Catalogue of selected wine grape varieties and clones
November 2009

In 2004, a long term distribution agreement was signed between the **Yalumba Nursery** and **ENTAV-INRA®** which has facilitated the supply of authentic French clones from the only certified organization of its nature in France.

Quality control is fundamental to the ENTAV-INRA® brand, which is represented by key nurseries in many of the major wine growing regions throughout the world. The ENTAV-INRA® trademark specifies origin, authenticity, sanitary quality and genetic value of clonal selection. Detailed disclosure of each quality measure is critical information to ensure protection against counterfeit products.

The clones selected and produced in the last 40 years by ENTAV-INRA® constitute over 90% of current plantations in France. During the long development phase required in the establishment of new clonal material ENTAV-INRA® have produced over 17,500 individual clones for assessment, with many selected for premium wine production. Some of the more well known clones originally selected and established by ENTAV-INRA® include Pinot Noir 777 and Chardonnay 76 and 95.

The information in this publication has been adapted from „*The Catalogue Selected Wine Grape Varieties and Clones Cultivated in France'*. Eds. Boidron, R. et al. Ministry of Ag. Fisheries and Food. pp 192-193.

Clone Descriptors

For the ENTAV clones the following notes are highly relevant and relate to the description of performance.*

Fertility: Ratio between the number of clusters and the number of buds left after pruning. Superior, medium and inferior are terms relating to the average of the whole population of the clones of the studied variety.

Bunch Weight: It is indicated in comparison to the median weight of the whole population of the clones.

Level of Production and Production Potential Group: Results from the two previous components (fertility and bunch weight). Clones are arranged in production potential groups. Each group includes clones with roughly the same level of production.

> **Group A:** Weakly productive clones, but close to or slightly inferior to the average. Generally these clones permit to obtain wines of quality within the type of the variety and representative of the expression of the soil
>
> **Group B**: Fairly high to high production potential. According to site conditions and cultivation methods, the clones are productive and vigorous. Control of yields gives particularly high quality wines.
>
> **Group C:** Highly to very highly productive clones. Yield is insufficiently controlled; hence these clones produce neutral and common wines.
>
> **Group D:** According to specific condition, production and behaviour often change. These clones are recommended when their behaviour is well known under these special conditions.

Sugar content: sugar content is measured at the time of full maturity, in comparison with the average of the other clones in the same situation.

*from „*The Catalogue Selected Wine Grape Varieties and Clones Cultivated in France'*. Eds. Boidron, R. et al. Ministry of Ag. Fisheries and Food. pp 192-193.

Cabernet Sauvignon

ENTAV-INRA® Nº 338

Available exclusively from Yalumba Nursery in 2011

Imported by Yalumba in 2004 and released from quarantine in 2006, this clone is anticipated to be available in 2011. According to French data, this clone originates in Gironde. It has medium fertility, medium to superior bunch weight and medium berry size. The production potential is fairly high to high (Group B), and according to site conditions and cultivation methods, the clone is productive and vigorous. Control of yields gives particularly high quality wines. The sugar content is considered superior to medium, total acidity and anthocyanin content medium, and total polyphenols medium to high.

This clone has the ability to produce well balanced, aromatic bodied wines with keeping qualities, and within the type of the variety. This is a recommended clone for quality in France, and can be planted in association with other clones. It is also performing well in California.

Summary

Viticultural characteristics		**Composition**	
Fertility *	Medium	**Sugar content**	Medium
Bunch size	Medium to Higher	**Total acidity**	Medium
Berry size	Medium	**Total polyphenols**	Medium to Higher
Production potential	Medium (B)	**Anthocyanin content**	Medium

Cabernet Sauvignon

ENTAV-INRA® Nº 412

Available exclusively from Yalumba Nursery in 2013

Imported by Yalumba in 2006 and released from quarantine in 2008, this clone is anticipated to be available in 2013. According to French data, this clone originates in Gironde, and is an earlier maturing clone. In experimentation carried out in Languedoc and Bordeaux, this clone has medium to lower fertility, bunch and berry weights. It has shown a low production potential, high sugar content, medium acidity, and medium to superior anthocyanin and polyphenolic content.

