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UK harvest 2017¹

Vintage 2017 in English and Welsh vineyards has been, once again, a very mixed picture. On the whole, ripeness levels were high and acids balanced, but many vineyards, especially in the South East (which accounts for 54% of the UK's planted area) were frost affected leading to lower yields. The UK's two most widely planted varieties, Chardonnay and Pinot noir, which together account for around 50% of the 2,275-ha currently planted in the UK², both had relatively low yields which over all vineyards surveyed averaged 4.37 t-ha (1.77 t-acre) which is well below economically sustainable levels for most growers. Having said that, some vineyards, even though they reported frost damage after the April and May frosts, produced some excellent yields from certain varieties. However, for the best growers – those producing the top 25% highest yields – the year was good with yields over all varieties averaging almost 9.0 t-ha (3.64 t-acre). Once again, site selection is everything, especially in a year with frosts. In 2016 the UK officially³ produced 4.15 million 75 cl bottles of wine with an average production of 19.30 hl-ha. Given that I estimate the 2017 yield to be slightly higher than in 2016, and that there are probably an additional 175 ha in production, I estimate the 2017 yield will be nearer to 4.50 million bottles. This is slightly higher than the current 5 year average of 4.20 million bottles.

The weather in 2017

The year started off with little winter frost and the vines started stirring in mid-March leading to one of the earliest bud-bursts that anyone can remember. Many vineyards, and especially those with early varieties, were beyond the woolly-bud stage by the beginning of April. March was a record 2.2°C above the 1981-2010 average and early April saw temperatures as high as 25.5°C in Eastern and South East England. As ever with an early bud-burst, the danger of damage by spring frosts increases as the vines are at a more advanced stage when it occurs. And occur it did – with knobs on. The 19th and 20th April saw widespread 'inversion layer' frosts which undoubtedly did considerable damage to unprotected vines with temperatures falling to -3°C in some places. This however, was but a foretaste of what was to come and a week later, on the 26th and 27th of April, cold air poured down from the Arctic leading to a classic 'advection' frost with temperatures down to -6°C and even -7°C in some

¹ 2017 data has been supplied by 79 different vineyards spread across the UK of whom 71 were conventionally managed and 8 organic or biodynamic. They covered in total 516-ha (1,275-acres) which is approximately 30% of the 1,750-ha I estimate will be in production for harvest 2017. Many thanks to them all for helping with this report.

² 2,275 is the current DEFRA total planted area. My UK Vineyards Guide database is currently standing at 2,308-ha and I estimate that there are at least another 150-200 ha to be added to this.

³ Wine Standard Branch figures.

places. Even with considerable anti-frost resources, it is virtually impossible to protect vines, especially early budding varieties, against this degree of frost and many vineyards lost all of their primary buds and shoots and with them, the crop. The last time the south of the UK saw such damaging frosts was in 1997. It sort of helps to think that this level of frost only occurs once in 20 years, but maybe that it being naïve?

May saw a few more frosts in the first two weeks, but after that the weather improved and for much of May and into early June the weather was good with little rain and lots of clear sunny days. Flowering started in many vineyards around the 10th June – again the earliest anyone can remember – with perfect conditions as temperatures rose to over 30°C between the 16th and 21st June in many places. By the time Wimbledon started on 3rd July – considered by most to be our usual flowering period – it was all over. Most vineyards said it was two if not three weeks earlier than normal. Days over 30°C are rare enough in the UK, but to get three to four in as many days with a peak (at Heathrow) on the 21st June with 34.5 °C is remarkable and never seen since 1976. After the ups and downs of the first half of the year, the rest of the growing season followed a fairly usual pattern. July, August and September were devoid of any really long, settled sunny spells and many said that when it wasn't raining it was blowing and vice versa. This made canopy management, disease control and weed control challenging to say the least and some vineyards found it hard to keep up. As with the flowering, véraison was early with most vineyards through by mid-August and early varieties started to be harvested by the third week of September. For the majority of vineyards, picking was over by mid-October with all but one or two days of rain during the four weeks of picking. What was remarkable about the year – apart from the frosts and +30°C days in June – was that the relatively short warm spell during and after flowering was responsible for setting the size and quality of the crop. Bunches were very large (compared to 2016 when they were smaller than usual) and despite the indifferent summer, sugar levels were high and acid levels decreased nicely for most vineyards. Truly an unusual year.

