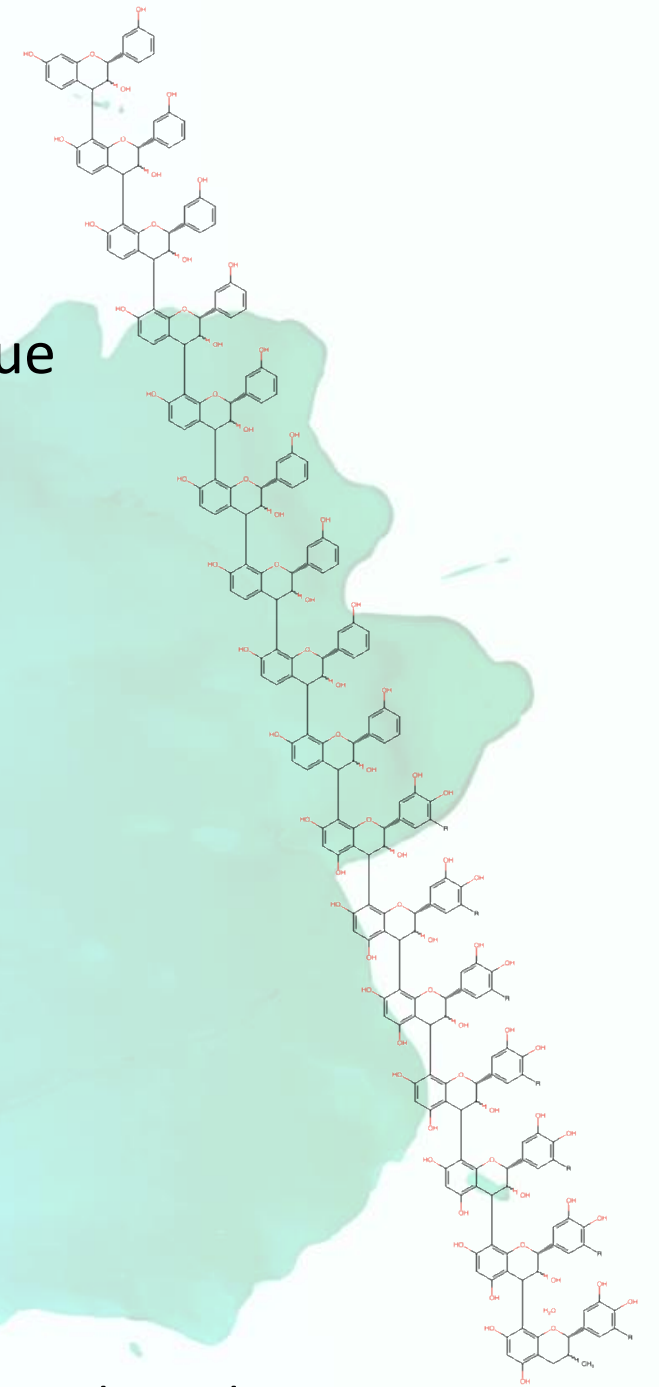
- Secondary metabolites found in skin, seed, pulp, and stem tissue
- Can bind with salivary proteins, giving astringent mouthfeel
 - Smaller oligomers (<5) are bitter
 - Larger polymers = more astringency
 - ×Skin polymers up to 85
 - ×Seed polymers up to 12
- Copigmentation and antioxidant



Catechin, monomer



Condensed tannin



Tannin retention is still an issue.

Improving tannin extraction and retention in hybrid red wines has been an industry want and need for years and still is.

Poor extraction/retention when compared to vinifera reds

Current research theories:

1. Cell wall material

2. Protein

No practical solution has been identified





Can we improve native and
exogenous tannin retention?

