

**THREE COUNTIES and WELSH MARCHES PERRY PRESIDIUUM PROTOCOL.**

**Alcoholic Beverage Production.**

**Section 1.**

**Name of Product:**

**THREE COUNTIES and WELSH MARCHES PERRY**

**Section 2.**

**Reference area:**

**The THREE COUNTIES and WELSH MARCHES**

Traditionally perry production and perry pear trees have centered around the Three English Counties of Gloucestershire, Herefordshire and Worcestershire but also strongly associated the Welsh Marches Counties of Brecon, Monmouth, Montgomery, Radnor and Shropshire as historically many estates straddled county and country boundaries. Consequently the orcharding of perry pear trees and the craft of perry production were to be found throughout and therefore these adjacent counties are to be included in the designated area, hereinafter referred to as "The Three Counties and Welsh Marches". (See Appendix A-Map)

**Section 3.**

**Historic Background:**

**The History and Establishment of the Perry Pear and Perry Making.**

Archaeological remains of charcoal and seeds have shown *Pyrus pyraster* (the wild or common pear) to have been naturalised in Britain during the Neolithic Period c.5000 - c.1000 BC. The cultivated pear originated from the Caucasus mountains and Asia Minor, spreading through human migration through Central Asia. Improved forms of pears spread throughout the Fertile Crescent through Persia, Turkey, Palestine and Egypt.

Homer in the *Odyssey* (written between 900-800 BC) refers to orchards of apple and pear trees. This was followed in c.300 BC by the Greek writer Theophrastus, who wrote of the propagation and cultivation of pear trees, whilst Pliny the Elder in c.1 AD mentioned pears being used as a fermented drink.

Early references to perry or a drink made from pears, was probably produced by the *dépense* method which involved chopping the fruit and steeping it in water, rather than the fermentation of pure pear juice.

The Romans further developed the cultivation techniques of the Greeks and had many named cultivars of pears, some of notable antiquity. Palladius in c.4 AD gave instructions in his *Opus Agriculturae* for the making of 'Castomoniale', a type of perry, whilst Tacitus implied that the Romans had brought their cultivated pears to Britain.

Scholars of runic writing suggest that the early Saxon rune Peorrdh (*Purt*) is associated with the pear tree. Peorrdh is invoked when casting and reading the Runes to establish the birth-luck of a newborn child and is also associated with the celebrations of the birth in the mead hall. This ancient rite may be reflected in the Welsh Marches custom of wetting a new babe's head with perry for luck and protection. To be 'purt' in local dialect is to be drunk on perry!

The Frankish King and Holy Roman Emperor Charlemagne (b.742- d.814 AD) made a law that crown lands in every city of the Empire should have a garden planted with herbs and fruit, including apples and pears. His influence was still to be felt in the English monasteries under the control of the Norman bishops (c.1070) who brought cultivated varieties of apples and pears with them to England when they arrived with William the Conqueror. The monasteries in England and throughout Western Europe remained major centres for apple and pear cultivation until the 14<sup>th</sup> Century.

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**While much debate still surrounds the exact path the perry pear has taken, it seems that the cross fertilisation of native wild pears (*Pyrus pyraster*) with the Roman and the later Norman pear gave us the *Pyrus communis*, the increased edibility and juiciness of this wild, feral fruit, giving rise to the perry pear.**

Mature pear trees are mentioned in the Domesday Book (1086) as boundary markers. These feral perry pears were a common sight in Gloucestershire in the 12<sup>th</sup> century, when William of Malmesbury wrote; *'Here you may see the high wayes and common lanes clad with apple trees and peare trees, not set nor grafted by the industry of mans hand, but growing naturally of their own accord'*.

During the Tudor period (1485-1689) there is evidence that Richard Harris, fruitier to King Henry VIII, ordered imports of the best pear graft woods from the Netherlands in 1533 to improve the Royal orchards. However, the dissolution of the Monasteries in England (1536-39) by Henry VIII ended the cultivation of orchards by holy monks.

The esteem with which the pear was held was symbolised by Elizabeth 1st granting Worcester with "The Three Pears Sable" for its coat of arms in 1575.

Meanwhile, due to the frequent wars with the rest of Europe it became a patriotic duty for Englishmen to produce cider and perry to replace or lengthen foreign wines which were in short supply.