Wines are appreciated due to their balance, structure and tannins with and their very good ageing potential

Summary

Viticultural characteristics		**Composition**	
Fertility	Medium to Lower	**Sugar content**	Higher
Bunch size	Medium to Lower	**Total acidity**	Medium
Berry size	Medium to Lower	**Total polyphenols**	Medium to Higher
Production potential	Lower (A)	**Anthocyanin content**	Medium to Higher

Table 1. Wine Analysis for 2003 vintage from trial undertaken at Grand Parc Estate, Bordeaux

ENTAV-INRA® Nº	**Alcohol** (%vol.)	**Total Acidity** (g/l H2SO4)	**pH**	**Total Polyphenols**	**Anthocyanin content** (mg/l)
191	12.9	3.1	3.9	53	438
337	13.2	3.1	3.92	56	464
410	12.7	3.1	3.92	49	391
411	12.9	3.1	3.92	48	377
412	**13.4**	**3.1**	**3.97**	**60**	**453**
average	**13.02**	**3.1**	**3.926**	**53.2**	**424.6**

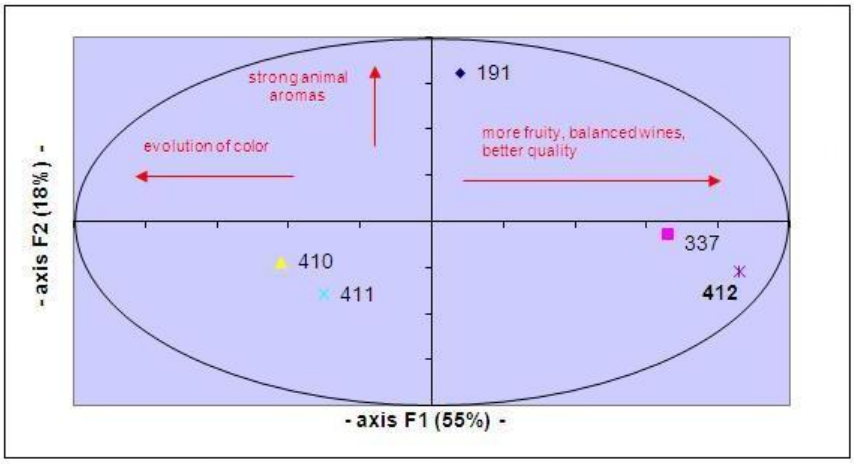


Figure 1. Wine quality assessment for 2003 vintage from trial undertaken at Grand Parc Estate, Bordeaux

As can be seen in table 1 and figure 1, clone 412 has similar final wine composition and quality characteristics to ENTAV-INRA® Nº 337 which is considered has been considered the reference clone in Bordeaux.

Merlot

ENTAV-INRA® Nº 181

Available exclusively from Yalumba Nursery in 2011

Imported by Yalumba in 2004 and released from quarantine in 2006, this clone is anticipated to be available in 2011. According to French data, this clone originates form Gironde. It has a slightly drooping growth habit and is thus very dependent on trellis management. This growth habit is not as erect as many other clones. As can be seen in table it is a lower yielding clone that produces many small bunches. Its overall production potential is low to medium.

This clone is a highly regarded in France and the benchmark clone in Canada. It is one of the most widely propagated clones in Europe, producing typical wines that are fruity, coloured, supple, with enough tannins for ageing.

Summary

Viticultural characteristics		**Composition**	
Fertility *	Medium to High	**Sugar content**	Medium to High
Bunch size	Inferior	**Total acidity**	Medium
Berry size	Low to Medium	**Total polyphenols**	High
Production potential	Low to Medium (A)	**Anthocyanin content**	Medium

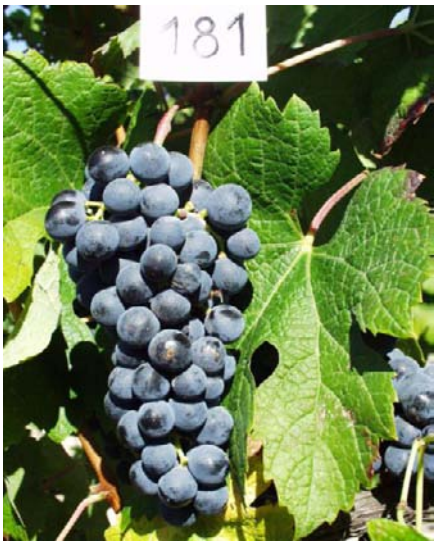


Table 2 Viticultural results over 5 years from trial plot in A.O.C. Margaux

ENTAV-INRA® Nº	**Yield per vine (kg)**	**Bunch Wt. (g)**	**Bunch No.**	**Sugar content (g/l)**	**Anthocyanin content (mg/l)**
181	1.59b	186b	8.5	207	191
343	1.73ab	214a	8.2	208	199
347	1.81ab	213a	8.4	208	194
348	1.95a	225a	8.5	207	198
Average	**1.77**	**209.5**	**8.4**	**207.5**	**195.5**

