BCAWA Executive 2010 - 2011

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BCAWA News

Volume 2, Number 2

April 15, 2011

Message from the Editor

BCAWA Members:

Please make a note that for Vol. 2 (2011) the next copy deadlines will be June 20, August 10, October 10, and December 10.

The highlight of this issue is Clem Joyce's 7-page compendium of valuable information on fermentation nutrients, particularly yeast assimilable nitrogen. Thanks for permission to reproduce this article, Clem; members will find themselves referring to it time and again!

Thanks once more to John Schreiner for permission to reprint one of his recent blogs.

Here's hoping many of you have entered the Provincial Competition in Kamloops and that the judges recognize the high quality of your entries. In May it will be my task to determine which of those wines have qualified to be BC's 50 eligible entries into the Nationals. I think it's safe to say that all our Golds and most, if not all our Silvers will go forward. The Grand Champion from across Canada will be based on the 5 wines from one individual scoring highest in Nova Scotia.

Here's wishing you Good Luck!

George

Message from the President

It is nice to see that winter is gradually being replaced by spring and that means that the Annual Provincial Competition is rapidly approaching. Kamloops is hosting this years competition and I urge as many people as possible to support the Kamloops club and make the short trek from Vancouver to Kamloops and attend the Competition. It is only a 3.5 to 4 hour drive. Some of your commutes to work are almost that long… It is a lot of work to host a Provincial competition, so please show your support by attending. They can arrange for billeting and have found some hotels that offer great rates for BCAWA members.

On Saturday just before the competition, around 2:30, our Annual General meeting will take place. Clubs should ensure that they have representation at that meeting to vote and other club members are welcome to attend as well, but only one member from each club can vote.

I have been your president for the past 2 years and it looks like my reign of terror may last for another year as we have no one willing to step forward. It has been a very enjoyable and rewarding time for me. Every organization needs fresh ideas to keep them vibrant and moving forward and to this end I encourage everyone to consider volunteering

As of right now we have the need for a Vice President and perhaps 1 or 2 Directors at large. The Vice President would be expected to take over the duties of the President next year but has a year to learn the job and also has the support of the past president if they wish. None of these positions is very difficult or time consuming but they are very important to maintain the ongoing health of our organization. There are 2 executive meetings done each year by tele-conferencing and 2 General meetings that should be attended followed by the AGM.

Please give this some careful consideration. If you or someone you know is interested please contact Helmut Berner hberner@shaw.ca Lets fill up his inbox with nominations!

Cheers

Rick Homer

BCAWA President

In This Issue

2011 BCAWA Provincial Competition

2011 BCAWA Provincial Competition
May 6-7, 2011
Hal Rogers Hall, 2025 Summit Drive, Kamloops, B.C.

Hosted by the Kamloops Winemakers' Association
Chief Steward: Art Hooper 250 372-8317 artshirl@telus.net..,
Registrar: Bob Jennejohn 250372-7966 lila_jennejohn@telus.net

Friday May 6:
1:00- 4:30pm - Competition Judging, Part 1
4:30-6:30pm - Meet & Greet

Saturday, May 7
8:30am – 2:00 pm - Competition Judging Part 2
2:00 pm – BCAWA Annual General Meeting

Tickets $50.00 per person, include "Meet and Greet" and the Awards Dinner. Tickets reserved by e-mail to Dianne Meyer at dm8626@telus.net …. Phone 250-377-8626
Tickets should be paid for in advance by mail. Make cheque payable to "2011 Provincial Competition" and send cheque **by April 23** to Dianne Meyer 2225 Turnberry Place, Kamloops, V1S 1S7

Special rates are available for out of town visitors at the Alpine Motel, 1393 Hugh Allen Drive:
Queen $69 or Double Queen $79 (Reg. ca $145). Contact the motel at 1.800.555.1123 ext 1260 and tell them you're with the BC Amateur Winemakers.

Dr. Alan Marks Presentation — April 27, North Van

Email georgegibson@shaw.ca to reserve your door prize lucky number for an evening with Alan Marks. Alan's presentation will be Powerpoint with handouts and 'before and after' treated wine samples in Vinovan's new Riedel glasses to demonstrate the impact of specific additives. It will highlight techniques and products used by commercial winemakers to "fill in the blanks" in a wine's sensory profile concentrating mostly on tannins. Alan will discuss remedial actions for our wines focusing on when and how to use fining agents properly.

The program will begin at 7:30pm in the Gloria Dei Church Hall. There will be interesting appies selected by Vinovan's Stephen Small. There is no charge to attend this event — thanks to BCAWA's education policy. To provide time for Alan to prepare samples and handouts we must shut off registration by April 22.

Clem Joyce — YAN, Nutrients for Fermentation

YAN, NUTRIENTS FOR FERMENTATION

by Clem Joyce,
Vancouver Amateur Winemakers Association

What is YAN?
Ammonia Nitrogen + Free Amino Nitrogen (FAN) = YAN (Yeast Assimilable Nitrogen)
Grapes contain two kinds of nitrogen that the yeast can assimilate during fermentation; one from ammonia and the other from amino acids or Free Amino Nitrogen (FAN). Together they contribute the nitrogen utilized by yeast referred to as Yeast Assimilable Nitrogen (YAN). To conduct healthy, complete fermentations, yeast must be supplied with sufficient nutrient. This includes nitrogen, vitamins and minerals. Insufficient nutrients can create off odours like hydrogen sulphide (H_2S), ethyl acetate (like nail polish), acetic acid (vinegar), and other off characters, as well as reduced fruity aromas. It may be in the yeast's inability to assimilate nitrogen caused by insufficient vitamins and minerals. But in this article, let's look primarily at nitrogen and its relationship with yeast during fermentation. *"The nutrient balance in a must is influenced by the health status of the grapes, the yield, the level of ripeness, the soil, the climate and other viticulture practices. Every grape harvest contributes its own variability so it is very important to reduce the risk of sluggish, stuck or sensory deviations in the fermentations. One of the keys for proper fermentation management is an appropriate nutritional strategy." -- Lallemand*

YAN additions requirements may depend upon these considerations.

1. Initial grape sugar - Brix
2. Initial YAN of must
3. Temperature of fermentation
4. Oxygen as a nutrient
5. Yeast strain and dosage to conduct fermentation
6. Timing and type of nitrogen additions
7. Calculating YAN additions

Typical nitrogen distribution in the grape.
Pulp 77% Skins 15% Seeds 8%
Juice and must handling or pulp separation can have a significant impact on available YAN.
Whole berry press vs. crush, soak and drain,
bleeding vs. non-dejuicing reds,
short vs. long vat fermentations.
Skin nutrient is mainly FAN which is released slowly during maceration. YAN from the same terroir can not be expected to be constant as Dr B. Zoecklein has shown significant variations in YAN levels from year to year.