By the end of the 16<sup>th</sup> century, Gerard in his Herbal mentions that the number of pear varieties in cultivation had increased, The Great Choke, the Small Choke, the Wild Hedge, the Lowsie and the Crow Pear, yet many of these pears were harsh and bitter and others of such a choking taste that they could not be eaten, seeming to indicate that they are natural rather than selective propagation.

Thirty years later, Parkinson, in 1629, again referred to these fruits as 'Choke pears' which in his time applied to any wild, very astringent type of pear: *"The Perry made of Choke Pears, notwithstanding the harshness and evill taste, both of the fruit and juice, after a few months, becomes as milde and pleasante as wine."* Many of the pears grown in the 17<sup>th</sup> century though astringent were used for eating and cooking and only the surplus sent to the mill for making into perry.

John Norden, writing in "The Surveiors Dialogue" of 1610 indicates that the older cider apple and perry pear orchards of the Home Counties were not being replanted, the art of cider and perry making becoming lost as growers concentrated on production of table fruit. Thus possibly leaving the expertise to flourish in The Three Counties and Welsh Marches.

Indeed, Daniel Collwall writing about the area of north west Gloucestershire called "May Hill" for the Royal Society (as recorded by John Evelyn in 1662) states *"it is pears it most abounds in, of which the best sort is that they name the Squash pear, which makes the best perry of these parts. The pears for perry are the Red Squash pear esteemed the best, the John pear, the Harpary Green pear, the Drake pear, the Green Squash pear, the Mary pear, the Lullam pear."* This is the first recorded suggestion of man's selection of varieties of perry pear for making perry.

There is a saying *'He who plants perry pears truly planteth for his heirs'* that probably reflects the long life span of the pear tree. Perry pears are remarkable also for the length of time over which varieties have retained their popularity, some of the varieties recommended for present day planting being already renowned 300 years ago. In 1710 the orchard at Hellens in the village of Much Marcle, Herefordshire, was planted to commemorate the coronation of Queen Anne; the orchard covered one hundred acres surrounding the house and contained four avenues of pear trees. To this day, an avenue of productive perry pear trees from that original orchard still flanks the main drive up to the house.

In 1789 William Marshall writes *'Herefordshire has ever borne the name of the first cider county - Gloucestershire however claims a preference in the two most celebrated fruit liquors the district affords (cider and perry) - Worcestershire and Monmouthshire have their claims of excellency. May Hill (in the parish of Longhope, some 8 miles north-west of Gloucester, 19 miles to Hereford, 15 miles Monmouth) may be considered to be the centre of this division of the cider country'*

The survival of perry through lamentable centuries of neglect from the late 18<sup>th</sup> to 20<sup>th</sup> century is due to the foresight of a handful of enthusiasts who, recognising the unique qualities of the drink, took active steps to encourage the continued propagation and planting of the best varieties and to improve the techniques of perry making. The first of these, Thomas Andrew Knight, is considered to be the father of modern pomology as he was the first to realise that the quality of the drink depended on the variety and provenance of the fruit. His *Pomona Herefordiensis* (published 1811) included the first ever illustrations of five varieties of perry pears known to make fine perries, which inspired farmers to restore their neglected orchards and revive farmhouse perry making.

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But by the end of the 19<sup>th</sup> century the orchards were once again in decline. The Woolhope Naturalists Field Club Pomona committee, led by Dr Robert Hogg and Dr Henry Graves Bull, committed themselves to the improvement of the orchards of Herefordshire, producing the Herefordshire Pomona in 7 parts over the years 1876 – 1885 based on the contributions to the Club's annual apple and pear exhibitions. The Pomona describes 29 varieties of perry pear, including full colour plates of blossom and fruit painted by Miss Alice Blanche Ellis and Miss Edith Elizabeth Bull. In 1886 Hogg and Bull published 'The Apple and Pear as Vintage Fruits', this slim volume omits the colour plates but includes line illustrations and descriptions of the fruit which make it invaluable for identifying varieties in the field and for this purpose it is still in use by modern perry makers today.