Values with the same letter afterwards are not significantly different

Merlot

ENTAV-INRA® Nº 343

Available exclusively from Yalumba Nursery in 2011

Imported by Yalumba in 2004 and released from quarantine in 2006, this clone is anticipated to be available in 2011. According to French data, this clone originates from Gironde. It has medium fertility, moderate yield and medium to inferior bunch weight. The production potential is medium to low with superior sugar content.

This clone is a qualitative clone with viticultural and oenological characteristics similar to ENTAV-INRA® Nº 181. Wines are typical, fruity, supple and coloured, with enough tannins for ageing. Wines have keeping qualities. This is a highly regarded clone in France.

Summary

Viticultural characteristics		**Composition**	
Fertility	Medium to Low	**Sugar content**	Medium to High
Bunch size	Medium	**Total acidity**	Medium
Berry size	Medium	**Total polyphenols**	Medium to High
Production potential	Medium to Low (A)	**Anthocyanin content**	Medium to High

Shiraz

ENTAV-INRA® Nº 470

Available exclusively from Yalumba Nursery in 2013

This clone was imported in 2006 and released from quarantine in 2008 and is anticipated to be available for release in 2013. This clone has very low production potential, the lowest of the certified ENTAV Shiraz clones (see figure 2). It has very low fertility (much less fertile than other clones) and low bunch size and low to medium berry size and has loose structured bunches. It produces a high sugar content, has high T.A., high total poylphenols and a high anthocyanin content.

The wines made from this clone have very good ageing potential and have consistently outranked the other ENTAV-INRA® Nº selections in terms of aromatic intensity, aromatic finesse, structure, tannin, quality, volume/thickness, and length (see table 3).

Summary

Viticultural characteristics		**Composition**	
Fertility *	Very low	**Sugar content**	High
Cluster size	Lower	**Total acidity**	Slightly higher
Berry size	Low to medium	**Total polyphenols**	High
Production potential	Very low (A)	**Anthocyanin content**	High

Table 3. Results from enological assessment of 1997 vintage by 12 judges. Factors graded from 1-10, 10 being highest and 1 lowest

ENTAV-INRA® Nº	**99**	**174**	**470**	**471**	**877**
Aromatic intensity	4.69	4.92	**5.53**	5.61	**6.23**
Aromatic fineness	4.76	4.92	**5.46**	4.92	**5.61**
Structure in mouth	5.23	5.76	**6.07**	6.15	**6.5**
Tannin quality	5.3	5.69	**6.23**	6.15	**6.46**
Volume/ Thickness	5.23	5.69	**6.61**	6.15	**6.76**
Length	4.84	5.61	**6.46**	5.69	**6.84**
Overall grade	**4.94**	**5.46**	**6.61**	**5.84**	**6.76**

Note: Overall grade illustrates general appreciation of the clone but is not the sum nor the average of factors

Shiraz

ENTAV-INRA® Nº 877

Available exclusively from Yalumba Nursery in 2014

This clone was imported in 2007 and released from quarantine in 2009 and is anticipated to be available for release in 2014. This clone has a very low to low production potential driven by low fertility, bunch size and berry size and produces loose clustered bunches. This clone was 2nd lowest yielding of the certified ENTAV Shiraz collection. ENTAV-INRA® Nº 877 has high sugar content, medium to high total acidity and high polyphenolic and anthocyanin production.

The wines made from this clone have very good ageing potential and have consistently outranked the other ENTAV selections in terms of aromatic intensity, aromatic finesse, structure, tannin, quality, volume/thickness, and length (see table 3).