Yields

This year, because of the much larger number of producers (79 for 2017 compared to 31 in 2016) I have been able to go into more detail with regard to type of vineyard – conventional or organic/biodynamic – and with regard to whether the vineyard was frosted or not frosted. It's not a perfect science and the figures must be treated with caution, but I believe the general trends are accurate.

Table 1 shows that average yields in non-organic and/or biodynamic vineyards were only 4.68 tonnes-ha (1.89 tonnes-acre) which cannot be considered commercially sustainable, but that the top 25% of producers surveyed, managed a respectable 8.95 tonnes-ha (3.62 tonnes-acre) which given the year, is certainly commendable. The difference between 'not frosted' and 'frosted' is quite marked with yields around 32% lower in frosted vineyards. Many vineyards mentioned disease problems – late season Botrytis plus both Powdery and Downy Mildew which caused people to pick earlier than planned and in many cases, discard grapes. Spotted Wing Drosophila (SWD) was also mentioned as a problem – although interestingly only in the South East. Varieties affected by SWD were ALL red varieties: Acolon, Dornfelder, Frühburgunder, Meunier, Pinot noir, Regent and Rondo. I always thought that SWD prefers lower acid varieties and I am surprised that nobody growing

Madeleine x Angevine 7672, Orion, Ortega or Schönburger had problems, but it seems not. Maybe it's just red varieties they like? Undoubtedly the earliness of the year was a factor with warmer daytime and night-time temperatures for the equivalent sugar level of the grapes. I have long thought that the reason we don't seem to get the levels of Botrytis seen for instance in Germany with the same varieties is that by the time our sugar levels rise to the point where the organism can multiply in abundance on the grapes, the night-time temperatures have fallen so that the disease is restricted in the speed at which it can multiply. An early year means that grapes ripen in much warmer conditions – good for sugar levels and fruit quality, but not so good for Botrytis and possibly SWD.

Table 1: Non-Organic-Biodynamic	UK Vineyard Yields - 2017					
	All Vineyards		Not Frosted		Frosted	
	Tonnes-ha	Tonnes-acre	Tonnes-ha	Tonnes-acre	Tonnes-ha	Tonnes-acre
All varieties	4.68	1.89	5.06	2.05	3.45	1.40
All Champagne varieties	4.55	1.84	4.99	2.02	2.72	1.10
All non-Champagne varieties	4.82	1.95	5.11	2.07	3.63	1.47
Top 25% - all varieties	8.95	3.62	9.37	3.79	6.52	2.64
Top 50% - all varieties	5.77	2.34	7.56	3.06	4.99	2.02
Bottom 50% - all varieties	2.27	0.92	2.68	1.08	1.40	0.57
Bottom 25% - all varieties	1.39	0.56	1.73	0.70	0.76	0.31

Comparison between yields in 2016 and 2017

Tables 2 compares yields in 2016 with 2017 and, as can be seen, they are comparable, higher in the top 25% of producers in 2017, but lower in some of the other sectors. The low overall yield in 2016 was due to poor flowering; those in 2017 were due in the main to the frosts.