2018 Winemaking

2018 Southwest Research Center (Missouri) Chambourcin

1. Exogenous tannin addition

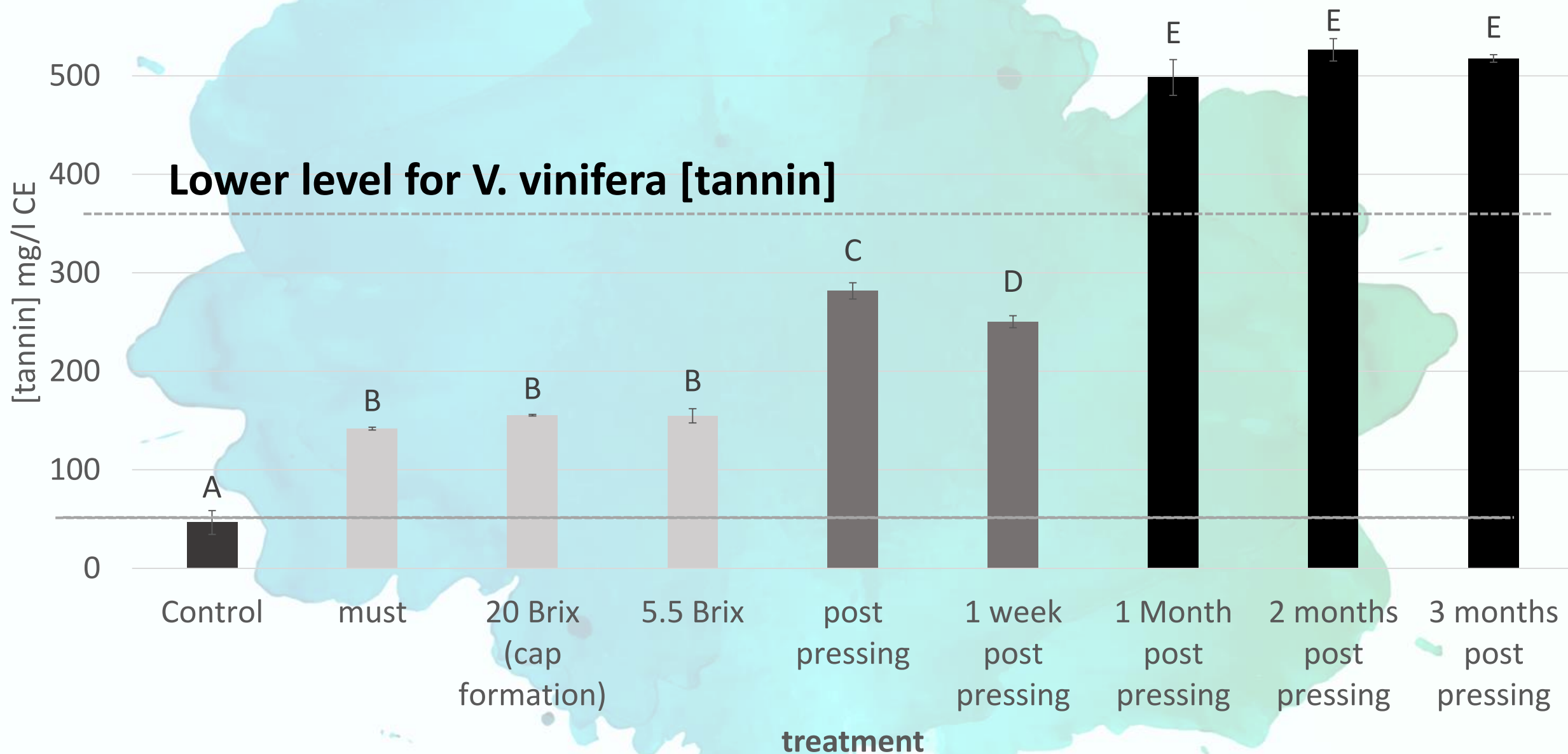
- Added 1400 mg/l of Enartis Tan UVA (350 mg/l condensed tannin)
- Treatments included 8 different time points from must to 3 months post pressing