Problems associated with insufficient nitrogen and its addition
Wild yeast and bacteria can consume nutrients during the crush-lag phase but YAN additions can stimulate unwanted bacterial growth if added too early. Sufficient SO_2 and Lysozyme additions at crush can help to control early unwanted bacteria. Low thiamine levels can cause a sluggish fermentation start. Musts with dose levels of 50ppm or more of SO2 should increase thiamine addition.
Bentonite binds proteins and amino acids (AA) – certain AA are aroma precursors and by removing them from the juice, effectively removing potential wine aroma and reducing quality. Bentonite should be added in the later half or after fermentation.
Acetic acid production is least when YAN 200-350 mgN/L, and while higher alcohols can contribute to wine aroma and complexity, too much can be negative, hiding fruity aromas, optimal YAN also about 200-350 mgN/L.
Insufficient nitrogen during fermentation can cause H_2S which if not corrected can rapidly lead to more permanent off qualities.
Turbidity: when musts are over clarified, many nutrient factors for yeast are removed, so it is necessary to supplement them with the addition of complete and balanced nutrients.

Dose rates and terminology
Many dose rates are given in grams per hundred litres (g/hL) or part per million (ppm) or milligrams per litre (mg/L). Inter-mixing quantative measurements can be confusing and lead to errors. Caution should be taken, but with care dimensions can be easily converted through dimensional analysis.
1cc = 1ml = 1g = .001L and 25 g/hL = 250ppm = 250 mg/L
Lag Phase – From the time of yeast inoculation to 2-3 Brix drop, or SG drop of about .005-.015. Depending on temperature this could be as little as 6 hours or a couple of days.
Growth Phase – The period in fermentation from Lag Phase to about 1/3 of sugar fermentation when yeast cell population growth increases to its maximum and nutrients can become depleted.

How do we measure nitrogen in our grape must?
Grape must can be analyzed in commercial labs but the only method we amateurs have to determine must nitrogen content is the Formal Method test; a fairly simple test requiring a pH meter, neutralizing a sample with a sodium hydroxide solution, and involving formaldehyde. Details can be accessed http://www.fst.vt.edu/extension/enology/downloads/FermNitro.pdf all easily within the grasp of most winemakers who have done any titrations. The results give us an amount in mgN/L. In red skin macerated fermentations, testing samples require complete pulp macerations, avoiding seed breaking, to give full nitrogen results, otherwise results could be slightly low. I have found YAN levels in red macerated musts to rise from 207 to 224mgN/L in two days. The very minimum YAN required for a healthy ferment is about 150mgN/L and this depends on sugar content of the must. Average YAN content varies but in my experience, most reds with Brix of 24-27 are between 125 and 175 mgN/L, A Brix of 27 may require about 300 - 350mgN/L or more. so testing is imperative for making educated decisions about YAN additions. The importance of testing is paramount.

Clem Joyce — Nutrients p. 2

Temperature Management of Fermentation an Important Key

Although yeast has a high - low range of temperature tolerances under ideal fermentation conditions, working towards the extremes of these is detrimental to yeast growth and metabolism. Think of the range in terms of a bell curve; more moderate temperatures will help the yeast work more efficiently and produce less undesirable characters. The higher extreme or a sudden temperature spike is the most severe that can damage yeast leading to H2S, a tell tale sign, and a sluggish or stuck fermentation. Lallemand suggests 75F for reds and 68F for whites is a good medium fermentation temperature particularly in the initial Lag and Growth phase. Keeping temperatures moderate during the initial stages give the yeast more time to grow healthy cells. Higher temperatures promote greater YAN utilization. Enzymes available for extraction are far more effective than higher fermentation temperatures. No one temperature profile is good for all yeasts. "*Ethanol toxicity has a progressive and direct impact on yeast metabolism and at extremely high or low temperatures, this impact is more severe"* Specific yeast temperature tolerances should be consulted before selecting a working yeast.

Oxygen as a Nutrient

Yeast requires sufficient oxygen in the initial lag and growth phase to produce its own sterols and lipids to build healthy yeast cells. Yeast propagated aerobically contains a higher proportion of unsaturated fatty acids and up to three times the steroid level of anaerobic yeast. Without initial oxygen through the growth phase, replication is restricted to 4-5 generations from the possible 7-8, as each yeast budding cycle reduces the sterol content by 50%. Once the level reaches a critical point replication stops and fermentation must continue with the population present at that point. Oxygen can be added during fermentation through must bubblers, pump over or delestage. Inactivated yeast products also provide valuable resources of sterols necessary for healthy cells. The best time to add is at 1/3 sugar depletion. Products such as Nutrient Vit End or SIY Cell Hulls can also be added in last half of AF if ferment begins to be sluggish.

"*It is important to distinguish two related problems of fermentation: sluggish fermentation and stuck fermentation. Indeed, sluggish is the result of a deficiency in available nitrogen resulting in a low rate throughout the fermentation. Stuck fermentations occur when yeasts are dead, not due to a nitrogen deficiency, but to a deficiency of survival factors such as sterols and oxygen."* Lallemand

Yeast Strain

How viable are your yeasts for inoculation? Old or poorly stored dry yeast can significantly lose their viability, perhaps 20-50% per year, and thus their ability to perform adequately. A standard yeast inoculation dosage is about 25g/hL but should be increased to 35g/hL when starting fermentations with Brix levels 25-30°.

Rod Church of the Nanaimo Winemakers proposes a multiplier index for adding nutrient to particular yeast strains. Yeast descriptions commonly rate their nitrogen requirements as low, medium or high. Technically, this is measured as the amount of nitrogen (in milligrams) needed by the yeast to produce CO_2 (in grams). The table below is an amended version of suggested multipliers taken from the Nanaimo Winemakers Website. This concept may be controversial and unnecessary but is a guide to possible addition rates based on yeast strain. The yeast Multiplier Index is used to increase YAN addition dosages based on each yeast strain. This could be particularly relevant with high Brix musts. Multiply your calculated YAN addition by the Index factor.

Typical Nitrogen Requirements of Different Yeasts

Yeast Variety	Alcohol % Tolerance	Temperature Range F	Fermentation Speed	mg N_2 per G CO_2	Nitrogen Needs	Suggested YAN Multiplier Index
UVA 43	18+	55 -95	Fast		Low	0.75
71-B	14	59 - 58	Moderate	0.9	Low	0.75
EC 1118	18	50 - 86	Fast	1.25	Low	1
K1 (V1116)	18	50 - 95	Fast	1.3	Low	1
Vin-13	16.5	54 - 61	Fast		Low	1.1
QA 23	16	59 - 90	Fast		Low	1.1
DV 10	18	50 - 95	Fast		Low	1.1
D-21	16	59 - 90	Moderate		Low	1.1
D-47	14	59 - 68	Moderate		Low	1.1
D-80	16	59 - 82	Moderate		Medium	1.2
D-254	16	54 - 82	Moderate		Medium	1.2
Syrah	16	59 - 90	Moderate		Medium	1.2
ICV GRE	15	59 - 82	Moderate		Medium	1.2
R-HST	15	50 -86	Moderate		Medium	1.2
RC 212	16	68 - 90	Moderate	1.55	High	1.25
BA11	16	50 - 77	Moderate		High	1.4
CY-3079	15	59 - 80	Moderate	1.75	High	1.4
BM-45	16	59 - 86	Moderate	1.8	High	1.4
L2056	16	59 - 82	Moderate		High	1.4
L2226	17	59 - 82	Fast		High	1.4
W-15	16	50 - 81	Moderate		High	1.4
VL-1	14.5	60 - 68	Moderate	2.1	High	1.7

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Yan additions should be based on the volume of liquid to be realized from the must. Various calculations are available but I find litres of juice per hundred pounds (L/h#) of must the easiest to work with and convert. Individual grape varieties will vary slightly depending on berry size. Experience with individual grapes will help you fine tune your formula.
Rule: Reds – wine yield after pressing = 28-30 L/h#. Whites – juice yield = 23-28 L/h# depending on type of handling and pressing.