Table 2 : UK Vineyard Yield 2016 and 2017				
	Tonnes-ha		Tonnes-acre	
	2016	2017	2016	2017
Non-Organic-Biodynamic				
All varieties	4.54	4.68	1.84	1.89
All Champagne varieties	4.49	4.55	1.82	1.84
All non-Champagne varieties	4.57	4.82	1.85	1.95
Top 25% - all varieties	8.70	8.95	3.52	3.62
Top 50% - all varieties	6.96	5.77	2.82	2.34
Bottom 50% - all varieties	2.17	2.27	0.88	0.92
Bottom 25% - all varieties	1.05	1.39	0.42	0.56

Performance of major vine varieties in conventionally managed vineyards

Table 3 shows the performance of the major varieties in conventionally managed vineyards with the difference between ‘non-frosted’ and ‘frosted’ quite clear on some varieties. For example, Chardonnay yielding 5.05 tonnes-ha (2.04 tonnes-acre) in ‘not-frosted’ vineyards, but almost exactly 50% less at 2.54 tonnes-ha (1.03 tonnes-acre) in ‘frosted’ vineyards. The story is much the same (although not quite so marked) for Meunier (32% less) and Pinot noir (43% less). However, the data for other varieties tells a different story. Bacchus is down by only 9%, Reichensteiner by 12%, Seyval blanc by 20% and Siegerrebe by 9%. It seems that early varieties such as Reichensteiner and Bacchus have a chance to recover after frost and produce fruit from secondary flowers, and later varieties, such as Seyval blanc, being not so advanced at the time the frosts occurred, escape with some damage, albeit much less than Chardonnay. This variety seems to suffer from being both early and not being able (or possibly too late – it having a higher acidity) to fruit and ripen that fruit on secondaries.

Table 3: Non Organic-Biodynamic	UK Vineyard Yields - 2017 - Individual Varieties					
Grape Variety	All Vineyards		Not Frosted		Frosted	
	Tonnes-ha	Tonnes-acre	Tonnes-ha	Tonnes-acre	Tonnes-ha	Tonnes-acre
Bacchus	4.21	1.70	4.29	1.74	3.95	1.60
Chardonnay	4.42	1.79	5.05	2.04	2.54	1.03
Madeleine x Angevine 7672	5.64	2.28	6.42	2.60	4.06	1.64
Meunier	5.24	2.12	5.43	2.20	3.70	1.50
Pinot noir	4.31	1.74	4.67	1.89	2.68	1.08
Reichensteiner	4.37	1.77	4.58	1.85	4.03	1.63
Rondo	7.42	3.00	9.82	3.97	4.50	1.82
Seyval blanc	6.87	2.78	7.10	2.87	5.70	2.31
Siegerrebe	3.81	1.54	3.90	1.58	3.63	1.47
Average of individual varieties	5.14	2.08	5.70	2.30	3.87	1.56

Difference between Champagne varieties and non-Champagne varieties

Table 4 shows the differences between the Champagne varieties (Chardonnay, Pinot noir and Meunier) and all other varieties surveyed. This year, the difference between the groups was not so marked, although in the ‘non-frosted top 25%’ sector yields on the non-Champagne varieties were still 19% higher and in the ‘non-frosted top 50%’ sector were 13% higher.

Table 4: Non-Organic-Biodynamic	UK Vineyard Yields - 2017					
	Chardonnay, Pinot noir, Meunier	Tonnes-ha	Tonnes-acre	Tonnes-ha	Tonnes-acre	Tonnes-ha
	All Vineyards		Not Frosted		Frosted	
All Vineyards	4.55	1.84	4.99	2.02	2.72	1.10
Top 25%	8.17	3.31	8.67	3.51	4.96	2.01
Top 50%	5.35	2.17	7.12	2.88	4.13	1.67
Bottom 50%	2.45	0.99	2.86	1.16	1.30	0.53
Bottom 25%	1.55	0.63	1.96	0.79	0.71	0.29
Non-Champagne Varieties	All Vineyards		Not Frosted		Frosted	
All Vineyards	4.82	1.95	5.29	2.14	3.62	1.46
Top 25%	9.85	3.99	10.65	4.31	7.80	3.16
Top 50%	7.55	3.06	8.15	3.30	5.77	2.34
Bottom 50%	2.04	0.83	2.42	0.98	1.49	0.60
Bottom 25%	1.24	0.50	1.44	0.58	0.83	0.34

