



SAUVIGNON BLANC WINE STYLE GUIDE AND OTHER THIOLIC WHITE CULTIVARS

For winemakers looking to optimize the aromas and flavors of Sauvignon blanc and other cultivars containing aromatic thiols.

STYLES OF SAUVIGNON BLANC

Sauvignon blanc is one of the most widely planted wine grapes in the world. Due to the diverse growing regions, viticultural practices, ripeness levels and winemaking inputs, Sauvignon blanc can be found in a variety of styles including mineral-focused, grassy, tropical and citrusy, and stone fruit-forward.

COMMON VARIETIES

- Chenin blanc
- Pinot blanc
- Grenache blanc
- Gewürztraminer
- Semillon
- Hybrids like Vidal blanc & Seyval blanc

UNIQUE WINEMAKING CONSIDERATIONS

- **Understanding thiols (organo-sulfur based compounds):** The classic characters of Sauvignon blanc can be attributed in part to thiols. Thiolic non-aromatic precursors are present in the grape and are released over the course of fermentation to become aromatic. Common aromatic thiols include:
 - **3MH:** 3MH contributes to classic Sauvignon blanc tropical and citrus notes. It is found in grape pulp and is revealed during fermentation by specific yeast strains.
 - **3MHA:** Yeast can also convert 3MH into its ester form, 3MHA, which gives fruitier flavors and aromas.
 - **4MMP:** 4MMP contributes to green and grassy flavors and aromas associated with cool-climate Sauvignon blanc. It is found in the grape skin and is maximized with skin contact.
- **Maximizing thiols:** While viticultural practices will dictate maximum thiol potential of a grape, winemaking practices like skin contact, yeast selection, nutrient selection, and fermentation temperature management will contribute to maximum thiol revelation.
- **Protecting aroma:**
 - **Use no to low H₂S yeast strains:** Sauvignon blanc is prone to developing volatile sulfur off-odors even when good fermentation practices are employed. No to low H₂S production yeast strains are listed in this guide and should be considered.
 - **Protect juice from oxidation:** oxidation degrades thiols.
- **Protein stabilization during fermentation:** Sauvignon blanc and Gewürztraminer are especially high in unstable proteins so fermenting on bentonite can help significantly reduce the amount needed post-fermentation.



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HOW TO USE THIS STYLE GUIDE

This guide provides process and product recommendations for the following styles of Sauvignon blanc-style wines: **mineral driven, ester-focused and fruity, tropical and citrus fruits, or grassy**. It is organized by winemaking stage starting with harvest and transportation and ending with finishing. There are often several products recommended which can be used on their own, together with other products, or not at all. For full information on each of the products, consult our website Scottlab.com.

WINEMAKING STAGES

Click on a winemaking stage to go to its section:

- Vineyard
- Malolactic Fermentation
- Harvest & Transport
- Racking & Post-Fermentation Microbial Stabilization
- Grape Reception And Pre-Fermentation Processes
- Fining & Finishing
- Rack To Fermentation Tank
- Stabilization
- Alcoholic Fermentation
- Finishing

Winemaking Stage	Suggested Action and Reasoning	Desired Wine Styles				
		Mineral Style	Fruity Style	Tropical or Citrus Style	Grassy Style	Avoiding H ₂ S and Other Negative Sulfur Compounds
Vineyard	Use LALVIGNE AROMA™ LALVIGNE AROMA is a foliar spray that increases glutathione levels in the grapes thereby protecting, elevating, and stabilizing aroma compounds	LALVIGNE AROMA is sprayed once at 5-50% veraison (5% is ideal) and again 7-14 days later (10-12 is ideal). Dosage is 1.2 kg/acre (2.7 lb/acre) per treatment.				
Harvest & Transport	Pick cold to maintain integrity of the grapes. Sort in the vineyard to remove compromised clusters Add SO₂ or GAIA™ the non-Saccharomyces yeast to help inhibit the growth of VA-causing native microflora.	<ul style="list-style-type: none"> • Sulfur Dioxide (SO₂) • For warm fruit, high pH fruit, low SO₂ winemaking, or if the grapes have to travel distances before processing consider an addition of Non-Saccharomyces yeast GAIA™ directly to grapes. 				