Timing and Type of Nitrogen Additions
Yeast Hydration Nutrient
A yeast hydration nutrient such as Go-Ferm or Go-Ferm Protect (for high °Brix difficult conditions) co ntaining a balance of micro-nutrients and organic nitrogen that the yeast can readily absorb during hydration, gives them a healthier start for the task ahead. It can help the yeast replicate more and healthier cells.

Organic Nitrogen
Yeast assimilates **amino nitrogen (FAN)** in the lag and growth stage but has a preference for ammonia nitrogen if available because of its ease of uptake. Amino nitrogen is healthier and when taken up during the early yeast cell growth can be stored for later use. Winemakers are encouraged to let the fermentation start slowly at moderate temperatures with the existing nitrogen present. This forces the yeast to assimilate the FAN, assuming it has already consumed the ammonia nitrogen. Additions of amino nitrogen at this time can prove most beneficial for long term fermentation. It has been demonstrated by Lallemand that the quality of an organic nitrogen addition like **Fermaid-O** can be as effective as four times the YAN addition of inorganic ammonia nitrogen like DAP.

Inorganic Nitrogen
Ammonia nitrogen is an inorganic source even when available naturally from the grape that the yeast metabolizes preferentially to organic. An ammonia nitrogen addition is available from a number of products but its source is mainly diammonium phosphate or DAP. It is available in pure form or in nutrient products like **Fermaid-K**, **Thiazote** or **Superfood**. The amount of YAN from each product will vary. These products also are a complete source of vitamins and minerals vital for cell growth.
See reference sheet for YAN values for each product available http://vawa.net/YANTable.pdf
At the end of lag phase, when the yeast has consumed about 20-30 g/L of sugar or a drop of about S.G. .005 - .010, or perhaps 6-12 hours, a complete yeast nutrient addition such as **Fermaid-K** and or **Fermaid-O** is recommended. The dose is dependent on what is required. It may also be necessary to add DAP – an inorganic nitrogen form already present in Fermaid-K, to bring the total YAN up to a required level in cases where the initial YAN level was very low and the Brix is high.
Further nutrient additions are recommended at 1/3 sugar depletion, approx SG1.070. If large nitrogen additions are required, e.g., over 150mg/L, the dose should be split into three or more additions during the first half of fermentation**. As yeasts have difficulty assimilating nitrogen once fermentation has progressed passed 10-12 brix, or about SG 1.050-1.040 no further nitrogen additions should be made in the last 1/2- 1/3 of fermentation**. A product called **Nutrient Vit End** has been specially formulated for additions late in the fermentations with detoxifying factors (yeast hulls) and nutrient factors (inactivated yeasts) to prevent or help sluggish fermentations. It can also be added at the beginning of fermentation if a problem ferment is suspected. *We now understand the fundamental link between yeast assimilable nitrogen concentration (YAN) and wine aroma. Aroma is qualitatively impacted by juice nitrogen, both by too much and too little. Dr B. Zoecklein*

Vitamins
Let your nose tell you if you have a problem. Telltale signs of hydrogen sulphide (H_2S) the unmistakable smell of rotten egg, will indicate your ferment is struggling. It may be a nitrogen or vitamin deficiency or a temperature problem. **Pantothenic acid (vitamin B5)** is an important requirement for yeast to be able to assimilate nitrogen and helps shut down the formation of H_2S. It is also responsible for the formation of esters that give wines distinctive flavours. Acetic acid and glycerol concentrations are also higher in cases of musts deficient in pantothenate. B5 is present in Fermaid K but may be added separately to musts if nitrogen additions are not wanted.

Sigrid Gertsen-Briand at Lallemand provided info from a presentation by Dr. Charlie Edwards (Professor, Food Science, WSU) showing how effective very small additions of Pantothenic Acid (Vitamin B5) are in minimizing H2S production. Fermentation trials with Yan of 60 and 250mgN/L showed that a 250 micrograms dose (µg = 0.00025g) of Pantothenic Acid almost totally eliminated H2S in conjunction with even inadequate YAN of 60mgN/L A locally available 250 mg tablet of Vitamin B5 per 100L fermentor available from the pharmacy or health food stores is probably more than is necessary.

How to calculate the required YAN addition: Assessing fermentation difficulty based on Initial Must Brix and Initial YAN.
Initial Brix can dictate guidelines of how much YAN may be needed to complete a healthy fermentation depending on the yeast strain selection. High sugar must content can be hostile for yeast growth and cause sugar to alcohol conversion difficulty in the later part of fermentation resulting in sluggish or stuck fermentation with excessive residual sugar. Increased YAN is recommended for higher Brix musts.

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YAN Target Levels
Scott Laboratories Fermentation Handbook Suggested YAN Target Levels

Total YAN Guidelines	
Brix	**Total YAN Required**
21	200mgN/L
23	250mgN/L
25	300mgN/L
27	350mgN/L

Gusmer* advises this risk assessment range of nitrogen additions.

FERMENTATION RISK LEVELS	INITIAL YAN / BRIX LEVEL	Total High Brix YAN Target	Target YAN Addition Range
NO RISK	YAN > 250 (or 300 for Brix 25+)	300	0 - 50
Low Risk	YAN 200-250 (or 250-300 for Brix 25+)	300-350	0 - 150
Moderate Risk	YAN 150-200 (or 200-250 for Brix 25+)	300-350	50 - 200
High Risk	YAN 100-150 (or 150-200 for Brix 25+)	300-350	100 - 250
Very High Risk	YAN < 100 (< 150 for Brix 25+)	325	150 -250

How Much and When To Add
Lallemand Nutrient Addition Schedule

INITIAL MUST YAN	YEAST INOCULATION	AT END OF LAG PHASE	GROWTH PHASE
	ADDITIONS	ADDITIONS	ADDITIONS
LOW < 125mgN/L	Go-Ferm 30g/hL	Fermaid-O 25g/hL	at 1/3rd sugar depletion Fermaid-K 12.5g/hL or Fermaid-O 15g/hL
MEDIUM 125-225mgN/L	Go-Ferm 30g/hL	Fermaid-K 12.5g/hL or Fermaid-O 20g/hL	at 1/3rd sugar depletion Fermaid-K 12.5g/hL or Fermaid-O 20g/hL
HIGH >225mgN/L	Go-Ferm 30g/hL	Fermaid-O 20g/hL	Fermaid-O 20g/hL
High Brix Difficult Conditions	Increase to 35g/hl yeast inoculum and GoFermProtect 42g/hL	Fermaid-O 25g/hL	at 1/3rd sugar depletion Fermaid-K 25g/hL and Fermaid-O 15g/hL

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Possible YAN amounts with various dose levels

*F-O 4x

Lallemand Dose Levels		YAN mgN/L per Addition Rates				
Nutrient Type	Dose Rates			Dose Rates		
Nutrient Type	**Dose Rates**	**20g/hl**	**25g/hl**	**30g/hl**	**40g/hl**	**50h/hl**
GoFerm Protect	**20-40g/hl**	**6.6**	**7.5**	**10**	**13**	**13**
Fermaid-K	**20-40g/hl**	**20**	**25**	**30**	**40**	**50**
Fermaid-O	**20-40g/hl**	**10.6**	**13**	**16**	**21**	**21**
Vit-End	**30g/hl**	**5.5**	**7**	**8.5**	**11**	**11**
Total YAN		**43**	**52**	**64**	**85**	**95**
Fermaid-O 4x power*	**20-40g/hl**	**10.6x4=41**	**13x4=52**	**16x4=64**	**21x4=84**	**21x4=84**
Theoretical Total YAN		**73**	**91**	**112**	**148**	**158**
DAP Option		**40**	**50**	**60**	**80**	**100**

*Fermaid-O 4xpower - per Lallemand, Fermaid-O has 4 times the effectiveness as the inorganic nitrogen from DAP.