2. Blended must

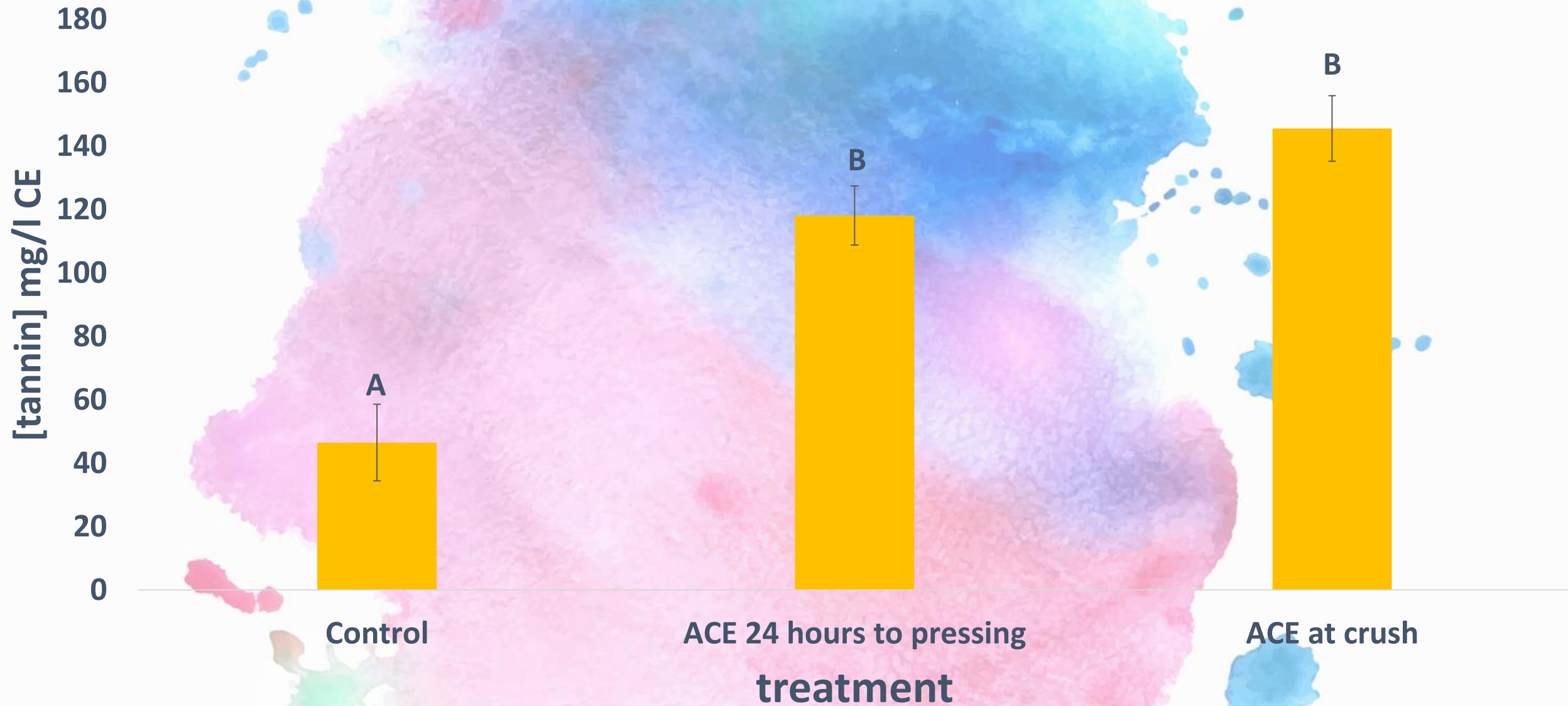
- Also known as Accentuated Cut Edges (ACE), developed in Tasmania
- Very simply uses a hand blender to increase juice:skin surface area and increase extraction
- Used a stick blender to blend at must and 24 hours to pressing



2018 Results: Exogenous tannin additions at 6 months post-press



2018 Results: ACE treatment 6 months post-press



2019 Winemaking

2019 Chambourcin provided by Les Bourgeois Vineyards

1. ACE and exogenous tannin addition

- Added 1400 mg/l of Enartis Tan UVA (350 mg/l condensed tannin)
- Crush and 1-month post press additions
- ACE at crush
- Combination of ACE and tannin addition