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Grape Reception And Pre-Fermentation Processes	<p>Add skin contact ENZYME directly to grapes pre-pressing.</p> <p>Skin contact enzymes help release varietal aromas in the grape skins, assist with pressing and clarification.</p> <p>OR:</p> <p>Go direct to press with minimal skin contact.</p>	<p>Recommended ENZYMES that can be added directly to grapes (choose one):</p> <ul style="list-style-type: none"> • LALLZYME CUVÉE BLANC™ at 20 g/ton • RAPIDASE® EXPRESSION AROMA at 20-25 g/ton • SCOTTZYME® CINN-FREE at 15-30 mL/ton <p>After a skin contact of 2-8 hours the grapes can be transferred to the next processing stage</p> <p>Ensure enzyme use is compatible with further processing steps and settling aids</p>				
	<p>PRESS: taste press fractions and make press cut decisions based on grape quality, juice chemistry and flavor.</p>					
	<p>Add settling ENZYME post-pressing</p> <p>Settling enzymes break down pulp giving cleaner and clearer juice with improved yields and easier post-fermentation processing.</p>	<p>Recommended ENZYMES that can be added to the clarification tank (choose one):</p> <ul style="list-style-type: none"> • RAPIDASE® CLEAR EXTREME at 1-4 g/hL (Hybrid cultivars) • SCOTTZYME® CINN-FREE at 1.3-1.6 mL/hL • SCOTTZYME® PEC5L at 1-1.3 mL/hL • SCOTTZYME® PEC5L at 1-1.3 mL/hL + SCOTTZYME® HC at 5.3-7.9 mL/hL (for Hybrid cultivars) <p>Ensure enzyme use is compatible with further processing steps and settling aids</p>				
	<p>Add YEAST DERIVATIVES or TANNINS to juice directly following pressing</p> <p>These products protect against oxidation and help maintain fruity aroma precursors by scavenging quinones and oxygen.</p>	<p>Recommended products added to juice post-pressing (multiple products may be selected):</p> <ul style="list-style-type: none"> • GLUTASTAR™ at 30 g/hL • INITIA™ at 7-25 g/hL • ESSENTIAL ANTIOXIDANT at 2-7 g/hL • SCOTT'TAN™ FT BLANC at 5-15 g/hL • SCOTT'TAN™ FT BLANC CITRUS at 2-15g/hL • SCOTT'TAN™ FT BLANC SOFT at 5-15 g/hL 				
<p>Add SETTLING and juice FINING AIDS directly to the settling tank</p> <p>Settling and fining aids reduce the solid content as well as remove unwanted compounds.</p>	<p>Recommended products added directly to the settling tank (multiple products may be selected):</p> <ul style="list-style-type: none"> • BENTOLACT S at 20-100 g/hL to treat oxidation and remove off-odors • FRESHPROTECT at 20-100 g/hL to removed oxidized, bitter and herbaceous notes • GRANUBENT PORE-TEC at 35-75 g/hL for pre-fermentation protein removal • NO[OX] at 30-80 g/hL to remove oxidized, bitter, herbaceous notes and moldy aromas. Non-animal, non-allergen alternative to casein • POLYCEL at 40-80 g/hL to remove bitterness and unwanted color • QI'UP XC at 3-10 g/hL for clarification via static settling or flotation 					



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Rack to Fermentation Tank	Manage solids content Managing solids removes undesirable components, controls hydrogen sulfide production and helps certain yeast with fruity ester production.	80–120 NTU's	60–100 NTU's	60–100 NTU'S	80–120 NTU's	60–100 NTU's
	Add NON-SACCHAROMYCES yeast Non-Saccharomyces yeast can enhance aromas and mouthfeel (see Harnessing the Unique Powers of Non-Saccharomyces Yeasts).	Recommended NON-SACCHAROMYCES yeast at 25 g/hL (choose one): <ul style="list-style-type: none"> • LEVEL² BIODIVA™ for fruit forward and round wines due to ester and arabinol (polyol) production • LEVEL² FLAVIA™ for fruit forward and spicy wines due to the release of bound varietal aromas 				
Alcoholic Fermentation	Add REHYDRATION NUTRIENT Rehydration nutrients supply essential vitamins and minerals helps secure fermentation, minimizes the risk of stuck fermentations, and off-aromas.	Recommended REHYDRATION NUTRIENT GO-FERM STEROL FLASH™ or GO-FERM PROTECT EVOLUTION™ at 30 g/hL when using standard yeast dose of 25 g/hL				
	Add fermentation YEAST Selecting and acclimating a known active dried wine yeast will allow you to manage your fermentation and drive wine style. (For more help see Scott Labs Yeast Choosing Guide).	Recommended YEAST at 25 g/hL (choose one):				
		<ul style="list-style-type: none"> • DV10™ • TS28 • W15™ • NBC™ 	<ul style="list-style-type: none"> • ALCHEMY I • CROSS EVOLUTION™ • EXOTICS NOVELLO 	<ul style="list-style-type: none"> • 4F9 • ALCHEMY II • ELIXIR™ • MSB™ • QA23™ • R2™ • VIN13 	<ul style="list-style-type: none"> • SAUVY™ • TS28 	<ul style="list-style-type: none"> • BE FRUITS™ • BE THIOLS™ • ICV OPALE 2.0™
	Manage fermentation temperature <i>Temperature is a driver of fermentation rate and yeast secondary metabolism (aroma)</i>	50-65°F	56-75°F	62-72°F	57-68°F	54-77°F
		Ensure fermentation temperature is within recommendations for the selected yeast strain.				