Does not exceed max. dose.

Exceeds recommended dose for thiamine

Fermaid-K dose levels of 50g/hL exceed TTB max dose levels of 25g/hl for thiamine.

Internet research has shown an average 6 oz glass of white or red table wine of 12.5% alcohol, contains approx 0.01% of daily thiamine (Vit B1) requirements based on a 2000 calories diet.

Fermentation Plan

Question - Most of our red wine ferments today are in the range of 25-27 Brix and YAN ranging from 125 to 175 mgN/L tested with the Formal method. What fermentation plan would you suggest? March 2011

Response Lallemand.

Given the conditions that you are working under I would recommend the following:

GoFerm Protect at rehydration because of the initial high sugars and resulting high alcohols
Fermaid O at 25g/hL at the beginning of fermentation with an aeration
Fermaid K at 25g/hL at ~1/3 through the alcohol fermentation with another aeration

Keep in mind that there are many factors interrelated and the choice of a lower nutrient demand yeast, good temperature management and proper rehydration and handling of the selected yeast will help under higher sugar conditions.

Fermentation Progress Chart

Plotting the progress of fermentation and temperature will help you track the rate and see potential problems. New World Winemaker has a downloadable 21 day chart in SG or Brix and temperature. www.newworldwinemaker.com

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Clem Joyce — Nutrients p. 6

Ask The Expert ***From Scott Laboratories Fermentation Handbook***

Nutrient Use on High Brix/Low YAN Juice

Dominique Delteil *Consultant*

Q. My juice has low YAN and high Brix. How can I best address the nutrient needs of the must for optimal yeast fermentation (red and white)?

A. From the perspective of the yeast, fermentation is like a long run with a long steep slope at the end. To achieve a goal a long distance runner must be in good shape to start with while having sufficient reserves at each point of the run to meet the challenges along the road. Common sense tells the runner it would be ill advised to run in the mid-day sun or in driving rain. Yeast are similar. Good fermentations are far more likely if the winemaker is proactive and takes common sense precautions. During my 20 years of fermentation R&D, I worked to develop systematic practices for winemakers to deal with difficult juice. Let me review the main ones

1. **Select a yeast that is "up to the task".** Strains like ICV D254, ICV D47, QA23 and BM 4x4, for example, were selected to support high Brix, low YAN juices and to bring longevity to the wine. The way the yeast is produced at Lallemand assures a good initial yeast physiology. Think of this as being akin to good training and diet for an athlete prior to a run. Improvements in yeast production like the YSEO process bring even better adaptation to difficult juices.

2. **Make sure the yeast has what it needs to succeed.**
The removal of 95% of the water during drying puts a real stress on active dry yeast The rehydration process is therefore a key to achieving best results. Recent research has shown that rehydration with a special inactivated yeast formulation (Goferm Protect, optimizes the rehydration and protects the yeast from excessive stress. Goferm Protect is useful in avoiding sulphur like off-odours and in building longevity. The addition of a complete yeast nutrient without ammonia right at the beginning of fermentation (Fermaid O), is also recommended in very difficult juice (Brix over 24 and/or YAN under 200 mg/L). Consider this to be like a well-balanced meal and a good warm-up before the run. By contrast, ammonia at that point for the yeast would be like a runner eating a candy bar. It would be assimilated quickly but the impacts during the run would be negative. There is another positive effect of the Goferm Protect and Fermaid-O on yeast cell structures. They also help to detoxify the juice as compounds harmful to the live yeast attach to the inactivated cells in Goferm Protect and Fermaid O instead.

3. **Provide your yeast with a balanced diet.** The complete nutrients in Goferm Protect (for rehydration) and Fermaid-O (in the juice) should supply your young yeast population with ample nutrients (including sterols, organic nitrogen, fatty acids and vitamins) to reach the first third of fermentation. This first third of fermentation is an absolutely key period to limit production of volatile acidity and sulphur-like off-odours. At the one third point the winemaker needs to be alert. The nutritional balance of the fermenting must will have evolved and struggling cells will begin throwing off toxic compounds (small-chain fatty acids). Think of this as similar to a runner potentially getting cramps. At this stage the winemaker needs to refuel with a complete nutrition package (sterols, organic nitrogen, fatty acid, vitamins) plus oxygen. The nutrient Fermaid-K was developed for exactly this purpose almost 30 years ago. It remains the best nutrient for refuelling yeast at this point. In addition, some ammonia (in the form of DAP) may also be used without negative effects. Wine yeasts are programmed such that if they are given enough protection, provided correct initial nutrition and are refuelled at one third of fermentation, there should be adequate reserves to complete a fermentation, so long as there are no other excessive negative fermentation conditions.

4. **Avoid stressing your yeast.** Long distance runners hate the mid-day sun and the driving rain. Yeast also like to avoid certain negative conditions.

High temperature is the worst. Some people think yeast is happy because it ferments quickly. Not so! Yeast is just altering its physiology, and burning its reserves. The logical consequences are early yeast die off and a stuck fermentation! High Brix and low YAN juices require that the winemaker manage fermentation temperature. When the juice is over 24°Brix I very strongly recommend fermentation te mperatures not to go over 24-26°C (75-78°F) as measured just under the cap. Colour stability, tannin quality and longevity are all improved in wines made from such juice when the fermentation temperatures are kept under control.

Yeast cells settled and packed at the bottom of the tank or the barrel can be a second problem. Keeping the entire yeast population in suspension is important. Barrel stirring or tank mixers are important aids to assure regular fermentations and avoid sulphur-like off odours. In reds, I recommend agitating the must and lees below the cap twice a day. For whites I recommend a little more care. Your first agitation can create a foam geyser!
Toxic compounds can originate from the juice itself or from stressed yeast.
When inactivated yeast products like Booster Blanc, Opti-WHITE, Booster Rouge or Opti-RED are used, one of their numerous positive effects is to help detoxify the juice. Similarly, the addition of Noblesse halfway through the fermentation will help manage contrary conditions by adsorbing short-chain fatty acids and other toxic compounds. Noblesse is the best inactivated yeast known to adsorb different undesirables such as ochratoxin, copper residues or off-sulphur compounds. When the winemaker has problems managing agitations well, I recommend adding some Noblesse during the second third of fermentation. This helps facilitate the remainder of the fermentation by detoxifying the fermenting must and reducing CO_2 pressure on the living yeast.