Regional differences

As can be seen from Table 5, there are marked differences between regions. This year (2017) the data shows that the South West and the Thames & Chiltern regions were the best performers. However, one needs to be careful of the results from these two regions plus Wales, as they are from much smaller samples than the other regions surveyed and include varieties with high yields such as Seyval blanc (6.87 t-ha), Rondo 9.24 t-ha) and Solaris (7.52

Table 5: Non-Organic-Biodynamic	Regional Vineyard Yields - 2017					
	Tonnes-ha	Tonnes-acre	Tonnes-ha	Tonnes-acre	Tonnes-ha	Tonnes-acre
	All Vineyards		Not Frosted		Frosted	
East Anglia	4.35	1.76	4.63	1.87	2.83	1.15
South East	4.61	1.87	5.07	2.05	2.84	1.15
Wessex	3.44	1.39	3.66	1.48	2.84	1.15
South West	5.82	2.36	6.00	2.43	3.67	1.49
Thames and Chilterns*	5.62	2.27	7.38	2.99	2.69	1.09
Wales*	4.39	1.78	6.76	2.74	2.02	0.82
Mercia*	5.22	2.11	7.12	2.88	3.98	1.61

t-ha) which are not so common in mainstream vineyards in the bigger regions. One also has to take into account that all the vineyards who supplied data did so voluntarily and

that one must assume that many vineyards with very poor yields (and even no yields at all) did not supply data. However, it does show that the South East, by far the largest vineyard region (54% of the UK's 2,306-ha) was the worst hit by frost and suffered badly.

Individual Variety Performance

Once again, there is considerable difference between individual varieties. Table 6 shows that the star performers were Regent, Rondo and Seyval blanc, all breaking the 6.00 t-ha (2.43 t-acre) yield figure, with Madeleine x Angevine 7672, Meunier, Phoenix and Solaris breaking the 5.00 t-ha (2.02 t-acre) barrier. If there is any lesson to be learnt from these figures it is that if your vineyard is frost-prone (or has some frost-prone areas) plant them with varieties that appear to be frost hardy (Meunier or Seyval blanc) or try some of the early red varieties that have the time to come back from being frosted to fruit on secondaries. The UK's two major varieties, Chardonnay and Pinot noir, both did about the same as each other – 4.42 t-ha and 4.31 t-ha – and undoubtedly were both frost affected. Compared to 2016, Chardonnay had a 21% lower yield in 2017 (frost again) whereas Pinot noir fared better with a 44%

increase. Not quite sure how to explain that, especially as the sample sizes were good in both years.

Table 6: Non Organic-Biodynamic	UK Grape Variety Performance - 2017			
Grape Variety	Yield T-ha	Yield T-Acre	Potential Alc %	Acid g/l tartaric
All Varieties	4.68	1.89	9.17	11.93
Bacchus	4.21	1.70	9.09	9.21
Chardonnay	4.42	1.79	9.35	14.00
Madeleine x Angevine 7672	5.64	2.28	8.56	8.61
Meunier	5.24	2.12	8.66	13.29
Ortega*	4.71	1.91	9.18	9.43
Phoenix	5.79	2.34	8.12	10.30
Pinot blanc	4.86	1.97		
Pinot blanc - Not frosted	5.94	2.40		
Pinot gris	4.96	2.01	9.29	10.89
Pinot noir	4.31	1.74	9.12	12.22
Früburgunder (Pinot noir Précoce)	2.65	1.07	10.23	8.69
Regent	6.08	2.46	9.97	10.53
Regent - Not frosted	6.37	2.58		
Reichensteiner	4.37	1.77	9.96	8.84
Rondo	7.42	3.00	9.56	10.28
Sauvignon blanc*	3.61	1.46	8.55	13.68
Schönburger	1.54	0.62	10.15	8.37
Seyval blanc	6.87	2.78	7.58	11.45
Siegerrebe	3.81	1.54	9.68	6.94
Solaris	5.27	2.13	10.92	9.45
Solaris - Not frosted	7.52	3.04		
Average of individual varieties	5.03	2.03	9.29	10.36
Note: Data with * is from a small sample				