CW Radcliffe Cooke MP for Hereford, was affectionately known in the House of Commons as MP for cider due to his tireless campaigning for his local drink and his enthusiasm for the improvement of cider and perry orchards. In 1898, his essays on the subject were collected into the volume 'A Book about Cider and Perry', in which he called for the revival of English perry as '*possibly the most wholesome of all fermented liquors.*' His campaign effectively prevented the government of the day from imposing a tax on cider and perry, perhaps even saving the fledgling commercial producers of the late 19<sup>th</sup> and early 20<sup>th</sup> century from going out of business. With support from the cider industry and local councils in the South West of England, he also assisted in founding of the National Fruit and Cider Institute at Long Ashton near Bristol in 1903, whose research brief included the improvement of perry fruit and production processes.

The Institute was under the direction of B.T.P Barker for 38 years, who established through his research that the vintage quality of pears was influenced by the rootstock, climate, orchard management, and soil conditions.

In the 1920's Dr H E Durham, Director of Research at HP Bulmers (from 1905 to 1935) was the first to explore the great wealth of perry pear varieties and to attempt to sort out the confusion of the existence of local synonyms for already known varieties. In doing so he observed that many varieties could be instantly identified in the field by their characteristic shape and habit of growth. Durham travelled extensively on horseback, photographing the trees, foliage, fruit and flowers of each variety, recording its location and attaching a lead label to good specimen trees, standing on his saddle to make sure it was out of the reach of small boys seeking souvenirs. As a result, many of his labels are still in place on surviving perry pear trees today. Durham collected his photographs into two albums (which lamentably have never been published), established a reference collection of around 40 varieties of perry pear at HP Bulmers Broxwood nurseries and also contributed to the technical problems involved in the commercial production of perry, for which his early bacteriological training especially fitted him.

Large-scale production of perry is limited as the majority of varieties of perry pear rot soon after they have fallen from the tree, bruise easily in transit, plus the juice is prone to bacterial infections and neither the juice nor the finished perry blends well often turning hazy or lumpy. Consequently perry has always lent itself to small scale production, with much of the fruit used on the farm being milled immediately after harvesting, pressed and the juice fermented in small quantities and as single varieties.

However, in the late 1950's Francis Showering of Somerset applied the researches of the Long Ashton Institute into the qualities of different varieties of perry pears and with the accurate control of fermentation arrived at the first large scale commercial production of perry from genuine perry pears, the successful result of which is still marketed under Showerings trade name 'Babycham', though the perry pear orchards planted for the sole purpose of providing fruit for this drink have been mostly grubbed and the raw material now utilized is imported pear concentrate.

In memory of Professor Barker the Long Ashton Institute published 'Perry Pears' in 1963 bringing together the Professor's work on vintage perry pears and their fermenting qualities along with recently researched illustrations and photographs of the trees and fruit, their names, synonyms and current locations. Much of the latter work was achieved during the 1950's by Ray Williams of the Institute, who also used one of the albums of Dr Durham's photographs housed at Royal Horticultural Society to assist him in his search.

The second album of Dr Durham's photographs was lost for many years, until being traced by Charles Martell to the collection of the Woolhope Club in Hereford Museum. Working alongside Ray Williams to confirm the identification of surviving varieties, Charles established the National Collection of Perry Pears at the Three Counties Showground in Malvern in 1991. 75 plus unique surviving varieties of perry pear have so far been identified, including some new to science. The collection provides a unique gene bank for the preservation of perry trees for future generations to revive for perry making or to preserve for historical interest.

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Today sees a slow revival of the production of perry, albeit on a very small scale and mostly through craft producers, but this coupled with an increasing number of plantings of perry pear trees by enthusiasts, farmers and orchard owners, gives signs of hope that a revival of the craft of perry making is underway.

This tentative revival in the production of perry is probably surpassed by the resurrection of many of the customs associated with the culture of perry production. Not least the annual "Wassail", the blessing of the orchard trees that has become an important event in the Three Counties and Welsh Marches, with Leominster Morris Men and other folk dance troupes leading the way and the public enjoying this unique and traditional celebration.

## Section 4.

### **Description of fruit variety:**

There are at present some 120 accepted varieties of perry pear and distribution can be very localised, hence over 200 names are used for these varieties. The trees themselves can have huge canopies, the largest recorded was three quarters of an acre for the Holme Lacy perry pear, this tree could yield a crop of 5-7 tons in 1790.

