



**A new grape and wine industry:  
things to consider as you grow**

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# A culture of Wine Quality

T I D A L B A Y

*Nova Scotia's Signature White Wine*



# Quality

What do we mean by “quality”?

Technical quality:

Absence of faults

“Clean”, well-balanced drinkable wine

Hedonic quality:

Exemplifies a distinct wine style

Characteristic of the grape variety

Reflects a regional identity

# Ways to encourage and reward quality

- Wine competitions
- Formal voluntary programs (without certification rules)
- VQA programs (with certification rules)
- VQA plus regional style (with cert. rules)

# Wine competitions

## Benefits for the Industry:

Rewards (medals!!)      Marketing      Feedback (?)

## Organizing issues:

Judge-to-wine ratio vs. funding

Who are the judges?

What do the scores mean for improving winemaking?

***A good starting point for developing a quality program***

# Formal voluntary programs

## Oregon Umpqua Valley model

- No rules and no certification (no “stickers”)
- Independent outside wine sensory evaluation
- Winemaker tastings to review results and discuss their wines
- add an enologist to the review team

***Maybe even a better starting point for developing a local quality program***

# VQA (Vintner's Quality Alliance) approach

Sensory evaluation and wine faults

Basic chemical analysis

Standards, with points awarded

Seals/"stickers" awarded to those who pass

Educational follow up

Marketing benefits

Examples: Iowa, Ohio, Virginia, New Jersey, Ontario

# VQA + wine style approach

Technical quality plus

Standards for a regional or varietal wine style

Nova Scotia-Tidal Bay (2011)

Illinois- Rose' initiative (2018)

Wisconsin- Petite Pearl (2018)

Indiana-Traminette (2010)



# Own the Terroir: Tidal Bay

*One story.  
Many authors.*



THE TIDAL BAY ANNUAL RELEASE AND TASTING EVENT **12TIDES**  
FRIDAY MAY 10 2019, 7:00 - 9:30 PM • HALIFAX MARRIOTT HARBOURFRONT HOTEL

REFRESHINGLY NOVA SCOTIAN • FOR TICKETS, VISIT [TIDALBAY.CA](http://TIDALBAY.CA)

*Taste the 2018 selections of Nova Scotia's vintage wine.*

# Tidal Bay Appellation

- *Wine Style Concept*: Fresh, crisp, dry, still, white with a bright, 'signature Nova Scotia' aroma (lively fresh green fruit and characteristic minerality) and crisp acidity
- *Regional Food Pairing*: Lobstah!
- *Standards*
  - Wines must demonstrate the classic Nova Scotian style
  - 100% Nova Scotia grown grapes
  - Must meet basic wine quality standards
  - Must be produced from listed varieties
- Independent Tasting Panel gives a Pass or Fail
- 12 Tides Release gala event every May
- 12 out of 12 Nova Scotia association members participate

# Tidal Bay:

## A standard and a vision

**“Pairs well with seafood and ocean views.”**

“Every wine region hopes to have wines that stand out and get recognized for defining what they do best. In Nova Scotia, our wines have consistently been known for their fresh, crisp and bright style. With this in mind, Nova Scotia winery owners and winemakers decided to develop a signature wine that revealed these characteristics, and so began [Tidal Bay](#). A wine with unique character, Tidal Bay brilliantly reflects the terroir, coastal breezes and cooler climate of its birthplace.”

# Challenges

Winery participation and support

Consistent technical quality

Our obsession with varietal wines

Going beyond technical quality

What is identifiable and distinct to the region?

How do you market quality?

# What's your vision for Montana?

- ***Wine Style Concept:***
- ***Regional Food Pairing:***

**“Pairs well with\_\_\_\_\_”**

“Every wine region hopes to have wines that stand out and get recognized for defining what they do best. In Montana, our wines have consistently been known for what characteristics?

With this in mind, Montana winery owners and winemakers decided to develop a signature wine that revealed these characteristics, and so began Appellation or brand name. A wine with unique character, Appellation or brand name brilliantly reflects what aspects of the region?