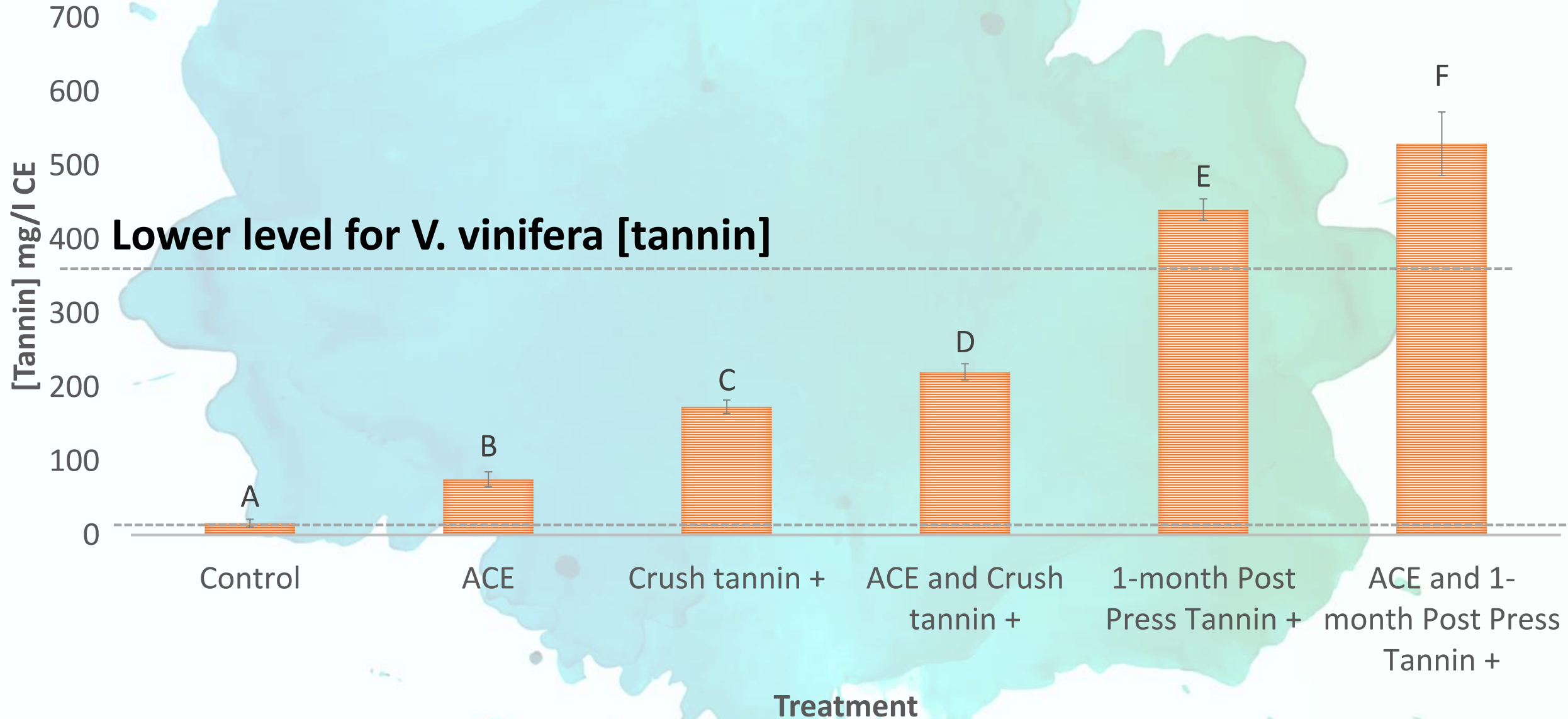
2. Double tannin add

- In collaboration with Les Bourgeois Vineyards and Oak Solutions Group
- Added 400 mg/l of trū/tan F² (300 mg/l condensed tannin)
- Crush and 4-months post press additions
- Combined additions in one treatment for 2, 400 mg/l additions