There's more **Alcoholic Fermentation Info** on the next page.





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Alcoholic Fermentation	A complete nutrition strategy should be adapted based on yeast strain, sugar level and starting YAN. Modern yeast nutrition strategies are used to secure fermentations and positively drive wine style.	Add FERMENTATION NUTRIENTS* at 2-3 °Brix drop	<ul style="list-style-type: none"> • FERMAID K™ at 0-50 g/hL 	<ul style="list-style-type: none"> • FERMAID O™ at 0-40 g/hL 	<ul style="list-style-type: none"> • STIMULA SAUVIGNON BLANC™ at 40 g/hL 	<ul style="list-style-type: none"> • STIMULA SAUVIGNON BLANC™ at 40 g/hL 	<ul style="list-style-type: none"> • STIMULA SAUVIGNON BLANC™ at 40 g/hL 					
		Add FERMENTATION NUTRIENTS* at 1/3 °Brix drop	<ul style="list-style-type: none"> • FERMAID O™ at 10-40 g/hL 	<ul style="list-style-type: none"> • STIMULA CHARDONNAY™ at 40g/hL 	<ul style="list-style-type: none"> • FERMAID O™ at 10-40 g/hL 	<ul style="list-style-type: none"> • FERMAID O™ at 10-40 g/hL 	<ul style="list-style-type: none"> • FERMAID O™ at 10-40 g/hL 					
	Add BENTONITE Fermenting on bentonite gets an early start on protein (heat) stabilization.		<ul style="list-style-type: none"> • Recommended fermentation BENTONITE: • FERMOBENT® PORE-TEC at 100-200 g/hL during the mid to late stages of fermentation. 									
	Add INACTIVATED YEAST Inactivated yeast from specific strains of wine yeast can be used to build and stabilize wine mouthfeel, aromas and balance.		<ul style="list-style-type: none"> • Recommended INACTIVATED YEAST (choose one): • OPTI-WHITE™ at 25-50g/hL to promote roundness, smoothness and protect aromas • NOBLESSE™ at 30 g/hL to highlight fruit, contribute to balance, sweetness and integration (especially high alcohol or high acid wines) 									
Malolactic Fermentation	Add MALOLACTIC BACTERIA (if MLF is desired) Choose a strain that is complimentary to the wine chemistry and that will promote your desired wine style. (For more help, see Scott Labs Malolactic Bacteria Choosing Guide).		Recommended MALOLACTIC BACTERIA at 1g/hL (choose one): <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:16.6%;"> <ul style="list-style-type: none"> • No MLF • O-MEGA™ or MBR31® added after ALF. Partial or full MLF can be conducted. </td> <td style="width:16.6%;"> <ul style="list-style-type: none"> • No MLF • BETA CO-INOC™ added simultaneously with yeast. </td> <td style="width:16.6%;"> <ul style="list-style-type: none"> • No MLF • VP41™ or MALOTABS™ added after ALF. Partial or full MLF can be conducted. </td> <td style="width:16.6%;"> <ul style="list-style-type: none"> • No MLF • O-MEGA™ added after ALF. Partial or full MLF can be conducted. </td> <td style="width:16.6%;">Any strain compatible with wine chemistry and style.</td> </tr> </table>					<ul style="list-style-type: none"> • No MLF • O-MEGA™ or MBR31® added after ALF. Partial or full MLF can be conducted. 	<ul style="list-style-type: none"> • No MLF • BETA CO-INOC™ added simultaneously with yeast. 	<ul style="list-style-type: none"> • No MLF • VP41™ or MALOTABS™ added after ALF. Partial or full MLF can be conducted. 	<ul style="list-style-type: none"> • No MLF • O-MEGA™ added after ALF. Partial or full MLF can be conducted. 	Any strain compatible with wine chemistry and style.
<ul style="list-style-type: none"> • No MLF • O-MEGA™ or MBR31® added after ALF. Partial or full MLF can be conducted. 	<ul style="list-style-type: none"> • No MLF • BETA CO-INOC™ added simultaneously with yeast. 	<ul style="list-style-type: none"> • No MLF • VP41™ or MALOTABS™ added after ALF. Partial or full MLF can be conducted. 	<ul style="list-style-type: none"> • No MLF • O-MEGA™ added after ALF. Partial or full MLF can be conducted. 	Any strain compatible with wine chemistry and style.								