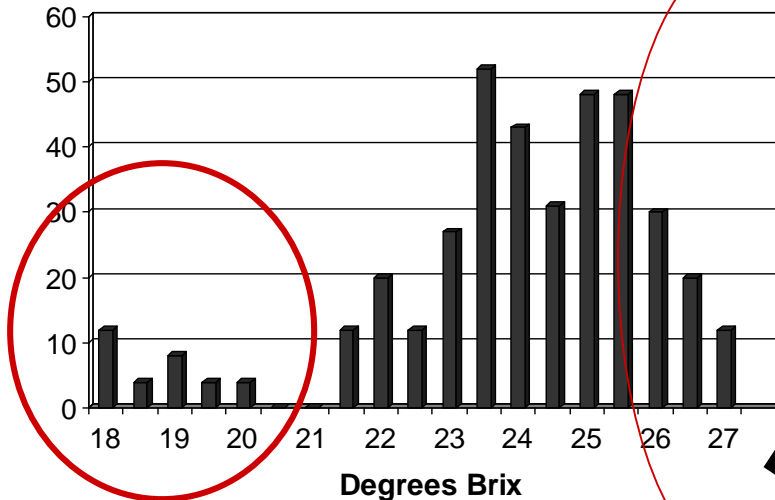


Quality of the crop  
;  
Uniformity and Ripeness



# The Holy Grail: Uniformity and Ripeness

## Bad Vine Management



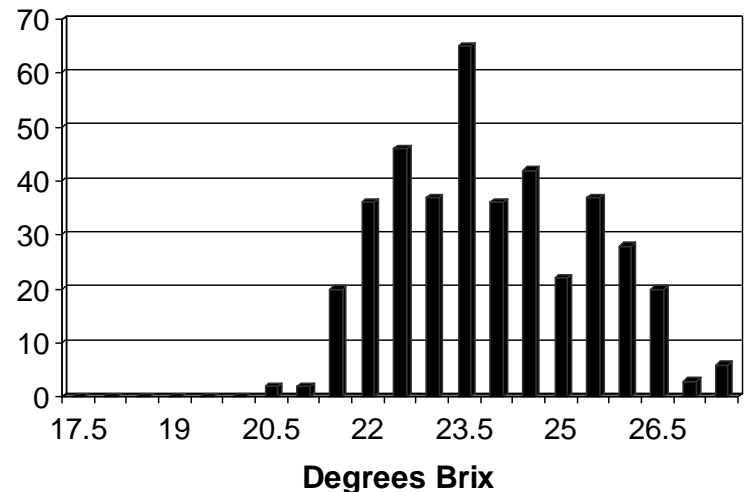
### Under ripe berries:

- High malic acid (sharp)
- Herbaceous
- "Green"

### Over ripe berries:

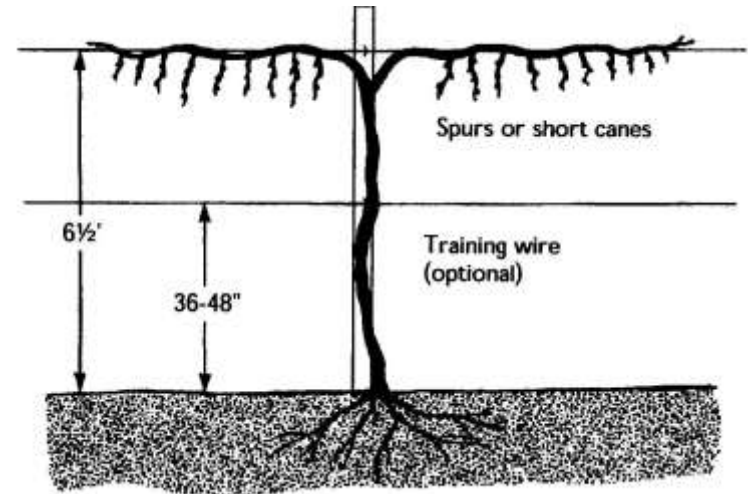
- High alcohol
- Odd flavors (foxy; robtussin)
- Flat and flabby (acid blown out)