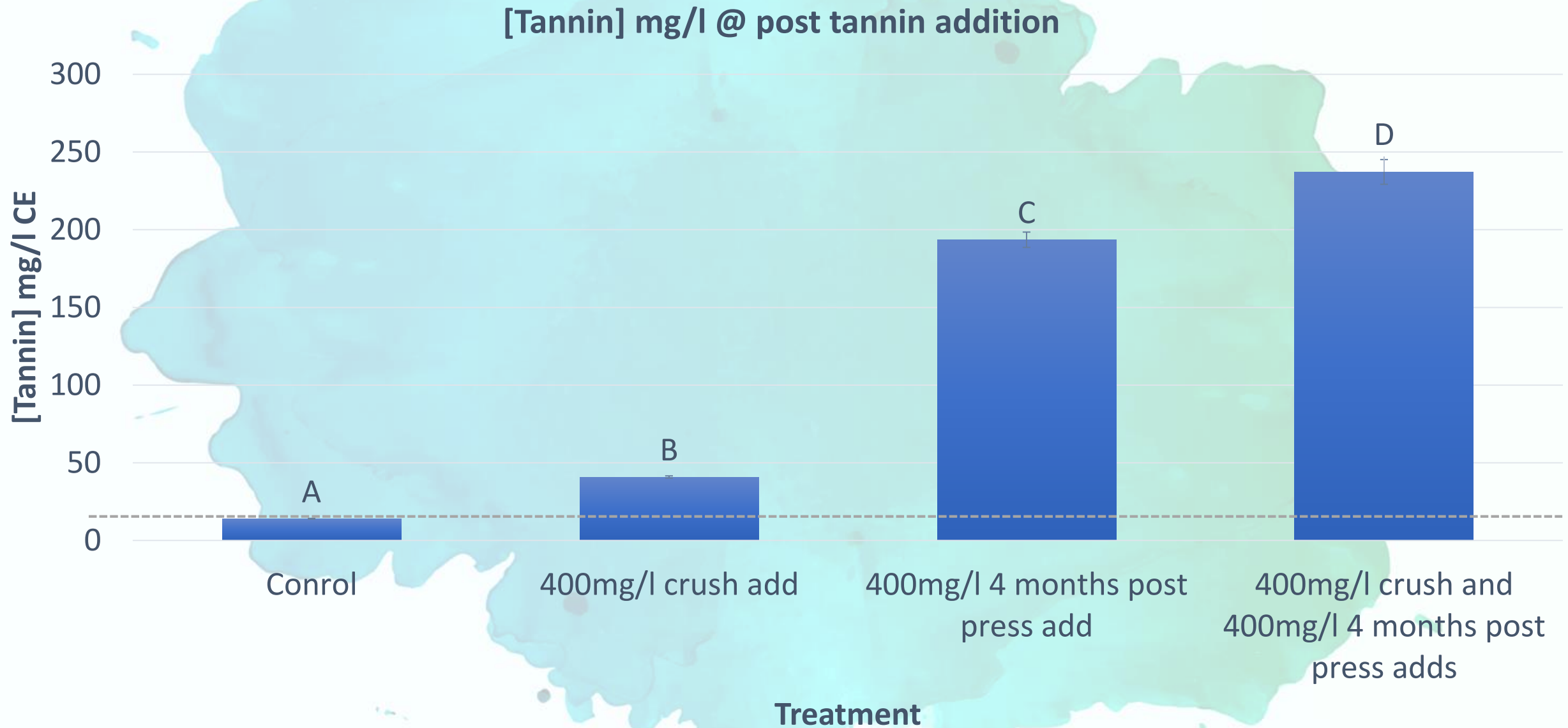



2019 Results: ACE and Exogenous tannin addition

TANNIN CONTENT AT BOTTLING



2019 Results: Double exogenous tannin additions





Early tannin additions have
low impact on wine tannin