Summary

Viticultural characteristics		Composition	
Fertility	Low	**Sugar content**	High
Bunch size	Low	**Total acidity**	Medium to slightly high
Berry size	Low	**Total polyphenols**	High
Production potential	Very low to low (A)	**Anthocyanin content**	High

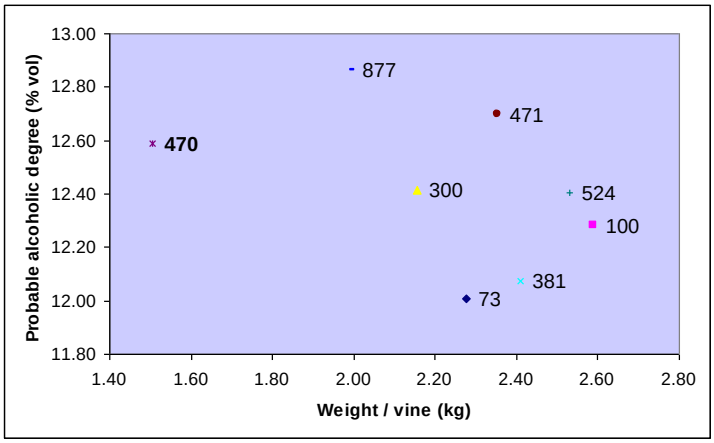


Figure 2. 10 year average of various ENTAV clones grafted to 140 Ruggeri

Pinot Noir

ENTAV-INRA® Nº 667

Available exclusively from Yalumba Nursery in 2013

This clone was imported by Yalumba imported in 2006 and released from quarantine in 2008 and will be available in 2013. This clone originates from Côte-d'Or. It is mainly used for still wines, and is considered a quality clone with medium production potential (similar to ENTAV-INRA® Nº 114 and 115 see table 4) and good maturity. It has medium bunch and berry size and medium fertility. It produces medium acidity levels and medium total polyphenols and anthocyanins.

Wines are often well marked, producing fine elegant flavours (red fruits), sweet tannins with good ageing potential. For diversity, this clone may be successfully associated with clone 115.

Summary

Viticultural characteristics		**Composition**	
Fertility	Medium	**Sugar content**	Medium to Higher
Bunch size	Medium	**Total acidity**	Medium
Berry size	Medium	**Total polyphenols**	Medium
Production potential	Medium (B)	**Anthocyanin content**	Medium

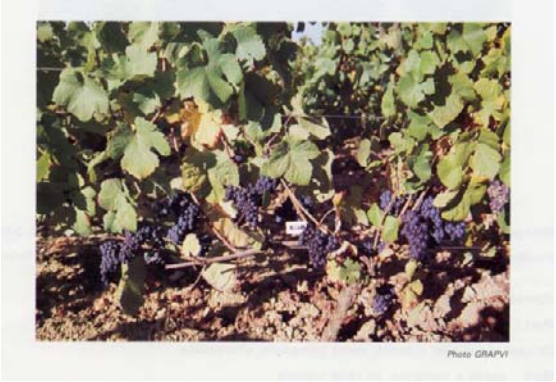


Table 4. Viticultural results from 5 year trial in AOC Bourgogne

ENTAV-INRA® Nº	**Yield/vine (kg)**	**Bunch No.**	**Bunch wt (g)**	**100 Berry wt (g)**	**Prob Alchol degree (%vol)**
114	1.65 de	15.35	107.7 c	153.3 ab	10.12 bc
115	1.68 de	14.87	111.5 c	146.9 ab	9.95 c
236	2.37 a	16.26	145.7a	147.8 ab	9.29 e
375	2.10 abc	15.9	132.8 ab	155.3 ab	9.70 d
386	1.96 abcd	16.1	121.7 bc	155.8 ab	9.25 e
667	**1.74 de**	**15.44**	**112.1 c**	**154.2 ab**	**10.02 bc**
828	**1.70 de**	**15.31**	**110.1 c**	**141.2 b**	**10.46 b**
943	**1.34 e**	**15.63**	**85.6 d**	**142.6 ab**	**10.91 a**
Average	**1.82**	**15.61**	**115.9**	**149.6**	**9.96**

Values with the same letter afterwards are not significantly different

Pinot Noir

ENTAV-INRA® Nº 828

Available exclusively from Yalumba Nursery in 2015

This clone was imported by Yalumba in 2008 and will be released in 2010. It will be available for commercial release in 2015. This clone originates from Côte-d'Or and is mainly used for still wines. It is appreciated for its lower production potential, sugar content and higher polyphenolic content. It has smaller and fewer bunches, and the smallest berry size of the certified ENTAV selection (see table 4).