## Good Vine Management



Data from Zelma Long, Vilafonte Wine Estate, SA

# Training for Sun Exposure: Top Wire Cordon System



# Training for Sun Exposure: Top Wire Cordon System

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Excellent sun exposure

Easy to spray and harvest

Especially adapted to vines that  
naturally droop

— —

Lots of perennial wood exposed to  
winter cold

Susceptible to wind breakage

Requires shoot combing

## Effect on Quality

X lower acidity

X higher sugar

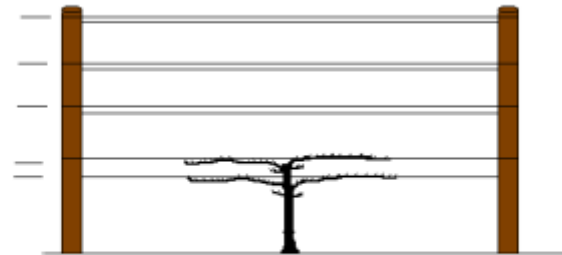
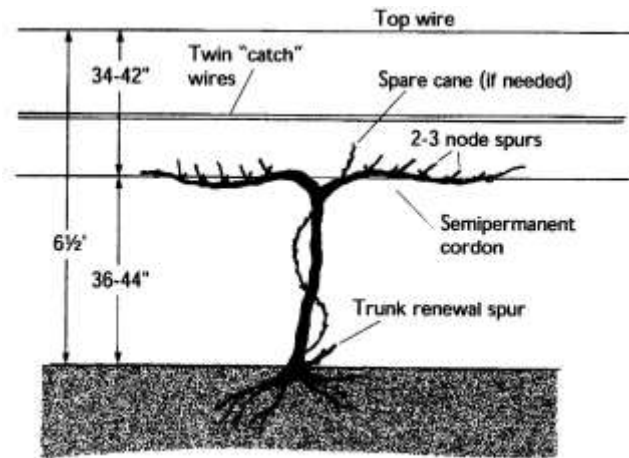
X higher anthocyanins

X higher PVTs

X less herbaceousness

## Better Uniformity

# Training for Sun Exposure: Vertical Shoot Positioning



# Training for Sun Exposure: Vertical Shoot Positioning

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Takes advantage of strong upright  
growth habit of certain varieties  
Fruit is all in one zone for easier harvest  
If well managed, pretty good sun  
Quick to prune

## Effect on Quality

X	lower acidity
X	higher sugar
X	higher anthocyanins
X	higher PVTs
X	less herbaceousness

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Lots of perennial wood exposed to winter  
cold  
Requires significant amount of  
management during the growing season  
(shoot positioning and hedging)

## Better Uniformity

# Balance Between Crop and Vegetation

## Creative pruning Formulas

### Shoots per meter of canopy

(20 shoots/m for low-medium vigor vines; Reynolds)

### Pruning Weight

(3.2-5.5 kg of fruit per 1/2kg of prunings; Reynolds)

### Estimate crop weight

( Crop = cluster weight x  
#clusters/node x # nodes)

## Effects on quality

- X lower acidity
- X higher sugar
- higher anthocyanins
- higher PVTs
- X less herbaceousness

**Better Uniformity**

# Shoot Positioning

## Problem

Shoots grow laterally to shade each other and the clusters

## Solution

Shoot positioning and shoot combing

## When?

Before tendrils become thigmotropic but not so early that they break easily

## Effects on quality

- X lower acidity
- X higher sugar
- higher anthocyanins
- higher PVTs
- X less herbaceousness

**Better Uniformity**



# Remove Basal Leaves

## Question

Given good foliage exposure to the sun, does it really matter if the fruit is exposed, as well?

## Answer

Emphatically, YES. (Reynolds, Koblet, Morrison)

## How?

Remove bottom two leaves, including those just opposite the clusters. Try to achieve at least 60% exposure.

## When?

Two weeks after bloom  
(not later, especially in hot climates)

## Effects on quality

- lower acidity
- higher sugar
- X higher anthocyanins
- X higher PVTs (15-50% greater)
- X less herbaceousness

## Better Uniformity



# Cluster Thinning

## Problem

Dormant pruning is an imprecise business due to: 1) the vagaries of new varieties and 2) difficulty in estimating winter injury

So.....we tend to prune generously, and the vine sets too much fruit.

## Solution:

Adjust crop load by cluster thinning

## When?

Immediately after bloom

## Effects on quality

- X lower acidity
- X higher sugar
- higher anthocyanins
- higher PVTs (15-50% greater)
- less herbaceousness

## Better Uniformity

# Hedging

## Problem

Only 15 leaves needed to ripen fruit.  
Vines usually produce more than 15 leaves per shoot, especially high vigor vines.