content

Current work

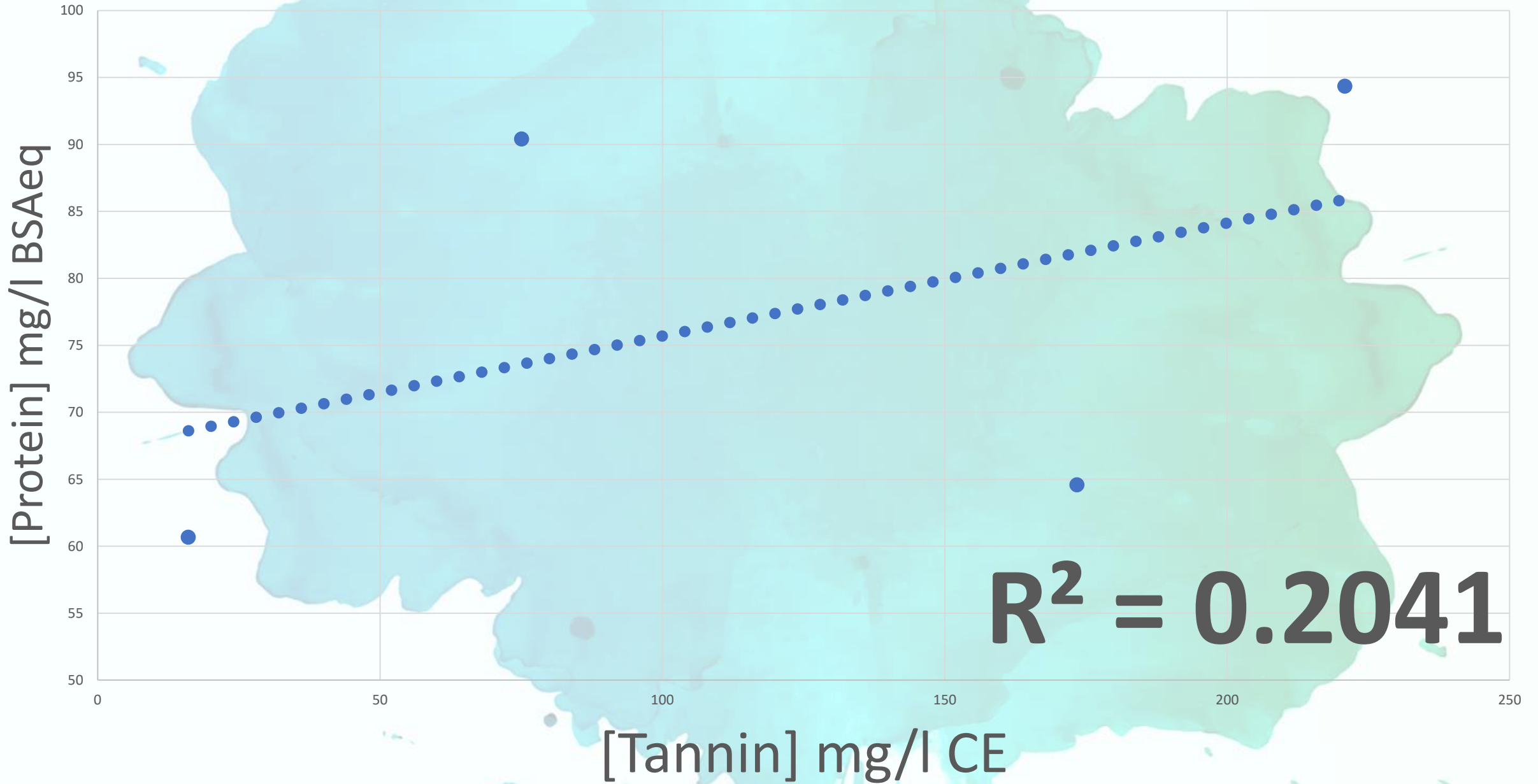
- **Wine Protein**

- What impact does protein have on tannin retention?
- Method optimization for juice and wine protein extraction, quantification, and identification