5. **Remember that your yeast has competition.** A runner needs to pay attention to the other runners in the race Yeast is no different. There are always risks that indigenous yeast and bacteria will compete for nutrients and will produce compounds that are toxic to your yeast There are three key points to managing these risks.
First, limit the presence of contaminants through good harvest and winery equipment sanitation good practices. This is obvious but should never ever be taken for granted.
Second, make sure that you use a strong yeast strain (from a physiological point of view) It needs to be up to the challenge of a particular fermentation You wouldn't send a sprinter to do a marathon. Make sure it is prepared by rehydrating properly with water and by using Goferm-Protect.
Third, give your yeast a "leg up" on the competition. Inoculate the must early with the recommended quantity. Early and adequate inoculation will limit the time available for contaminant growth.

Clem Joyce — Nutrients - concluded

Fermentation Management for High Brix Musts
From Scott Laboratories Fermentation Handbook

Our nutrient addition rates and timing schedules have been developed for 22°B must. Today, however, a common scenario is to pick grapes in excess of 25°B. This yields a higher alcohol level and creates a more difficult environment for the yeast to compensate for high Brix musts (>25°B), what can be done? Adjustments can be successfully accomplished in three ways:

Select a yeast strain with lower relative nitrogen demands coupled with higher alcohol tolerance (e g DV10, ICV D21, BO213 (Bayanus) or VIN 13) For more complete options, refer to the Yeast Quick Reference Chart.

Increase your yeast inoculation rate. If the must is 25-30°B the inoculation should be at least 35 g/ hL. This translates to $5x10^6$ yeast cells per mL Inoculate with an additional $1x10^6$ yeast cells/mL for each degree increase in Brix above 30° Higher inoculation levels will yield elevat ed initial viable cell counts. This will have a direct effect on the maximum cell density achieved at the end of the exponential growth phase. This higher cell density is needed to successfully convert all sugar to alcohol during the course of fermentation. When using a yeast rehydration nutrient, be sure to maintain a dose ratio of 1 part yeast to 1.25 parts nutrient.

An alternative to increasing inoculation rates or selecting another yeast is to add additional nutrients. In most musts (low or high sugar) a total of 150 mgN/L is a sufficient amount of nitrogen to carry the yeast through to the exponential growth phase. It is during the stationary phase when the yeast in high sugar conditions benefits from an additional boost of nitrogen. This will help to prevent sluggish fermentations. For this reason, in high sugar must (>25°B) we recommend you follow the same protocols as outlined above with two modifications. For YANC <300 mgN/L, add Fermaid K at 1/3 sugar depletion. For YANC <225 mgN/L, add Fermaid K and DAP **or** add Bioactiv and Thiazote PH at 1/3 sugar depletion.

Dominique Delteil suggests the following good fermentation management practices when dealing with high Brix musts (juice)

In reds:

Aeration or oxygen additions when the cap forms (usually when 15 g/L sugar are fermented) AND at 1/3 sugar depletion. Keep the fermentation temperatures under 25°C(77°F) in the initial days o f fermentation and keep peak fermentation temperatures throughout below 28°C(82°F)

Regular movement of the yeast during their death phase toward the end of fermentation

In whites:

Monitor the initial juice turbidity level (optimum between 80-100 NTU)

Aeration or oxygen addition as soon as the fermentation is active (usually when 15 g/L sugar are fermented) AND at 1/3 sugar depletion

Keep peak fermentation temperatures throughout below 20°C(68°F)

Regular movement of the yeast during their death phase toward the end of fermentation

When inorganic nitrogen additions are NOT desired, we recommend using an appropriate yeast rehydration nutrient when rehydrating yeast — either SIY 33 (Fermaid 2133), Fermaid O or Bioactiv can be added at 1/3 sugar depletion.

If an indigenous yeast fermentation is desired and a *Saccharomyces* yeast is not used, nutrient supplementation is highly important (K. Fugelsang, 1997). We recommend using DAP or Thiazote PH at the end of lag phase and Fermaid K at 1/3 sugar depletion.

Conclusions

It is vitally important to determine initial must YAN

Initial brix will play an important role in yeast selection, and YAN additions for a healthy and complete fermentation.

Select a yeast that is up to the job. There may be a fine difference between the desired yeast for style and character and one that is more able to complete fermentation.

Use a correctly rehydrated direct inoculation of active yeast at the recommended dosage and increase dose from standard 25g/hL to 35 g/hL in high Brix musts and avoid temperature shock during inoculation.

Use a yeast hydration nutrient at 1.25 times the yeast dose.

Remember the role of oxygen in the first one-third of fermentation

A fermentation chart to track your temperature and fermentation progress is highly beneficial.

Allow fermentation to start without nutrient addition or with minimal complex yeast nutrient supplement when YAN is very low.

Pay particular attention to moderate initial temperature to promote a steady fermentation avoiding heat spikes.

Be cognisant of the value of organic nitrogen nutrients with the addition of complex organic nutrients at lag phase rather than inorganic nitrogen like DAP

Let your nose guide you if trouble appears in the form of H_2S

White grape varieties such as Sauvignon Blanc that owe their fruity aromas to volatile thiols, may actually benefit from a slight initial H_2S.

Avoid adding any nitrogen nutrients in the last half of fermentation as the yeast has difficulty assimilating it.

Prayer is good.

Reference Sources

New World Winemaker **www.newworldwinemaker.com**

Virginia Tech- Dr. B.Zoecklein, Oenology Notes **http://www.vtwines.info/**

AWRI **http://www.awri.com.au/**

Lallemand **http://lallemandwine.com**

Scott Laboratories **www.scottlab.com**

Vancouver Amateur Winemakers **www.vawa.net**

Nanaimo Winemakers **www.nanaimowinemakers.org**

Great reference web site **http://winemaking.jackkeller.net/referenc.asp#enology**

2011 Belcarra Winemakers Report

Belcarra Wine Makers club was founded in 2003. Our base of operations is the village of Belcarra -- so you may ask where is Belcarra?

Well, Belcarra is a small village [about700 souls] located on the Indian Arm, just across from Deep Cove and directly north of Port Moody. It's basically a bedroom community.

The club started out with ten members and as of this year we have grown to 15. Our new member has an extensive background in chemistry and is indeed a welcome addition to the club. Ten of our members actually live in Belcarra. Most of us are retirees. At our recent AGM, we once again affirmed that we view limiting our size to a "*kitchen table*" club.

We had started out, just being an informal group with a common interest in making wine. Grape supplies were obtained via Spagnol's or George's. We, at the time used wine kits to make a second run. This resulted in some interesting products of questionable quality. Club member Walter Frith, in the course of his wine travels came across some members of the Vinovan club. One of their members, John Matkovich met with us, gave a presentation, convinced us to form an *official* wine club and join BCAWA. The rest is history.

Our initial use of wine kits is gone. Networking [thanks especially to BCAWA], offered alternative grape sources and we started to engage the "s*cience*" of making wine. As we progressed on this path, the quality of the final product has improved. The club in light of our short history has evolved; we now experiment with new methods and techniques. Having said that, we are once again trying our hand at second run---this time no wine kits! So far the initial results look promising.

In the recent few years, club members have won medals in competitions and two of our members have been successful at the national level.

