

4. Wine Making

The key to success in winemaking within the rules laid out in this section is the measurement of the specific gravity of the must formed by crushing the grapes. This must be done accurately with a good hydrometer, from a well mixed sample of the must that has been allowed to settle out to clear juice, taking the reading before any fermentation starts or any additions are made or processes are begun. The temperature of the sample needs to be taken into consideration.

The need to get this basic measurement correct cannot be overstated – there is no second chance.

4.1 Enrichment

The process of enrichment detailed in this section is sometimes referred to as Chaptalisation when it refers to the addition specifically of cane or beet sugar. The term is named after the French chemist and Minister, Jean-Antoine Chaptal (1756-1832).

Tables for the assessment of potential alcohol and the amount of sugar necessary to achieve the enrichment required (see 4.9, 4.10) generally give good results in practice. However they are not the only tables in existence and are not claimed to be better than any others, as the results obtained from all such tables are subject to many variables in the fermentation. Hence caution is necessary when taking alcohol enrichment close to the upper limits described in the text, as over enrichment will result in an illegal wine that will require disposal.

4.2 Definitions

4.2.1 Alcoholic Strength

Natural:	from the sugar measured in unfermented grapes or must by a calibrated refractometer or hydrometer and calculated using a conversion table (see 4.9).
Actual:	strength of fermented wine, excluding any residual sugar
Potential:	unfermented residual sugar. Definitions of “product type” - dry, medium dry etc are based on the grams per litre residual sugar in a wine (see below).
Total:	combined actual and potential alcohol. The reference point for enrichment limits. Calculated by converting the residual sugar (grams per litre) to potential alcohol and adding this to the actual alcohol.

Residual Sugar Labelling Indicators (Still Wine)

Dry	Maximum of 4g/l, or 9g/l where the total acidity content is not more than 2 g/l below the residual sugar content.
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Medium Dry	The residual sugar content must exceed the maximum for "Dry" but not exceed 12g/l, or 18g/l where the total acidity content is not more than 10g/l below the residual sugar content.
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Medium or Medium Sweet	The residual sugar content must exceed the maximum for "Medium Dry" but not exceed 45g/l.
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Sweet	At least 45g/l.
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Note:

White wines with a high level of residual sugar and total alcohol exceeding 15% may only be marketed as Quality Wine psr.

4.2.2 Sulphur Dioxide

Free: Active SO₂ in the wine. There are minimum and maximum limits for Quality and Regional Wine (see below).

Total Sulphur: Active and Chemically Bound SO₂. Maximum limits depend on residual sugar level in the wine (see below).

4.3 Table Wine

Although it is legal to produce wine in the UK using grapes from other EC countries, it is assumed, for the purposes of this document, that wines will only be made using authorised grape varieties grown in the UK. For information about non-UK sourced grapes please consult the Wine Standards Board.

For wines made from UK grapes, the following criteria must be met:

4.3.1 Alcohol

minimum natural alcoholic strength for grapes/grape must before enrichment	5% vol.
minimum actual alcoholic strength	8.5% vol.
maximum total alcoholic strength (unenriched wines)	15% vol.

4.3.2 Fermentation

Yeast nutrients may be added to the must:

- Di-ammonium phosphate or ammonium phosphate max. 1.0g/l
- Ammonium sulphite/bisulphite max. 0.2g/l

4.3.3 Enrichment

Dry sucrose (cane or beet sugar) is generally used for enrichment in the UK. The quantity of sucrose used must be recorded in winery records. The increase in alcohol must not exceed 3.5% vol. or result in a wine with total alcohol greater than 11.5/12% vol. (white/red). In exceptionally poor years the allowed increase in alcohol may be raised to 4.5% (following industry consultation with Defra and notification to the European Commission) for specified varieties.

Grape must or wine may be concentrated through cooling (cryoextraction) provided that:

- the volume of wine is not reduced by more than 20%; and
- the natural alcoholic strength is increased no more than 2% vol.

4.3.4 Record Keeping

The enrichment process must be recorded on the day of operation and notified to the local WSB inspector 48 hours in advance, using form WSB10 (this may be faxed). Forms are provided via an annual mailing to all registered wineries

4.3.4 Control of Oxidation and Active Organisms

By use of gaseous sulphur dioxide or by addition of potassium bisulphite/metabisulphite, subject to maximum levels of total sulphur dioxide:

- Red wine 160 mg/litre
- White wine 210 mg/litre
- Rosé wine 210 mg/litre

Wines with residual sugar \geq 5 grams/litre:

- Red 210 mg/litre
- White 260 mg/litre

4.3.4 Sweetening

Wine may be sweetened with grape must (sweet reserve) provided that:

- For enriched wines, the total alcohol of the sweet reserve must not exceed the total alcohol of the finished wine; and that
- For unenriched wines the total alcohol of the finished wine is not increased by more than 2% vol.

Sweetening operations must be recorded in winery records, within 24 hours of processing.