Wines are often well marked, balanced, aromatic (intense and fruity), round and full. Moreover, it can age a long time. For high quality production, this clone may benefit from blending with clone ENTAV-INRA® Nº 777.

Summary

Viticultural characteristics		**Composition**	
Fertility	Medium	**Sugar content**	Higher
Bunch size	Lower to Medium	**Total acidity**	Medium
Berry size	Medium to Lower	**Total polyphenols**	Medium to Higher
Production potential	Lower to Medium (A)	**Anthocyanin content**	Medium to Higher

Pinot Noir

ENTAV-INRA® Nº 943

Available exclusively from Yalumba Nursery in 2015

This clone was imported by Yalumba in 2007 and released from quarantine in 2009 and will be commercially available in 2015. This clone originates from Côte-d'Or and has a slightly dropping attitude. As can be seen in table 4 this clone produces significantly smaller clusters compared with the other certified ENTAV-INRA® selections and the lowest overall yields. Sugar content is also significantly higher than the other certified clones at harvest. With its low yielding potential and high sugar content, this clone would be particularly well-suited to cool climate viticultural regions

Wines are well marked complex, balanced, long but sometimes with untypical aromas. Tannins are also sometimes too supple and velvet. It is recommended to blend with others.

Summary

Viticultural characteristics		**Composition**	
Fertility *	Medium	**Sugar content**	Higher
Bunch size	Lower	**Total acidity**	Medium to Lower
Berry size	Medium to Lower	**Total polyphenols**	Medium to Higher
Production potential	Inferior (A)	**Anthocyanin content**	Medium to Higher

Tempranillo

ENTAV-INRA® Nº 770

Available exclusively from Yalumba Nursery in 2015

Imported by Yalumba in 2007 and released from quarantine in 2009, this clone is anticipated to be available in 2014. According to French data, this clone originated in Rioja, Spain. It has medium or superior fertility, medium bunch weight and a fairly high to high production potential.

According to site conditions and cultivation methods, this clone is productive and vigorous. Control of yields gives particularly high quality wines. Sugar content is superior.

Summary

Viticultural characteristics		**Composition**	
Vigour	Medium	**Sugar content**	Higher
Fertility	Medium to Higher	**Total acidity**	Higher
Bunch size	Medium		
Production potential	Group B		

Note: see ITACYL brochure for information on 2 additional clones of Tempranillo

Tempranillo

ENTAV-INRA® Nº 776
Available exclusively from Yalumba Nursery in 2013

Imported by Yalumba in 2007 and released from quarantine in 2009, this clone is anticipated to be available in 2013. According to French data, this clone originated in Rioja, Spain. It has medium or inferior fertility, medium bunch weight and a fairly high to high production potential.

According to site conditions and cultivation methods, this clone is productive and vigorous. Control of yields gives particularly high quality wines. Sugar content is superior. It is reported to sometimes have irregular production.

Summary

Viticultural characteristics		**Composition**	
Fertility	Medium to Lower	**Sugar content**	Higher
Bunch size	Medium		
Production potential	Group B		

Note: see ITACYL brochure for information on 2 additional clones of Tempranillo

Chardonnay

ENTAV-INRA® Nº 548

Available exclusively from Yalumba Nursery in 2011

Imported by Yalumba in 2004 and released from quarantine in 2006, this clone is anticipated to be available in 2011. It originates from Saône-et-Loire, and has an early ripening (reported to be 1 week earlier than ENTAV-INRA® Nº 95). It has small loose bunches (low to medium fertility and lower bunch weight compared to the average) and low production (lower than clones ENTAV-INRA® Nº 76, 95, 96, 277 see figure). Sugar potential is high and so this clone may be used in cool climate regions where the full grape maturity is difficult to reach. In favourable conditions, it is recommended to control the rate of the ripening of grapes because harvesting with over-maturity can produce too heavy wines.

It produces aromatic, complex, well balanced, full-bodied wines with good quality and aromas that are within the type of the variety and representative of the expression of the soil. They have good concentration and ageing potential if yield is controlled.