The following points highlight the key characteristics of the fruit:

- o Standard orchards are planted at 40 foot spacings and scions are budded or grafted onto rootstocks (such as *Pyrus Communis*), sometimes with an interstem (such as "Old Home" to combat fireblight);
- o Bush style trees are possible by grafting/budding scions onto Quince rootstocks but these are only successful for some varieties;
- o The trees can show great longevity and be fully productive for 60-250 years; fruit can appear from the earliest years be worthwhile harvesting from year 10 on standards and year 5 on bush.
- o Perry pears flower earlier than apple and the blossom is mostly white (a few varieties show pink i.e Arlingham Squash and Turner's Barn);
- o The fruits vary in shape from pyriform, through turbinate, round, oblate to elliptical. Stems and eyes are variable. Colour of the skin is generally green or yellow/brown and a (red) flush will vary with season and maturity. Russet (all over for Brown Bess and Barnet) and lenticels (white and brown breathe holes) are more constant for each variety;
- o Yields vary dependent on tree maturity and season;
- o The tannin levels (bitterness/astringency) and acid levels (sharpness) coupled with the hardness of many perry pears render them inedible till milling releases the sweetness to balance the tannins and acids.

(Appendix 2-List and Description of Varieties in Three Counties National Collection of Perry Pears).

## Section 5.

### **Territory and features of the ground:**

It was the Long Ashton Institute and Research station under the direction of B.T.P Barker for 38 years, who established through his research that the vintage quality of pears was influenced by the rootstock, climate, orchard management, and soil conditions.

But above all else, Professor Barker's trials established that the perry pear is at its best on deep loam, yet that satisfactory orchards could be established on acid sandy soils overlying sandstone; on heavy clays and marls; on dry gravels; and on low-lying alluvial land, through the careful selection of varieties tolerant to local conditions.

More tolerance of damper conditions than apples and the tendency for "challenged" trees to produce higher quality perry has led to perry pears being planted on less favourable land.

The appearance of early blossom does make some varieties more prone to frosts than the later blossoming apple. However many orchards in exposed locations seem to have fared very well over the years.

**Section 6.**

**Climate:**

The rainfall is invariably sufficient, the ideal being gentle nighttime showers. However the perry pear seems to need more sunshine and warmth than produced by some English summers and this dependence on beneficial climatic conditions can produce wide variations in perry quality from year to year.

**Section 7.**

**Cultivation techniques:**

Perry pear trees are usually found in established orchards, although some trees can be found in an isolated situation (e.g. in hedgerows). Some orchards solely include perry pears, whereas others include a mix with cider apples and some culinary fruits. Tree spacings are typically based on 40 foot between plantings.

In the early years after planting, an arable crop could be grown in the orchard, but as yields increase a grass sward is needed at harvest. This can be grazed or mown.

In the early years grass competition at the base of the tree can be minimised by the use of organically approved sprays, mulching or hoeing.

As required trees will be pruned for shape and more even annual yields.

**Section 8.**

**Use of fertilizers:**

No artificial fertiliser is used. Indeed, it is important to control the amount of nitrogen available to the tree in order to make the finest perry. However, the dung from grazing animals will naturally decompose to be utilised by worms and can provide an appropriate level of nutrients.

**Section 9.**

**Treatments:**

Normally, no sprays are used (unless under an approved organic certification).

It is important to note that in the mature standard orchard there is no possibility of applying spray either economically or within current regulations due to the size and canopy of the trees themselves.

Bush orchards, should any be developed, may spray according to Soil Association guidelines which are based on sulphur and copper preparations. The list of permitted sprays and practices is continually updated and current S.A. regulations should be viewed.

The most common pests and diseases of perry pears are:

- 1) Fireblight, for which there is no treatment, and after which all that can be done is to carefully remove infected wood/trees and burn.
- 2) Scab-fungal disease.
- 3) Mildew-fungal disease.
- 4) Die back which tends to affect older trees.
- 5) Pear Sucker is a most troublesome pest.

When pruning a proprietary brand of pruning paint may be applied to heal exposed cuts.

Section 10.

**Combinations and crop rotations:**

Only grass will be grown under the orchard canopy of trees yielding perry pears for harvest. This will be either grazed or mown. If livestock are grazed in the orchard, they will be removed at least 4 weeks prior to harvesting to ensure the fruit is not contaminated.

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Perry pear trees may be planted in orchards with other fruit trees. Unlike apple trees, perry pear trees do not suffer from being replanted/replaced in the same space and so an orchard can survive many hundreds of years.