4.3.4 De-Acidification

Grape must and new wine may be partially de-acidified, without limit, until 16 March, post-vintage, using:

- Calcium Carbonate (proprietary brands include Acidex and Neoantacid)
- Potassium Bicarbonate
- Other materials set out in Regulation 1493/1999 Annex IV.1

Other wines may be de-acidified by up to 1g/litre, at any time, but this operation must be notified to the WSB using form WSB14 and recorded in winery records (the form is included in the annual mailing to all registered winemakers).

4.3.5 Filtering/Fining/Gas Blanketing etc

Only the commonly used substances are listed. A full list appears in Regulation 1493/1999 Annex IV.

Wine may be fined using a clarifying agent listed in the Regulations. These include:

- Bentonite
- Gelatine
- Caseinate
- Silicon dioxide (usually as silica sol)
- Isinglass

(further details given in Annex IV, 1493/1999)

4.3.6 Stability

Tartrate precipitation in the finished wine may be inhibited by addition of Potassium Bitartrate

4.3.7 Blending of Wines

Blending of wines is only allowed if it does not involve wines from different categories. The categories are defined as:

- Red must and red wine (including rose wine)
- White must and white wine
- Table wine(including those with geographic descriptors)
- Quality wine psr

Blending of wines from the same categories is not allowed if any of the ingredients are illegal e.g. an over-enriched wine (illegal) cannot be blended with a un-enriched or legally enriched wine. However, a table wine that fails to meet the minimum actual alcoholic strength may be blended with a legal table wine at the premises of the winemaker.

Note: Water is not a permitted additive except as necessary for the dissolution of permitted additives.

4.4 Sparkling Wine & Quality Sparkling Wine (QSW)

Sparkling wine and quality sparkling wine may be produced in the UK from English and Welsh table wines, as may semi-sparkling wines, aerated sparkling wines and aerated semi-sparkling wines.

Sparkling wines may be produced by any of the traditional production methods: fermentation in sealed vats (cuvée close method), transfer method, or fermentation in the bottle. In addition, aerated sparkling wines and aerated semi-sparkling wines may be produced by carbonation.

The following requirements must be satisfied:

- Minimum pressure (3 bar; QSW 3.5 bar)
- Sulphur Dioxide (max 235 mg/litre; QSW 185mg/l)
- Alcoholic strength

Actual alcohol (minimum for QSW)	10%
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- Total alcohol (minimum)

Base wine	8.5%
Base wine (QSW)	9%
- Dosage/Tirage

Tirage (to start second fermentation)	
- max total alcohol increase	1.5%
Dosage (to adjust sweetness of wine)	
- max total alcohol increase	0.5%

4.5 Semi-Sparkling Wine

Defined as wine with pressure 1-2.5 bar and a minimum actual alcohol of 7% vol.

4.6 Quality Sparkling Wine Produced in a Specified Region (psr)

There is currently no provision in the Quality Wine Scheme for the production in the UK of Quality Sparkling Wine psr.

4.7 Regional Wine

This is an upper category of Table Wine (equivalent to French Vin de Pays etc).

For the detailed requirements please refer to “Table / Regional / Quality Wines - A Summary of the Parameters.”

Wines with proven enhanced characteristics are recognized by Defra and are subject to testing and tasting through a system run by the Representative Industry Body (RIB). The RIB is approved by Defra to undertake this task for a fixed period. Presently the RIB function is being performed by the UKVA. Application procedures can be found in the section “UKVA Regional Wine Procedures.”

Full details are set out in the Defra “Notice to Vine Growers and Wine Producers” and UKVA information sheets (includes application process, fee and deadlines for tasting dates for the current year) and are included on the WSB web site.

Analysis is either by the designated laboratory or using a Producer’s Analysis Certificate. A Tasting Panel is convened by the RIB, or at a UKVA National or Regional Competition, subject to approval by the Secretary of State.

Results are notified by the RIB

4.8 Quality Wine

Full details of Quality Wine production requirements and application procedures are given in the Defra “Notice to Vine Growers and Wine Producers.”

4.8.1 Production Requirements

Alcohol:

See *Table / Regional / Quality Wines, - a summary of the parameters.*

Enrichment:

Wines may be enriched up to 3.5%, *with no upper total alcohol limit.*

However wines which fail quality wine application will only be allowed to be marketed on application to the WSB, usually as Table Wine.

Free Sulphur Dioxide:

Minimum 15mg/l (a lower level is permitted only if ‘effective oenological techniques’ have been used or for dry wines meeting additional specified criteria)

Maximum 45mg/l for dry wines.

Total Sulphur Dioxide:

Wines described as “botrytis” or similar are allowed a higher maximum level of 300 mg/l.

Sweetening:

Quality Wine may only be sweetened with sweet reserve sourced in the quality wine region.

4.8.2 Applications

Forms are obtainable from the WSB London office. An example can be found at the annex. A fee is payable to cover administrations costs of the RIB

4.8.3 Assessment

This is in three parts:

1. Post bottling analysis commissioned by the applicant from the designated laboratory
2. Blind tasting by a panel convened by the RIB.
3. Check on winery records

A copy of the application form and analysis results is sent by the RIB to the WSB, around one week after the tasting. Following receipt a WSB inspector will usually visit the winery to check records. After these have been checked (time 1-3 weeks), results are notified by the WSB London office.