- **Using Syrah and Chambourcin to understand protein impact and extraction**

- **Fermentation size in relation to extraction**

Correlation of wine protein and tannin content (2019)

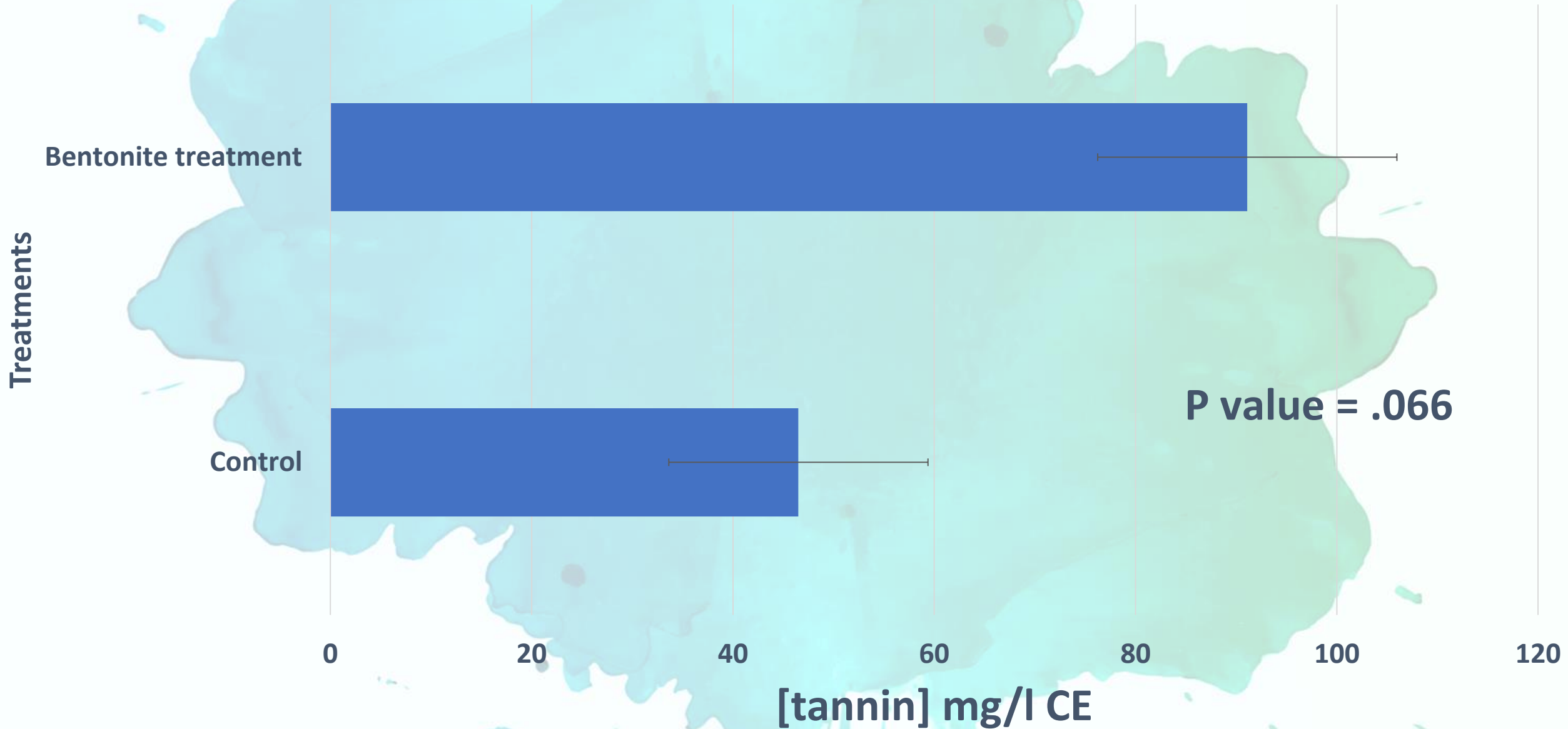


Thanks!