Historically apples (usually) were interplanted and many old orchards have a few perry pear trees and many apple. Many old orchards can also have damsons (usually in the hedgerow) and plums. The only major concern for perry pears is the risk of fireblight and this can be harboured in hawthorn hedges. This is the most common hedge material in the UK.

## **Section 11.**

### **Harvesting:**

Harvesting will be from early September through to December depending on the specific variety concerned and the year.

Perry pears can be hand picked into bags or bulk containers or machine picked into bulk containers.

Equipment used could consist of a panking pole, suitable bags or baskets, a tree shaker, a hand or tractor operated harvester, hand or tractor bucket, bulk trailer. Handpicking is viewed as the best way to ensure clean harvesting of ripe fruit.

After transport to the perry maker, some fruit requires immediate washing and milling (within 24 hours of harvest, especially for some early varieties such as Moorcroft), others (such as Butt) can be stored off the ground, possibly on straw, in boxes or on tollit floors, kept cool (chilled), sorted and sweated until mature, then washed and pressed.

After milling and prior to pressing, varieties that are high in tannin, (such as Butt, Flakey Bark, Rock or Teddington Green), can be macerated to good effect to reduce the tannin levels in the finished juice by up to two thirds depending on degree of exposure to air.

## **Section 12.**

### **Preservation:**

As indicated above, storage of some varieties is possible but with the utmost care being required. Most varieties are milled within a week of harvest.

## **Section 13.**

### **Alcoholic Beverages Production Technique:**

### **“THREE COUNTIES and WELSH MARCHES PERRY”**

**THREE COUNTIES and WELSH MARCHES PERRY** is unique and distinguishes itself from all other products on the market, fully reflecting the perry maker's art.

#### **Description:**

- It is a slow fermented, still or sparkling drink, predominantly made from vintage varieties of perry pear. It is clear and pale to golden yellow in colour.
- The aroma is subtle and wide ranging suggesting hints of hedgerow and tropical fruits, exotic citrus and meadow flowers.
- On the palate, the acidity and tannin is balanced by the sweetness from unfermented sugars.
- Three Counties and Welsh Marches Perry reflects the main ingredient (perry pears) and is made with the minimum of intervention. The particular characteristics of the specific varieties of perry pears used are considered as the most important factor that influences the organoleptic properties of the final product.

#### **Geographical Area:**

The perry pears are grown and all production processes take place in the area defined in Section 2. The main factors that have determined this geographical area are as follows:

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- The soil properties and climatic conditions, from deep clay loams to alluvial river deposits, coupled with regular, sufficient rainfall throughout the growing season, with adequate sunshine and shelter by high hedges against wind and frost, give the area unique perry tree growing properties.
- Development of local tradition and knowledge of orcharding and perry making, with appropriately skilled labour and expertise, has sustained production through the centuries.
- The establishment and propagation of vintage perry pear varieties – unique to the region - such as Moorcroft, Blakeney Red, Winnals Longdon, Red Pear, Butt, Gin and Oldfield, along the many Huffcaps, Squashes and Longdons.

### **Production Criteria:**

Three Counties and Welsh Marches Perry:

- must be made from 100% fresh juice from perry pears grown in the area defined in Section 2. All sources and quantities and varieties of perry pears to be recorded;
- must be produced in the area defined in Section 2, should be sustainable and made to the highest of standards;
- can be fermented by wild and/or pitched yeast cultures;
- can be fermented and matured in wood, stainless steel, food grade plastic, glass or suitable epoxy resin lined tanks;
- can use yeast nutrients to manage stuck or low nutrient fermentations;
- is typically made using long, slow, cool fermentations.
- requires a suitable period of maturation;
- should be racked and filtered as necessary;
- can only use sulphur dioxide (or it's salts) as a preservative, to a maximum level of 200ppm, as per legislation. Traditionally "sulphur" has been used for barrel sterilisation since the 17<sup>th</sup> century and is approved by Organic certification;
- can include the addition of a food grade pectic enzyme and calcium chloride as keeving agents.
- no additional sugars or artificial flavourings, colourings and sweeteners are permitted.
- all production ingredients and processing aids must be certified GM free

All production processes – along with ingredients used - will be monitored and recorded to ensure full traceability.