During the wine season, we have mainly sourced grapes, [whole, crushed, or juice] from California, Washington and some very minor amounts from the Okanagan. In the past two seasons, we have found that the grapes from the Okanagan were of questionable quality and quantity was very limited.

We have continued with the practice of initial primary fermentation at one member's garage and then, individual members take their portion home, to do their finishing magic. The required work parties, not only facilitate work getting done, but also a time for socializing and sharing of information. As we all know there is no end to what you can learn about wine!

Thank to BCAWA, we have been introduced to the art of blending. This has added an extra challenge and reward for overall improvements to our wine.

Several times a year we have formal club meetings at member's homes. Usually these occur in conjunction with social events such as AGM [Jan/Feb], Summer BBQ, Fall Windup and just plain parties.

As we all know, making wine has its own rewards--good wine, sense of creativity, economic benefits -- and I feel the most important--the camaraderie with fellow wine makers.

Respectfully

Gerrit van Staalduinen,
Vice President, Belcarra Wine Makers,
February 17, 2011

John Schreiner's Blogspot

Wednesday April 6, 2011

Foxtrot Vineyards releases its 2008 Pinot Noir

Naramata Bench's tiny Foxtrot Vineyards this week has begun to release the fifth vintage of its Pinot Noir, one of the most coveted and expensive ($54.95) Pinot Noirs in the Okanagan.

Is it also the best? One of these years, someone with deep pockets will organize a blind tasting to deal with that question.

If it were up to me, we would line up the Stewart Family Reserve Pinot Noir from Quails' Gate.; the Platinum Pinot Noir from Cedar Creek; the Stripe Label Pinot Noir from Blue Mountain; one of the Kettle Valley Pinot Noirs; one of the Meyer Family Pinot Noirs; the new Pinot Noir from Howling Bluff and the new ones from La Frenz; and Foxtrot. For good measure, I might also find one from Road 13, the top one from Nk'Mip Cellars, one from Seven Stones. And finally, Burrowing Owl's Pinot Noir, just because your are not supposed to grow good Pinot Noir on Black Sage Road but Burrowing Owl doesn't know that.

It would be a spectacular tasting; and I have certainly forgotten a few other choice examples (there are several interesting Vancouver Island Pinots as well). The point is that Pinot Noir is emerging as a signature red varietal in British Columbia.

Foxtrot certainly ranks among the producers that have been raising the bar for this variety.

The winery is owned by Torsten and Kicki Allander. The wines are made by their son, Gustav, and Nadine Kinvig, Gustav's wife and a graduate of Lincoln University in New Zealand.

A former pulp and paper engineer, Torsten and his family retired to the Okanagan in 2002, buying a Naramata Bench property that included a house with a view and a vineyard that had been planted a decade earlier exclusively to the Dijon 115 clone of Pinot Noir. The vines are all growing on their own roots.

After selling his grapes for several vintages, Torsten decided to find out whether his little vineyard could generate a world-ranked Pinot Noir. He arranged to have the first two or three vintages made at the nearby Lake Breeze winery. He provided Lake Breeze with, among other things, the new French oak barrels he determined to be critical to making quality Pinot Noir. Several years, Foxtrot built its own cellar and brought its winemaking home.

All of the preceding vintages have received acclaim from wine critics and sommeliers, some of whom have noted the increasing finesse of the wines.

There is no magic here. The impeccable vineyard always carries a low crop, ensuring good flavour concentration and texture. The grapes are gently destemmed, with whole berries falling into the fermenters. The fermentation involves cultured yeasts. Torsten and Gustav have not been happy with trials they have done using wild yeast. The wine is made primarily with free run juice.

The barrel program is similar to what some of the great houses in Burgundy do. Foxtrot uses only new French oak, (Tronçais and Allier). The 2008 vintage was aged 16 months in barrel. However, this is by no means a wine where the oak stands out; the rich fruit flavours have assimilated the oak seamlessly.

Foxtrot Pinot Noir 2008 displays deep garnet hues and shows alluring aromas of cherries, plums, raspberries and spice. The fruit flavours carry through on the palate and on the long, long finish. The texture is the classic velvet of the ripe tannins that have become a hallmark of the Foxtrot style. The wine is at once powerful and elegant. 95.

A note to those who buy the wine: lay a few bottles away for two or three years at least. As delicious as the wine is now, it will be even better and more seductive with additional age.

News from Chilliwack Zymurgy Wine & Beer Making Club

It's hard to believe that an entire year has gone by since I last wrote for the Newsletter! It has been a busy one!

Last March, Zymurgy members participated in the annual Cooking with Wine. During the evening, all enjoyed very creative appetizers, main dishes and desserts prepared with wine as one ingredient and then served with an appropriate wine. Voting takes place for the favorite food and wine pairing in each category and a prize (a bottle of wine) is awarded to the winner. Pictured here are Greg & Corinne Graber, winners of the dessert category.

A trophy is awarded to the "overall" favorite entry. We have discovered that Chilliwack Zymurgy members are not only great winemakers but also FABULOUS cooks!

The next big event for Chilliwack Zymurgy was our Annual Club Crush. Members voted for a white wine this time and Viognier turned out to be the choice grapes. We were fortunate to have a warm, sunny day in late September for the event. What was unusual this past Crush was that a reporter and photographer from our local newspaper attended. As a result, an informative news article along with interesting photos appeared in the newspaper a week later.

Another highlight of the year was our Annual Christmas Party which is, again, a delight for the pallet with so many wonderful foods brought for the "potluck" dinner. This was the second year that we opted for donating to our local Salvation Army Christmas Hamper Program in place of a gift exchange between members. A donation of over $300 was made to the program.

As soon as the Holidays were over, preparations began for our Annual Competition which took place this year on February 19th. The committee was very pleased with the number of entries submitted for the Competition. Many medals and trophies were awarded to out-of-town entries with some Zymurgy members becoming first-time medal and trophy winners! We are forever grateful to all the judges who participate in our competition. Although attendance at the Dinner/Dance was down a bit this year, a great party was enjoyed by all who did attend.

We are very pleased to welcome two new members, Bob Booth and David Morgan to our ranks. Watch for their names to appear among the list of medal winners!

We are presently looking forward to our Cooking with Wine evening coming soon!

Submitted by: Mary-Susan Gagnon

Photos by Mary-Susan Gagnon

Book Review 1 by Sam Hauck

Burgundy and Its Wines
Nicholas Faith
Photography by Andy Katz
2004
Raincoast Books 144 pages

A recent post-Christmas trip to my local Chapters book store resulted in the purchase of a few wine books. The first I read was Burgundy and Its Wines. The book begins with an introduction by well-known wine authority, Robert Parker Jr.

The first chapter deals with the factors that make Burgundy a unique wine growing area – the geography and the geology, or as the French say, terroir. Burgundy is blessed with primarily kimmeridge clay and limestone soil, and predominantly easterly or south easterly facing vineyards. Further south, in Beaujolais, the soil is mainly granite based. It is believed that the Romans, or even the Greeks first started viniculture in the area, however, it was in the Middle Ages that Burgundy began to flourish. Benedictine monks established an abbey near Nuits-St.-Georges in 1098 and planted vines in the poor soil. The area hit its Golden Age in the middle 14th and 15th centuries.