## Solution

Trim shoots beyond 15th node

## When?

2 weeks before veraison

## Effects on quality

- lower acidity
- higher sugar
- higher anthocyanins
- X higher PVTs (15-50% greater)
- less herbaceousness

**Better Uniformity**

# Summary:

## Management and Quality Effects

	Lower Acidity	Higher Sugar	Higher Anthocyanins	Higher PVTs	Less Herbaceous ness	Uniformity
Training for Sun Exposure	X	X	X	X	X	<b>X</b>
Fruit- Veg. Balance	X	X			X	<b>X</b>
Shoot Positioning	X	X			X	<b>X</b>
Remove Weak Shoots	X	X	X	X	X	<b>X</b>
Remove Basal Leaves	X		X	X	X	<b>X</b>
Cluster Thinning	X	X				<b>X</b>
Hedging				X		<b>X</b>

# Vine management: How did I do?





# Evaluating how you did

## Standing away from the canopy

### A. Canopy Gaps

-About 40% gaps	10
-About 50% or more	8
-About 30%	6
-About 20%	4
-About 10% or less	0

### B. Leaf Size. Basal-mid leaves are:

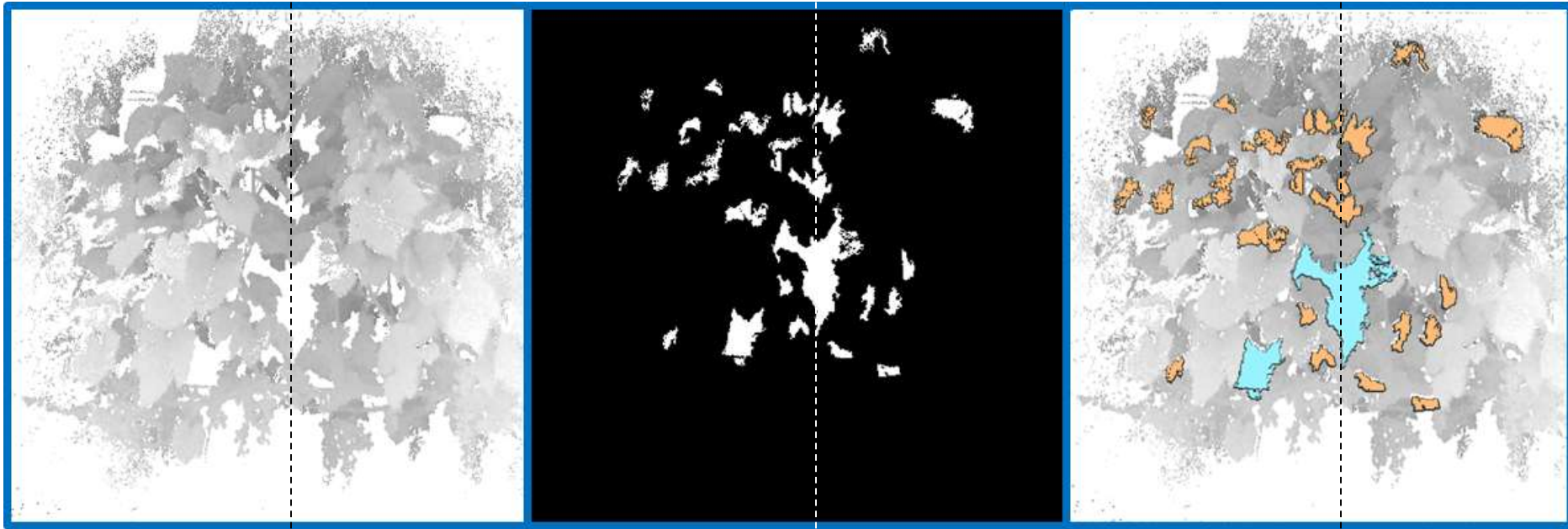
-Slightly small	10
-Average	8
-Slightly large	6
-Very large	4
-Very small	2