**The resulting perry will typically be still, possibly with a small amount of petillance due to dissolved CO2.**

### **Quality Assurance:**

- Each producer must have their own unique integrated HACCP/HAQCP Quality Assurance System in place. This system, as well as meeting a legal obligation to control significant hazards to human (consumer) health, will also be the main mechanism through which product quality standards are assured and maintained. This system will be based on the following principles:
  - A comprehensive hazard analysis will be undertaken and recorded;
  - Critical Control Points (CCPs) and Quality Control Points (QCPs) will be identified;
  - Critical limits for each CCP and QCP will be specified;
  - Monitoring for each CCP and QCP will be implemented;
  - Corrective Actions for each CCP and QCP will be planned and carried out if necessary;
  - Verification of the system will be regularly undertaken;
  - Records and documentation will be kept.
- Although there will be differences between individual producers and each separate production process, the main significant hazards to human (consumer) health that will therefore be addressed by the HACCP component of the individual's Quality Assurance System are likely to (but will not necessarily) include:
  - Heavy metal contamination resulting from the inappropriate selection and use of equipment for the production process;
  - Chemical residues found in the fruit;
  - Glass from the use of glass bottles in packaging the product;
  - SO<sub>2</sub> from the excessive use of this key preservative in the production process;
  - Uncontrolled secondary fermentation within the packaged product.
- Although there will be differences between individual producers and each separate production process, the main aspects that have the potential to cause quality problems and will therefore be addressed by the HAQCP component of the individual's Quality Assurance System will include:

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- Inappropriate selection and use of pears;
- Contamination, growth, survival and activity of spoilage yeasts and bacteria;
- Ingress of air and oxygen pick-up;
- Unsuitable temperatures occurring during the production process.

## Section 14.

### Bottle Fermentations:

#### **For bottle conditioned perry:**

As stated in section 13, for keeving, a food grade pectic enzyme and calcium chloride are permitted. The keeved juice is bottled at the required SG to give the required conditioning and sweetness in the bottle.

Bottles must be heavy-duty, punted and capable of being sealed with either a 29mm crown cap or a cork and wire cage, and able to withstand a sustained pressure of 6 atmospheres at 10°C.

#### **For bottle fermented perry:**

Bottle fermentation applies to the process of secondary fermentation of still perry within a sealed bottle. Perry used for this process is manufactured to the exact same specification as still perry produced (as per Section 13).

Bottles must be heavy-duty, punted and capable of being sealed with either a 29mm crown cap or a cork and wire cage, and able to withstand a sustained pressure of 6 atmospheres at 10°C.

To start the secondary fermentation within the bottle the permissible additions (constituting the *liqueur de tirage*) are:

- i) fermentable sugar (glucose, fructose, sucrose) at a dose of between 12 and 26 grams per litre
- ii) an active yeast culture so as to result in the equivalent addition of between 100 and 150 milligrams grams of dry yeast per 750 millilitres of perry.
- iii) perry from the same batch.
- iv) yeast nutrients and riddling aids can be used if appropriate

Sealed bottles to be stored horizontally, typically for a minimum of 1 year at a temperature of between 5 and 15°C.

Riddling can be carried out manually or by automated means.

Disgorging can be carried out manually or by using an automated disgorging machine.

(Dosage is not permitted – all bottle-fermented perry is *non-dosée*, with the only permissible addition (to top up) being other bottle-fermented perry from the same batch.)

The final seal can be either a 29mm crown cap or a cork and wire cage.

#### **Forced Carbonation:**

While allowed at present, it is the aim of the presidium to encourage bottle conditioning as the preferred means of obtaining carbonation of perry in the bottle.



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## Section 15.

### **Taste, physical and chemical characteristics:**

The finished perries possess the following qualities:

#### **Still Perry:**

Color: Typically very pale almost clear through to a deep straw colour

Smell: Exotic citrus, tropical and hedgerow fruits, meadow flowers and pear.

Taste: Clean, lingering, full bodied with the balance of acidity, tannin and unfermented sugars dictated by variety of perry pear

Can be dry, medium or sweet.

#### **Bottle Conditioned Perry:**

As still perry but with sparkle ranging from petillant to effervescent. Slight character enhancement typical with finishing of fermentation in the bottle. A slight sediment is possible. Can be dry, medium or sweet.

#### **Bottle Fermented Perry:**

As still perry but with sparkle consistant with secondary fermentation in the bottle and further characteristics (such as typical biscuity character) developed during the ageing process "sur lees" in the bottle. Can be dry to medium.

#### **Forced carbonation:**

Will yield a different bubble characteristic dependent on the level of carbonation. Can be dry, medium or sweet.