The French Revolution, in 1789, took ownership of the vineyards out of the hands of the wealthy Dukes and various religious orders. It then became the custom for land to be divided among all the sons upon the death of a parent. This has resulted in modern day Burgundy resembling a patchwork quilt of many small vineyards with various owners. In the late 19th century, phylloxera devastated most of Europe, including Burgundy. Oddly enough, the two World Wars did not inflict heavy damage to the Burgundian vineyards. There are even stories of some battles being fought in such a way as to avoid damage to Premier or Grand Cru vineyards.

Burgundy has been argued by many to be the most perfect of all wines. It was the favourite of Louis XIV, Napolean, and Charles de Gaulle. Burgundy is relatively small, making up only about 6% of all the acerage in France. There are 53 villages that are allowed to use the name Burgundy. One of the things that makes things baffling for the consumer is the wide range in quality and the variability from year to year. From one area to another, Burgundy can vary from light lilac-blossom in colour to big heart wines that are firm, tough and tannic to smooth, aromatic and velvety. In decreasing order of quality, the designations are as follows: Grand Cru, Premier Cru, Village Wines, and finally Bourgogne Grand Ordinaire which makes up two-thirds of all wines.

Today, many winemakers are happy with straight forward fruity easy-drinking wines that are easy to produce anywhere and lack the superior qualities that are characteristic of fine Burgundies. There is also much run-of-the-mill white Burgundy (Chardonnay) being produced, though there is less Chardonnay planted in Burgundy than in Australia and even two-thirds less than what is grown in California. Of the great white Burgundies, two styles stand out – Corton, which is rich and full, and Meursault and Montrachet which are delicate and aromatic.

The Côte d' Or of Burgundy, is a thin strip of land that runs north-south and is usually less than one kilometer wide. Pinot Noir and Chardonnay are the two main grapes that are allowed to grown in the region along with some Aligoté and of course Gamay in Beaujolais. Pinot Noir has a reputation for being the most unforgiving black grape. It is not very productive, subject to diseases and does it's best with long, slow ripening.

During the nineteen eighties and nineties, Burgundy wines improved due to an infusion of new money from outside sources, which has been used to upgrade both vineyards and wineries. Many of the better-known names have changed hands. Louis Jadot was bought by its American importers, Drouhin is now owned by Japanese importers, Bollinger has purchased Chanson, and Bouchard Pére et Fils is now owned by Joseph Henriot. Only Louis Latour remains in the family.

Burgundy is indeed a conundrum. A land of tradition and complacency, even smugness, vs near perfect terroir. A land of contrasts and a complex history of royalty, clergy, revolutions and wars.

There are two potentially expensive consequences of reading this book. The fabulous photos by Andy Katz make you want to call your travel agent and book a trip so you can spend late summer and fall exploring the scenic villages and vineyards of the Côte d' Or. It also makes one curious enough to want to spend the money to sample the wines from Gevrey-Chambertin, Corton, Pommard, Volnay, Montrachet and Meursault.

Sam Hauck
The Wine Teacher

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Lamont Brooks WIGA Report (Feb. 2010)

The Wine Islands Growers Association (WIGA) Report

Winter Pruning in the Wine Islands

After a break from the vineyard for a few months, Wine Islands growers are tackling the biggest job of the dormant period: winter pruning. For the case of VSP (vertical shoot positioning), here is a typical vine before pruning:

The 10-12 vertical shoots which grew last summer and bore the 2010 clusters originate from a horizontal cane which had been a vertical shoot the year before; typically only shoots growing from 1-year old wood are fruit bearing. To reproduce this geometry the following year, we must choose one 2010 shoot from near the trunk to lay down horizontally and attach to the fruiting wire, and remove nearly everything else. The black plastic clips which position the vertical shoots are removed, the tendrils are yanked from the wires (a tough job in the case of Gewurz), heavy pruners are used to make the cuts, and most of the above-ground portion of the vine is taken away and piled up for burning. The reason we don't mulch the prunings and leave them in the vineyard is that powdery mildew spores may over-winter in the wood.

Continued on next page

WIGA Report p.2

This coming summer's shoots will grow from the buds where last summer's leaves originated, so one year's shoot spacing is dictated by the previous year's node spacing (distance between leaves). If growth was too rapid in 2010, there won't be enough 2011 shoots in the 4' space between vines to provide a reasonable crop load. The 2011 flower clusters, which will appear in the lower buds of the 2011 shoots in a few months, already exist microscopically within the fruiting cane buds, and were formed around mid-summer 2010.

This has been a description of "cane pruning" in its simplest form; one-sided, single-cane. There are many variations to pruning, and in fact the most common geometry in most wine-growing areas of the world is "spur pruning", with permanent horizontal cordons; this is what you'll see in most of the Okanagan or Napa for example. The following diagram, from *Wine in New Zealand* by Caroline Courtney, illustrates the differences between cane and spur pruning. In this case the cane pruning is two-sided, and two vertical shoots from the previous year are laid horizontally on each side. In spur pruning, last year's shoots are cut back to small 'spurs' containing about two buds. There are various pros and cons to each method, and WIGA growers are still experimenting to see which works best for specific varieties in our climate. One of the primary reasons spur pruning dominates in the much larger commercial vineyards elsewhere in the world is an economic one; it is much easier for untrained labour to spur prune (just cut the shoots back to two buds) than to cane prune, which involves more judgment (and risk of breaking the canes as they are bent from vertical to horizontal).

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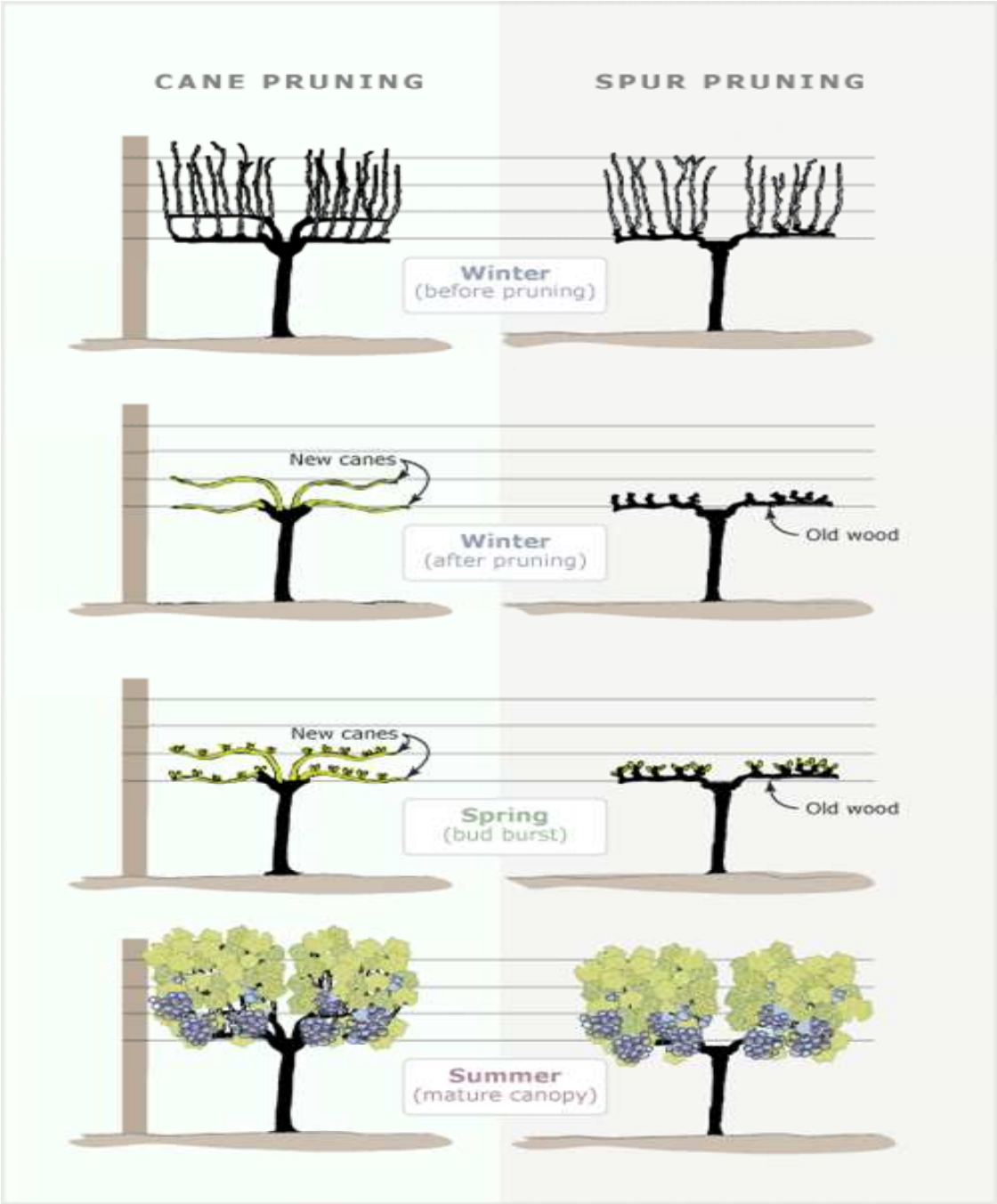
WIGA Report—conclusion