Summary

Viticultural characteristics		**Composition**	
Vigor	Medium	**Sugar content**	Higher
Fertility	Medium to lower	**Total acidity**	Medium to Higher
Bunch size	Lower		
Berry size	Medium		
Production potential	Lower (A)		

Chardonnay

ENTAV-INRA® Nº 809

Available exclusively from Yalumba Nursery in 2011

Imported by Yalumba in 2004 and released from quarantine in 2006, this clone is anticipated to be available in 2011. Originating from Saône-et-Loire, it has an inferior level of production see figure 3 (due to much lower bunch weight compared to the average), medium to superior fertility, and sugar content superior to average. According to site conditions and cultivation methods, this clone is productive and vigorous. Control of yields gives particularly high quality wines. It seems to be slightly more sensitive to botrytis than other clones.

Wines obtained have a fine "muscat" taste, both well pronounced and balanced. This clone imparts lifted floral characters to the wine. Wines have been judged well for olfactory and tasting qualities: aromas, volume and length in mouth (table 5). It was „untypical' of the variety due to the „muscat' taste. It is recommended to use this clone in limited blends depending on the intensity of muscat aroma sought.

Summary

Viticultural characteristics		**Composition**	
Vigor	Medium	**Sugar content**	Higher
Fertility	Medium to Higher	**Total acidity**	Higher
Bunch size	Lower		
Berry size	Medium to Lower		
Production potential	Lower (A)		

Chardonnay

ENTAV-INRA® Nº 1066

Available exclusively from Yalumba Nursery in 2014

Imported by Yalumba in 2007 and released from quarantine in 2009, this clone is anticipated to be available in 2014. This newly developed clone originates from Cote d' Or. It has very low yields (lower than ENTAV-INRA® Nº 809 and ENTAV-INRA® Nº 548) with very small bunches and high sugar content. It produces varietal aromatic wines with fine structure. Its low yield and high sugar content will make this clone very well suited to cool climate viticultural regions.

Summary

Viticultural characteristics		**Composition**	
Fertility	Lower to Medium	**Sugar content**	Higher
Bunch size	Very Low	**Total acidity**	Medium
Berry size	Lower to Medium		
Production potential	Lower to Medium (A)		

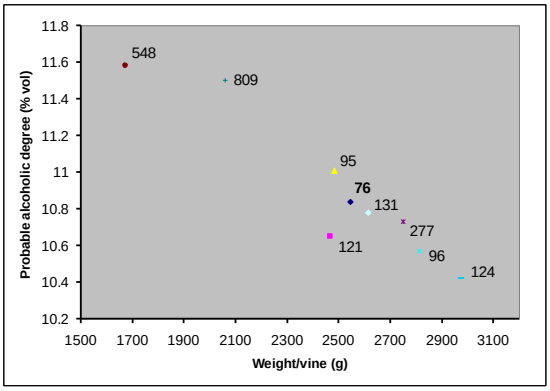


Figure 3. Average over 5 years of trial conducted at AOC St Veran (Bourgogne).

Table 5. Wine assessment Results from tasting of 1991 vintage in April 1992 by 12 judges. Factors graded out of 5, 1 being the lowest, 5 the highest.

ENTAV-INRA® Nº	76	96	**548**	**809**
COLOR				
Quality	3.54	3.5	**3.58**	**3.46**
OLFACTION				
Intensity	2.83	3.29	**3.04**	**3.83**
Complexity	2.75	2.67	**2.92**	**3.17**
Quality	3.13	2.58	**3.21**	**3.33**
TASTING				
Acidity	3.25	3.25	**3.25**	**2.88**
Aromas	2.83	2.63	**3.04**	**3.29**
Thickness	2.63	2.33	**2.92**	**2.75**
Persistance	2.96	2.71	**3.17**	**3.42**
Quality	2.92	2.54	**3.21**	**3.17**
Overall grade	**12.62**	**11.96**	**13.25**	**13.48**

Sauvignon Blanc

ENTAV-INRA® Nº 530
Available exclusively from Yalumba Nursery in 2011

Imported by Yalumba in 2004 and released from quarantine in 2006, this clone is anticipated to be available in 2011. This produces medium vigour and medium-low yields. It is early ripening and has moderate acid levels and is therefore well suited to cool climate regions.

Wines are aromatic, full-bodied and intense, but can be heavy and unbalanced if harvested late.