### C. Leaf Color. The basal leaves in fruit zone are:

-Green, healthy, slightly dull and pale	10
-Dark green, healthy, shiny	6
-Yellowish green, healthy	6
-Mildly nutrient deficient	6
-Unhealthy, with marked necrosis or chlorosis	2

**From Richard Smart, Sunlight into Wine**

Left side~30% gaps  
Right side~15% gaps



From Plocher and Hisomoto, 2015

# Evaluating how you did

## Standing at the canopy.

**D. Canopy Density.** Look from side to side through the vine in the fruit zone. Estimate the number of leaf layers:

About 1 layer or less	10
-About 1.5 layers	8
-About 2 layers	4
-More than 2 layers	2

**E. Fruit Exposure.** Estimate the portion of fruit on the vine that is exposed to sun.

-About 60% or more exposed	10
-About 50% exposed	8
-About 40% exposed	6
-About 30% exposed	4
-About 20% or less fruit exposed	2

**F. Shoot Length.**

About 10-20 nodes long	10
About 8-10 nodes long	6
About 20-25 nodes long	6
Less than about 8 nodes	2
More than about 25 nodes	2

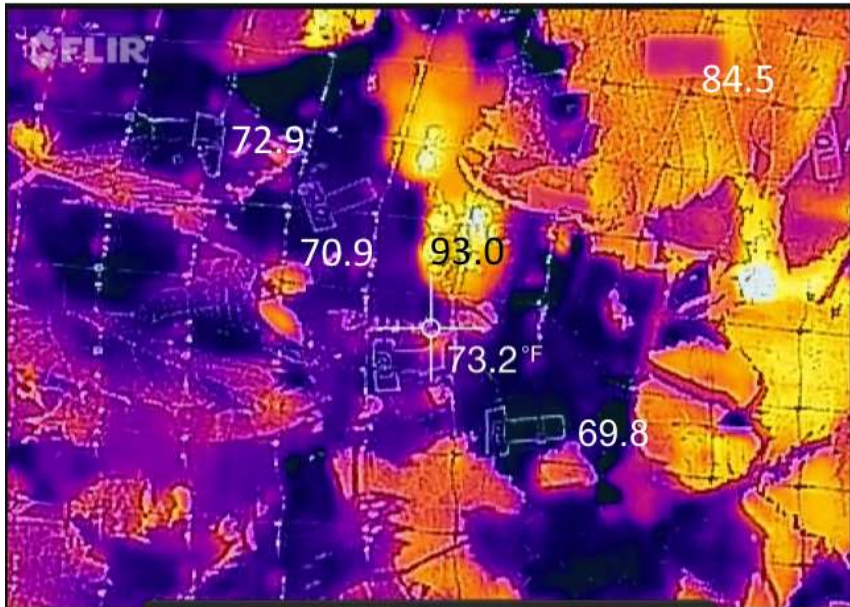
**G. Lateral Shoot Growth.** Look at the point along the lateral shoots where they would be hedged or trimmed in late season. If laterals have already been trimmed, look at the diameter of the trimmed stubs:

-Limited or no lateral growth	10
-Moderately vigorous lateral growth	6
-Very vigorous lateral growth	2