## Section 16.

### **Commercialization:**

Packaging is at the discretion of the producer and the market to which the product is destined.

Draught still perry can be filtered or pasteurised and packaged in barrels, manucubes, bag in the box or into suitable glass bottles with appropriate closures.

Bottle conditioned and bottle fermented perry must be in suitable heavy duty bottles and closed appropriately. (See Section 14).

## Section 17.

### **Labelling:**

#### **Product Name: Perry**

Ingredients List in descending order of magnitude of weight.

All processing aids must be listed.

Indicate whether Dry (SG 1.005 or below), Medium(above SG 1.005 up to SG 1.012) or Sweet (above SG 1.012).

Indicate whether still, bottle conditioned or bottle fermented or forced carbonation.

Name and address of producer

Quantity

Alcohol Strength

Allergen Advice

Lot Mark

No misleading information.

Storage conditions and/or usage instructions if necessary.

with any other wording as required and defined by legislation, especially HMRC Notice 162.

If a single variety perry, then the variety must be declared.

At present there is no logo for Three Counties and Welsh Marches Perry Presidium producers or products, but we would welcome the use of a Slow Food logo for approved Presidia products.

**Section 18.**

**Quality checks:**

See **Section 13** above. Quality control will typically include the following:

Production Stage	QC Method
Freshly Pressed Juice	Specific Gravity (S.G.), pH, Titratable (Total) Acidity (T.A.)
24 hours after addition of sulphur dioxide (if used)	Free and total SO <sub>2</sub>
During Fermentation	S.G., pH, T.A., Temperature
Post Fermentation / Storage	Total and Free SO <sub>2</sub> , Alcohol, T.A., sensory analysis
Blending	S.G., T.A., Alcohol, Total and Free SO <sub>2</sub> , sensory analysis
Bottling	S.G., T.A., Total and Free SO <sub>2</sub> , Alcohol, microbial total viable count (TVC), sensory analysis

**Sensory Analysis and Organoleptic Quality:**

As outlined above, during the production process sensory analysis will be undertaken by the individual producer him or her self.

Final products will normally also be subject to organoleptic assessment by a taste panel.

This overall strategy involves screening the product for the presence of sensory faults and also aims to ensure that the perry fulfills the organoleptic qualities as outlined in Section 15 above and those particular and peculiar attributes associated with the specific types of perry pears used in the individual product concerned.

The main organoleptic faults include:

- Unwanted haze and sediment in the bottle. Perries are particularly susceptible to "chill hazes" caused by unstable tannins;
- Surface films caused by film yeasts;
- Oiliness. Caused by infection by certain strains of lactic acid bacteria, where the perry will develop an unpleasant oily consistency in the mouth;
- Acetification, which with perry can be caused by the activity of anaerobic lactic acid bacteria, wild yeasts (including film yeasts as above) and the activity of aerobic acetic acid bacteria. This is probably the most common fault found in perries;
- Sulphury - primarily due to the activity of certain strains of fermenting yeast (particularly wild yeasts) and nutrient deficiency. In addition, excess and uncontrolled use of sulphur dioxide can result in an unpleasant "sulphitic" (burnt match) aroma;
- Oxidised. Stale, leathery, papery and sherry-like characteristics can readily spoil a perry that has

## THE THREE COUNTIES and WELSH MARCHES PERRY PRESIDIUUM PROTOCOL

- had excessive exposure to air;
- Mousiness. An extremely unpleasant flavour and after-taste reminiscent of rodents, that can result due to the activity of certain strains of lactic acid bacteria and contamination by the wild yeast - *Dekkera/Brettanomyces*;
- A range of other off-flavours can be found in perries, which include excess diacetyl (Butterscotch), volatile phenols ("Band-aid", medicinal, farmyard), rancidity, mustiness, mouldy and cheesy.
- Perries that are "out of balance" in terms of sweetness / acidity / tannin or any other key attribute are also viewed as faulted.

(It should be noted, that the careful and controlled use of sulphur dioxide is extremely effective in controlling many of the sensory faults that can be caused by the contamination and activity of spoilage micro-organisms).

This draft protocol was compiled by T.Oliver from submissions from J. Chapman, F.Mac, P.Mitchell, T.Oliver, M.Penney, P.Stephens with further analysis from J.Fleming and M. Harris.