Summary

Viticultural characteristics		Composition	
Vigour	Medium	**Sugar content**	Higher
Fertility	Medium to Lower	**Total acidity**	Medium
Bunch size	Medium to Lower	**Aromas**	Higher
Berry size	Medium		
Production potential	Medium to Lower (A)		

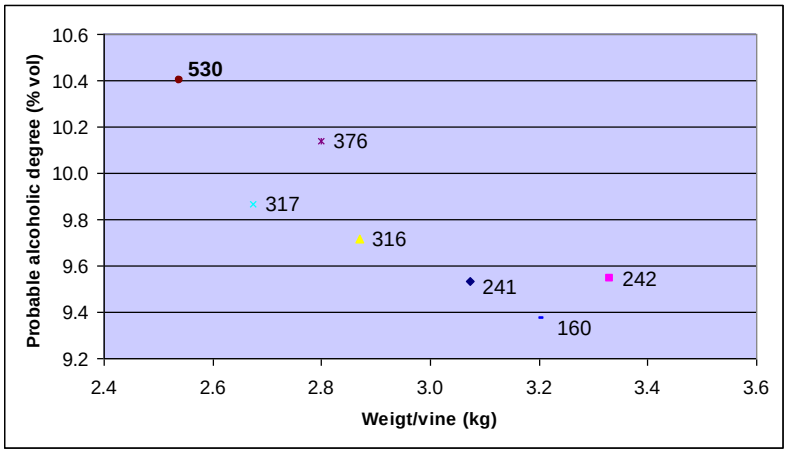


Figure 4. Average over 5 years of trial conducted at AOC Touraine

Sauvignon Blanc

ENTAV-INRA® Nº 905

Available exclusively from Yalumba Nursery in 2013

Imported by Yalumba in 2006 and released from quarantine in 2008, this clone is anticipated to be available in 2013. This clone produces medium vigour and medium to low yields. It has loose clustered bunches which are less susceptible to botrytis than other clones.

ENTAV-INRA® Nº 905 is mainly used in Bordeaux where it is popular for its high sugar content and its ability to produce full-bodied and intense, yet balanced wines.

Summary

Viticultural characteristics		**Composition**	
Vigour	Medium	**Sugar content**	Medium to Higher
Fertility	Medium	**Total acidity**	Medium
Bunch size	Medium to Lower	**Aromas**	Medium
Berry size	Medium to Lower		
Production potential	Medium to Lower (B)		

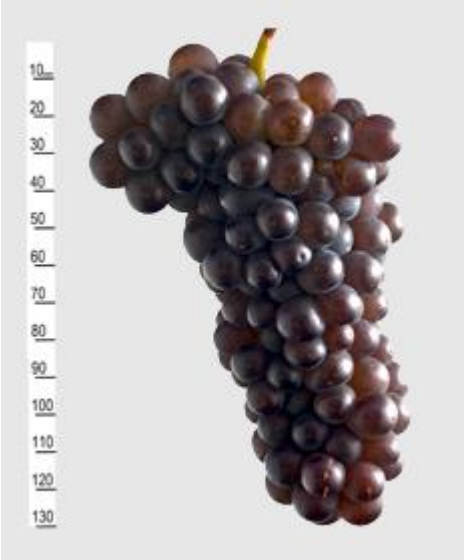
Pinot Gris

ENTAV-INRA® Nº 52
Available exclusively from Yalumba Nursery in 2015

Imported by Yalumba in 2008 and released from quarantine in 2010, this clone is anticipated to be available in 2015. This clone produces a low-medium bunch number/bud but a high bunch weight (higher than ENTAV-INRA® Nº 457) and overall has a medium production potential. It produces higher sugar contents than ENTAV-INRA® Nº 457.

Summary

Viticultural characteristics		Composition	
Fertility	Medium to Lower	**Sugar content**	Higher
Bunch size	Medium to High		
Production potential	Medium		



Pinot Gris

ENTAV-INRA® Nº 457

Available exclusively from Yalumba Nursery in 2015

Imported by Yalumba in 2008 and released from quarantine in 2006, this clone is anticipated to be available in 2015. This clone produces a medium to high bunch number/bud but a lower-medium bunch weight (lower than ENTAV-INRA® Nº 52) and overall has a medium production potential. It produces slightly lower higher sugar than ENTAV-INRA® Nº 52.

Summary

Viticultural characteristics		Composition	
Fertility	Medium to Higher	**Sugar content**	Medium to Higher
Bunch size	Lower to Medium		
Production potential	Medium