**From Richard Smart, Sunlight into Wine**

# Effect of sun on leaf and berry temperature

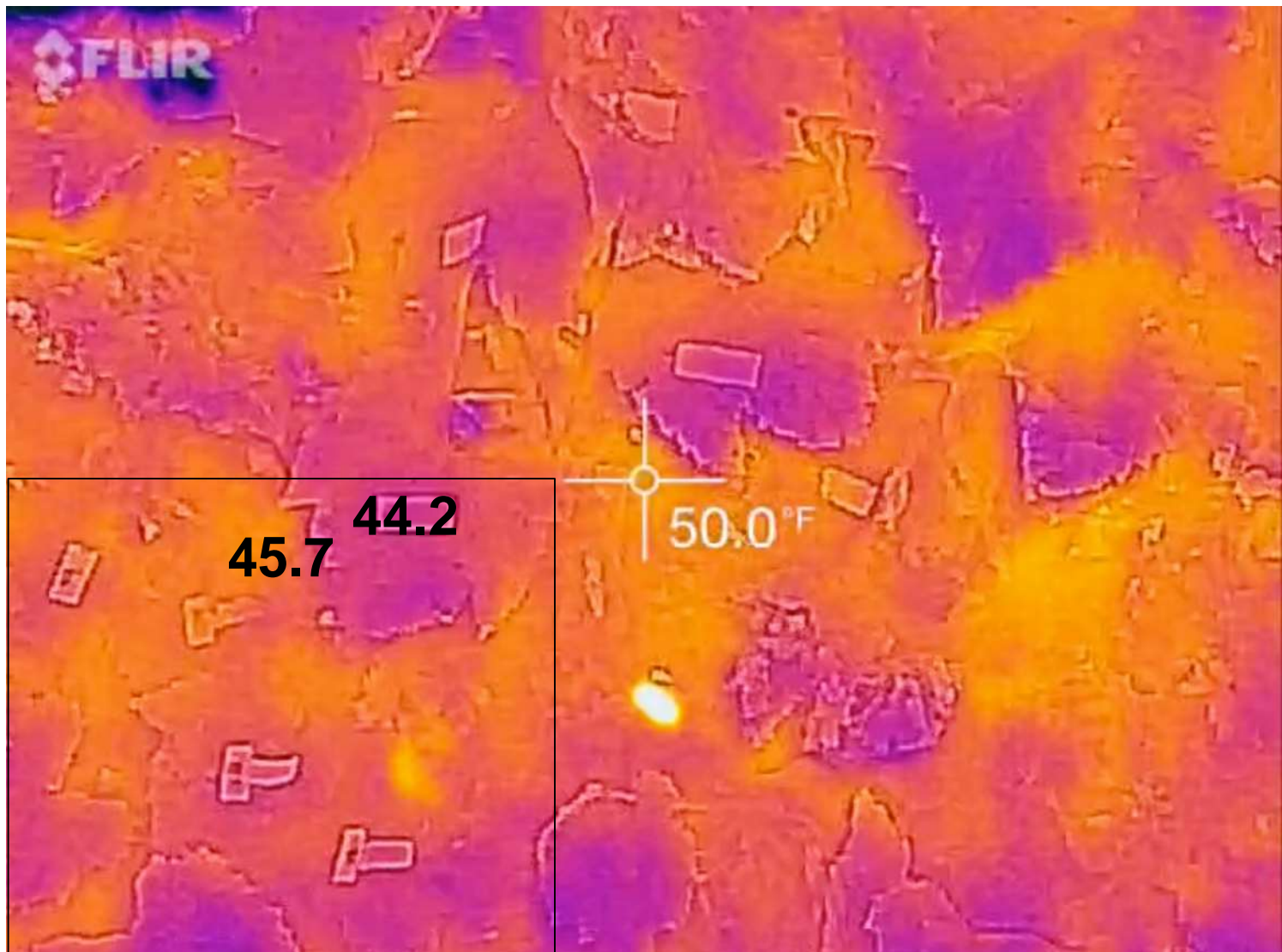
2 October, 4:15PM



**Left. FLIR One thermal image of grapevine canopy showing 15 degree F temperature difference between exterior leaf (84.5F) and completely shaded leaf (69.8F). A grape cluster is the bright object in the upper middle of the scene at 93F, 10 degrees higher than ambient air temperature is 84F. Right. Visual camera view of the same scene. From Plocher, 2016**



**3 October, 6:45 AM. Air temperature = 44F**







# Harvest Ripe Fruit

# Harvest Ripe Fruit: Planning and Patience

## **Planning**

Net vines early

Trap out yellow jackets

Spray to pre-empt sour rot

Late season crop control, if necessary

Basal leaf pulling

# Harvest Ripe Fruit: Planning and Patience

## What is “ripe”?

Dry Reds: 20-25 Brix; ***TA= 7-1.0 g/L; pH= 3.25-3.5***

Whites: Depends on grape variety and wine style

Brianna, Louise, L'Acadie: 17 Brix

Prairie Star, Adalmiina: 19-22 Brix TA= 9-1.0 g/L

Lacrescent: 22-24 Brix; TA = 1.1-1.3

Seeds brown and lignified

Berries soft to pressure

Jammy texture inside

***Patience: Varietal aroma development and acid reduction take time! Don't Panic!***



# Geez!!! Another Polar Vortex?

## 30-31 January, 2019