Organic and Biodynamic Vineyards

This year, data was received from 8 organic and/or biodynamic vineyards growing 24.78-ha (61.24-acres) of vines. Most were situated in the South East, with one in the Wessex region and 19 different varieties of vines were being grown. As can be seen from Table 7, overall yields were lower than in conventional vineyards (3.21 t-ha compared to 4.68 t-ha) but when one compares the ‘not frosted’ yield of 4.08 t-ha the difference is not quite so marked (although the ‘not frosted’ figure for conventional vineyards is higher still at 5.06 t-ha).

Two varieties, Rondo and Seyval blanc were the star performers with Chardonnay and Pinot noir, both frost affected, coming off worst. Whilst again, one must read these figures with caution as the sample size is small and the large majority were in the frost-affected South East, it does give a useful window into the differences in yield between conventional and organic and/or biodynamic vine growing. There are now 29 organic and/or biodynamic on my UK Vineyards Guide database growing a total of 71.2-ha (176-acres) of vines.

Table 7: Organic-Biodynamic Vineyards		
Grape Variety Performance	Tonnes-ha	Tonnes-acre
All varieties	3.21	1.30
All varieties - Not frosted	4.08	1.65
All varieties - Frosted	1.58	0.64
All Champagne varieties	1.98	0.80
All non-Champagne varieties	4.01	1.62
Top 25% - all varieties	7.40	2.99
Top 50% - all varieties	5.17	2.09
Bottom 50% - all varieties	1.33	0.54
Bottom 25% - all varieties	0.81	0.33
Individual Varieties		
Bacchus	2.28	0.92
Chardonnay	1.62	0.66
Madeleine x Angevine 7672*	2.03	0.82
Meunier	2.86	1.16
Pinot noir	1.59	0.64
Reichensteiner	2.80	1.13
Rondo*	12.09	4.89
Seyval blanc	6.18	2.50
Siegerrebe	2.59	1.05
Average of individual varieties	3.78	1.53
Note: Data with * is from a small sample		

Conclusion for 2017

Growing grapes in a challenging climate like the UK's was never going to be easy and whilst global warming has undoubtedly helped us change the spectrum of varieties we grow, one questions whether it has fundamentally changed the business model. Moving from the old German crosses, some ancient hybrids and the old survivor, Seyval blanc, to the Champagne varieties was just a question of uprooting the old and planting the new, but is it any easier to produce commercially viable yields? The foundation of any wine growing business is to produce the right quantity of grapes of the right quality to make into wine that will sell at the right price and recoup the investment in vineyards, wineries and stock – and perhaps make a profit. Some growers, in some vineyards and in some years are getting there and anyone with consistent average yields in the 7.50 t-ha (3.0 t-acre) is probably somewhere near break-even. But this is certainly nowhere near half the growers in the UK. The challenge facing the next generation is to find good sites, plant decent vineyards and get them to crop well.

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Note: This report refers to three different figures of total UK planted vineyard area. They are because the WSB and DEFRA maintain two separate databases – one for vineyards and one for vine varieties (which do not agree with each other) – and I maintain a separate UK Vineyards Guide database which tends to be more up to date with recent plantings, but probably lags behind when it comes to vineyards that are grubbed. Table 8 is taken from the current official Vine Variety database.

Table 8: UK Grape Varieties Nov 2017		
Grape Variety	Hectares	% age
Chardonnay	584	25.67%
Pinot noir	558	24.53%
Bacchus	191	8.40%
Meunier	145	6.37%
Seyval blanc	110	4.84%
Reichensteiner	83	3.65%
Müller-Thurgau	63	2.77%
Rondo	59	2.59%
Madeleine x Angevine 7672	52	2.29%
Ortega	41	1.80%
Others	389	17.10%
Total UK Hectares	2,275	100.00%
Source: Wine Standards Branch of the FSA 2017		