*Additional nutrition may be needed depending on the starting sugar, original YAN and yeast needs.



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Racking & Post-Fermentation Microbial Stabilization	<p>Add MICROBIAL CONTROL AGENTS</p> <p>Microbial contamination can negatively impact mouthfeel, aromas and flavors. It is imperative to protect from spoilage.</p>	<p>Recommended MICROBIAL CONTROL agents (multiple products may be used):</p> <ul style="list-style-type: none"> • NO BRETT INSIDE™ at 4-8 g/hL • BACTILESS™ at 20-50 g/hL • Lysozyme at 25-50 g/hL • Sulfur dioxide depending on pH 				
	<p>Add ENZYMES</p> <p>Concentrated pectinase enzymes, or pectinase enzymes with β-glycosidase or β-glucanase side activities can enhance clarity, filterability and release bound aromatic compounds. (For more help, see Scott Labs Enzyme Choosing Guide).</p>	<p>Recommended ENZYMES (bench trials should be conducted to determine dose):</p> <ul style="list-style-type: none"> • LALLZYME MMX™ at 1-3 g/hL to induce yeast autolysis and release of mannoproteins for rounder, smoother wines with improved filterability • RAPIDASE® REVELATION AROMA at 1-2 g/hL to release bound aroma compounds • SCOTTZYME® KS at 5.3-7.9 mL/hL to help with clarity and filterability 				
	<p>Add FINING AIDS</p> <p>Fining aids help clarify wine and improve filterability. They can also improve wine aroma, flavor, and mouthfeel by removing astringent and bitter characters and revealing muted aromas. (For more help, see Scott Labs Fining & Stability Choosing Guide).</p>	<p>Recommended FINING AIDS (bench trials should be conducted to determine dose):</p> <ul style="list-style-type: none"> • BENTOLACT S at 100-200 g/hL to treat oxidation and remove off-odors • POTASSIUM CASEINATE at 20-100 g/hL to removed oxidized compounds, reveal muted aromas and freshen wine, especially if aged in oak • CRISTALLINE PLUS at 1.5-3 g/hL to clarify, add brilliance and improve filterability • FRESHPROTECT at 20-100 g/hL to removed oxidized, bitter and herbaceous notes • POLYCACEL at 15-30 g/hL to reduce bitterness and reveal muted aromas • NO[OX] at 20-60 g/hL to remove oxidized, bitter and herbaceous notes (non-animal, non-allergen alternative to casein) • POLYCEL at 15-50 g/hL to remove bitterness and unwanted color • QI'UP XC at 3-10 g/hL for clarification 				
Fining & Finishing	<p>Add TANNINS</p> <p>Tannins can be used during aging and cellaring to add structure, fill in mid-palate and positively affect aromas.</p>	<p>Recommended TANNINS (bench trials should be conducted to determine dose):</p> <p>Consider using Scott Labs' Finishing Kit for bench trials.</p> <ul style="list-style-type: none"> • ESSENTIAL ANTIOXIDANT at 2-5 g/hL • SCOTT'TAN™ FT BLANC at 5-15 g/hL • SCOTT'TAN™ FT BLANC CITRUS at 5-15 g/hL • SCOTT'TAN™ FT BLANC SOFT at 5-15 g/hL • SCOTT'TAN™ RADIANCE at 1-5 g/hL 				



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Stabilization & Finishing	<p>Add BENTONITE, STABILIZATION AIDS, FINISHING AGENTS.</p> <p>The main objective of this step is to ensure wines do not present a visual flaw (protein or crystals) if subjected to temperature extremes. These products can also add volume, mid-palate weight and mask bitterness.</p> <p>Add FINISHING AGENTS</p> <p>Tannins and finishing aids that can be added 48 hours before bottling to confer colloidal stability, add structure, volume, mid-palate weight, and impact aromas and flavors.</p>	<p>Recommended products (bench trials should be conducted to determine dose):</p> <p>Protein Stabilization:</p> <ul style="list-style-type: none"> • BLANCOBENT UF can be used in conjunction with crossflow filtration, check with crossflow manufacturer for compatibility. • GRANUBENT PORE-TEC <p>Colloidal Stabilization:</p> <ul style="list-style-type: none"> • CLARISTAR® - There are recommended methods that you should use with CLARISTAR and we suggest giving us a call to discuss. <p>Finishing Agents: (These products can be added up to 48 hours prior to bottling)</p> <ul style="list-style-type: none"> • FLASHGUM R LIQUIDE at 40-120 mL/hL • ULTIMA SOFT at 15-30 g/hL • FINAL TOUCH TONIC® at 20-40 mL/hL • FINAL TOUCH POP® at 20-40 mL/hL 				