Lamont Brooks, Wine Islands Growers Association www.wiga.ca

Book Review 2 by Sam Hauck

Bordeaux and Its Wines
Robert Joseph
Photography by Max Alexander
2003
Raincoast Books 144 pages

Like the previously reviewed, Burgundy and Its Wines, this book begins with a forward by a respected wine writer. This time, it's Hugh Johnson. As Johnson so aptly puts it, Bordeaux is the world's best-known wine. The word itself refers to a city, a region and a wine; a wine that has a variety of styles and a variety of qualities, from mediocre to sublime. Bordeaux forces the wine drinker to appreciate terroir, for that is the prime reason behind the many differences found in this noble area. Many would argue, rightly so, that Bordeaux is the heart of the European wine industry.

Robert Johnson was exposed to wine at an early age at his parents' English country hotel. The friendly, usually French, waiters would offer him a small taste when decanting a bottle or when a customer left an unfinished bottle on the table. He soon grew to appreciate that where the wine came from determined the quality of the wine.

As with my earlier review on Burgundy, the photographs, this time by Max Alexander, contribute so much to the enjoyment of this book. The architecture of the ancient city, the markets, the stunning chateaux, and the fog shrouded vineyards and ripening grapes draw one into this heavenly world. What oenophile cannot avoid salivating looking at bottles such as: Haut Brion, Petrus, Lafite Rothschild, Mouton-Rothschild, Latour, Margeaux and other such world renowned wines?

The vineyards of Bordeaux offer great diversity; vineyards planted on flat land, gentle slopes and steep hillsides. Vineyards surrounded by forests, and vineyards bordering rivers. Vineyards planted on fine dusty brown soil, vineyards planted in chunky gravel. In addition, each town and village offers its own distinctive and unique charm, from St Georges-St.-Emilion, Yquem, and Lamarque to Pomerol, Pauillac. Bordeaux, the region and the wine, is clearly somewhere one could become quite happily lost.

Bordeaux is made up of over eight thousand chateaux, some of which are quite opulent, such as Margaux, while others more closely resemble cottages. The wine itself has a similar magnitude. Bordeaux is so ideally suited as a wine producing area because of several factors:

45° latitude – halfway between the North Pole and the equator
sheltered from cold north winds by forests
the moderating warmth of the Gulf Stream
The Gironde estuary and the two rivers, which flow into it – the Garonne in the south and the Dordogne in the north

Reading this book, I personally, was able to clarify the term, 'right" and "left" bank which one hears so often. St. Emilion and Pomerol are on the right bank (north) as you move downstream, while Médoc and Graves are on the left (south) side.

The history of this area goes back to the 5th century BCE. The region fell into foreign control in 1152 when Henry II married Eleanor of Aquitaine and it remained in British hands for many years. Consumption was often high in those days. When Edward II married in 1307, one million bottles were consumed.

Wine was shipped to many present day European countries, but it was during the 1600's that a specific wine – Chateau Haut Brion was marketed in England. Its success helped launch Lafite and Margaux. This led to a planting frenzy during the 17th century. We can thank the Dutch for Sauternes and Barsac and the other sweet white Bordeaux wines. It was their fondness for late harvest wines that allowed them to develop.

Unlike Burgundy, the clergy had little involvement in the vineyards of Bordeaux and so they were left relatively unscathed by the Revolution. Brokers and merchants controlled the flow of wine in Bordeaux. They kept records of what grapes and wines sold from year to year in order to determine the best vineyards and houses. In 1855, they made it permanent – five levels of quality. With a few exceptions, it has remained to this day.

Over the years, other regions were classified, some would say, in a rather haphazard manner that leaves many confused and it can be argued, does not accurately reflect the wines made throughout the region today.

Robert Johnson then gives a brief travelogue to the charming city of Bordeaux. To the west and north of the city, but still on the south side of the Gironde lies the Médoc, home to St. Julian, Pauillac, Chateaux Margaux, Latour, Lafite-Rothschild, and Mouton-Rothschild. Much of this low lying land was once marshland and it was in the 1600's that Dutch engineers were brought in to build drainage ditches to reclaim the land. Investors then established the wineries that are so well known today.

The post-war years saw a shift to whereby the chateaux began to bottle their own wine, rather than selling it off to merchants. Professeur Emile Peynaud helped the industry improve the overall quality of the wines by stressing hygiene and separating barrels of wine into two classes. No longer would lesser quality wine end up blended in to the Grand Vin.

The rest of the book is devoted to descriptions of each of the six major regions of Bordeaux. Joseph paints a picture in each of these regions. He describes the climate, soil and geography, the local history, the cathedrals and chateaux, the people and what makes the wine of each region unique. This is accompanied by the beautiful photography of Max Alexander. You cannot turn a page in this book without seeing one of his stunning photos.

For the home wine maker, the important information is found at the end of the section titled, "Practical Reference" where the various typical blends of grapes are given for each region. What blend of cabernet sauvignon, merlot and cabernet franc should aspiring "Bordeaux Style" wine makers use? Ultimately, just as in Bordeaux, it all depends on the grapes and their terroir.

Bordeaux is an enigma, but it is a mystery that attracts many. There are many joys to discover exploring this delightful, though perplexing, puzzle.

The book concludes with a "Directory of Recommended Chateaux". For each region, a list of chateaux is given (more than 80 in total) and a sampling of labels is included to help with recognition.

Sam Hauck
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