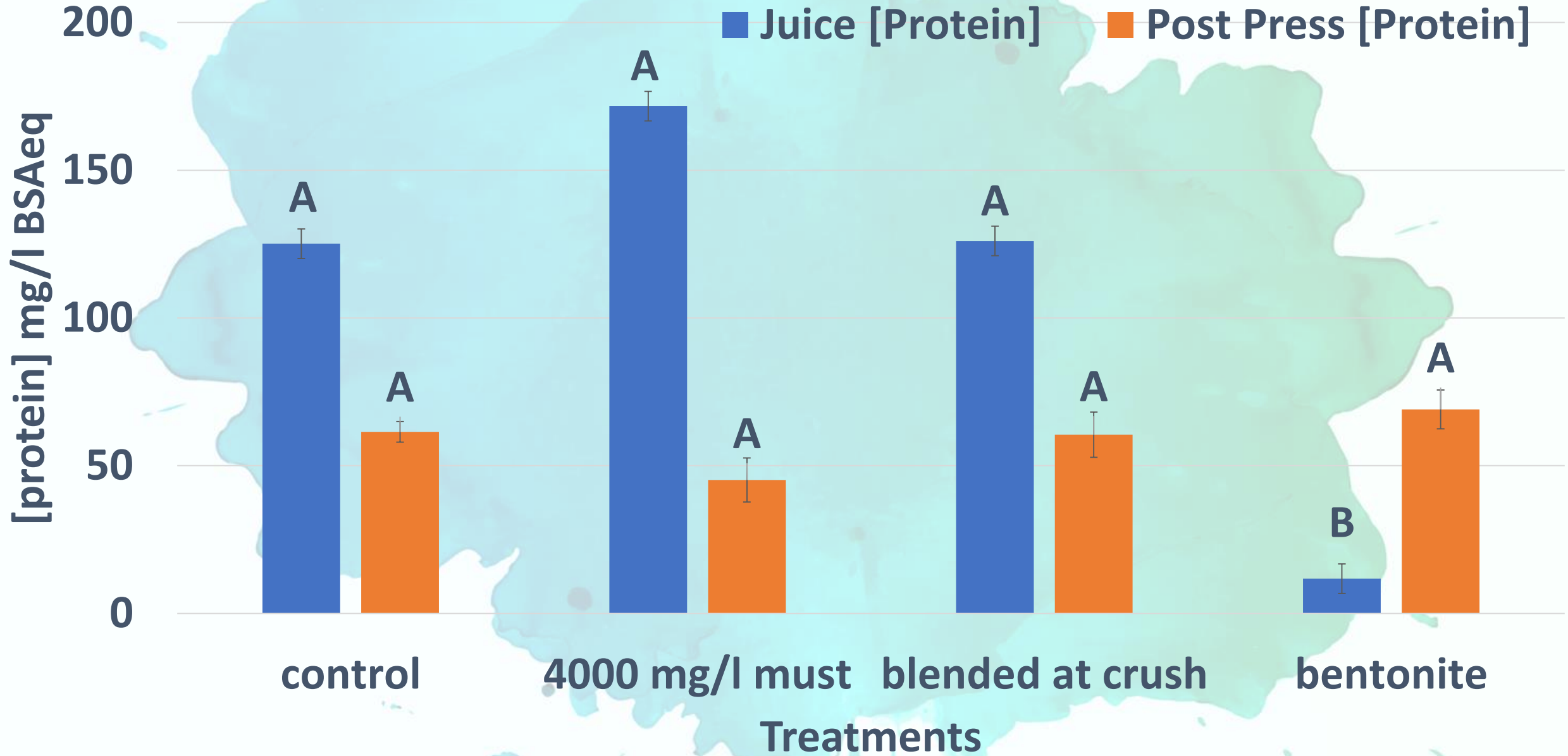
- Les Bourgeois Vineyards
- Oak Solutions Group
- Missouri Grape and wine Institute
- Missouri Wine and Grape Board
- Missouri Department of Agriculture



Results: Bentonite treatment 6 months post press



Quantification Results: [Protein] quantification





Enzyme treatment

