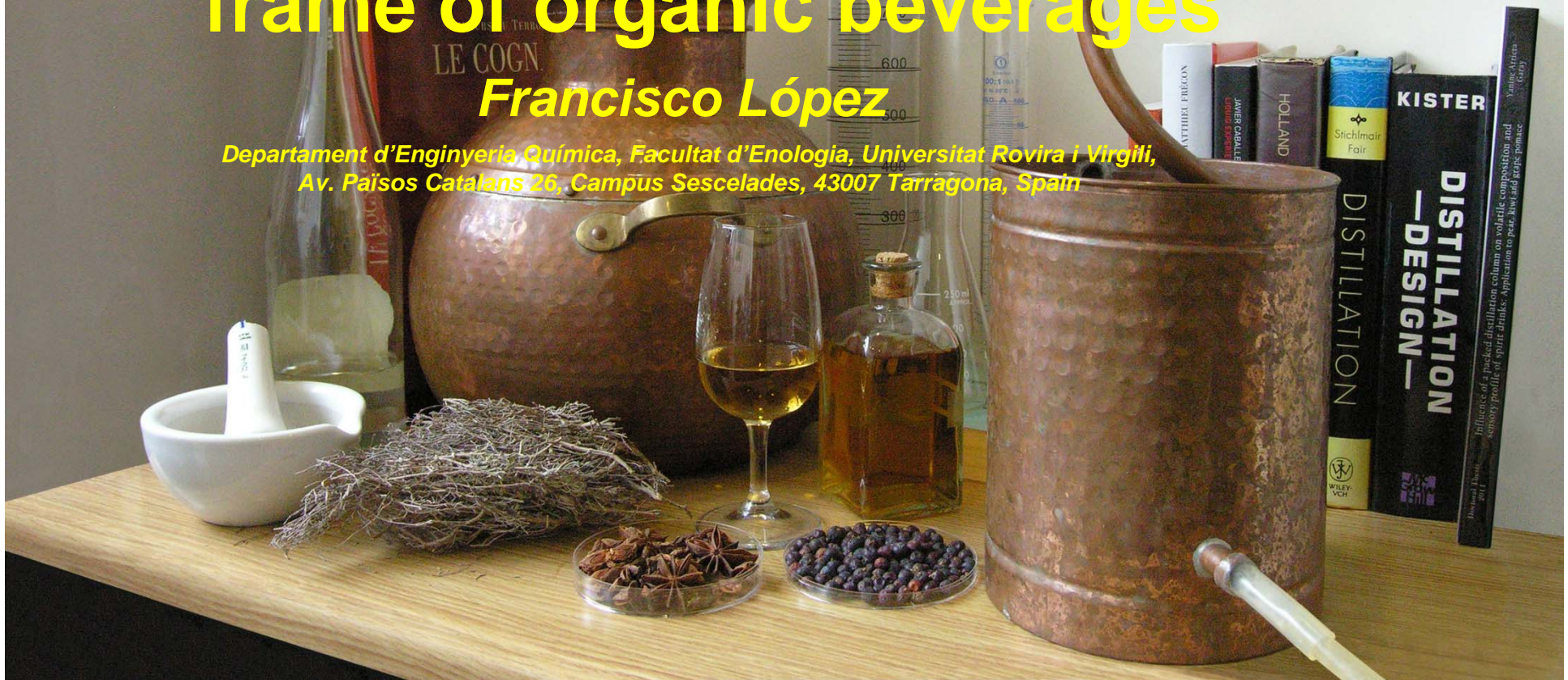




Distillates from grapes in the frame of organic beverages

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To drink, or not to drink?

that is the question

Organic or not organic?

that is the second question

- **Spirits drink**

- **is an alcoholic beverage with the following requirements:**

- (a) it is intended for human consumption;**

- (b) it possesses particular organoleptic qualities;**

- (c) it has a minimum alcoholic strength by volume of 15 %, ...;**

- (d)**

- **Spirits drink**

- **'distillation'** means a **thermal separation** process involving one or more separation steps intended to achieve certain organoleptic properties or a higher alcoholic concentration or both, regardless of whether such steps take place under normal pressure or under vacuum, due to the distilling device used; and can be single or multiple distillation or re-distillation;

- **Spirits drink**

- **‘ethyl alcohol of agricultural origin’** is a liquid which complies with the following requirements:

- (a) it has been obtained exclusively from **products listed in Annex I** to the Treaty;
- (b) it has **no detectable taste other than that of the raw materials** used in its production;
- (c) its **minimum alcoholic strength by volume is 96,0 %**;
- (d) its **maximum levels of residues** do not exceed the following:
 - (i) total acidity (expressed in acetic acid): 1,5 grams per hectolitre of 100 % vol. alcohol;
 - (ii) esters (expressed in ethyl acetate): 1,3 grams per hectolitre of 100 % vol. alcohol;
 - (iii) aldehydes (expressed in acetaldehyde): 0,5 grams per hectolitre of 100 % vol. alcohol;
 - (iv) higher alcohols (expressed in 2-methyl-1-propanol): 0,5 grams per hectoliter of 100 % vol. alcohol;
 - (v) methanol: 30 grams per hectolitre of 100 % vol. alcohol;
 - (vi) dry extract: 1,5 grams per hectolitre of 100 % vol. alcohol;
 - (vii) volatile bases containing nitrogen (expressed in nitrogen): 0,1 grams per hectolitre of 100 % vol. alcohol;
 - (viii) furfural: not detectable.

- **Spirits drink**

- **Distillate of agricultural origin** means an alcoholic liquid which is obtained by the distillation, after alcoholic fermentation, of an agricultural product or products listed in Annex I to the Treaty which does not have the properties of ethyl alcohol or of a spirit drink but still retains the aroma and taste of the raw material(s) used.

alcoholic strength by volume between 80-96,0 %

• Spirits drink

– Categories (New regulation (P8_TA-PROV(2019)0178))

1. Rum
2. Whisky or whiskey
3. Grain spirit
4. Wine spirit
5. Brandy or Weinbrand
6. Grape marc spirit or grape marc
7. Fruit marc spirit
8. Raisin spirit or raisin brandy
9. Fruit spirit
10. Cider spirit, perry spirit and cider and perry spirit
11. Honey spirit
12. Hefebrand or lees spirit
13. Beer spirit
14. Topinambur or Jerusalem artichoke spirit
15. Vodka
16. Spirit (supplemented by the name of the fruit, berries or nuts) obtained by maceration and distillation
17. Geist (supplemented by the name of the fruit or the raw materials used)
18. Gentian
19. Juniper-flavoured spirit drink
20. Gin
21. Distilled gin
22. London gin
23. Caraway-flavoured spirit drink or Kümmel
24. Akvavit or aquavit
25. Aniseed-flavoured spirit drink
26. Pastis
27. Pastis de Marseille
28. Anis or janeževec
29. Distilled anis
30. Bitter-tasting spirit drink or bitter
31. Flavoured vodka
32. Sloe-aromatised spirit drink or pacharán
33. Liqueur
34. Crème de (supplemented by the name of a fruit or other raw material used)
35. Sloe gin
36. Sambuca
37. Maraschino, marrasquino or maraskino
38. Nocino or orehovec
39. Egg liqueur or advocaat or avocat or advokat
40. Liqueur with egg
41. Mistrà
42. Väkevä glögi or spritglögg
43. Berenburg or Beerenburg
44. Honey nectar or mead nectar

Other spirit drinks

1. Rum-Verschnitt
2. Slivovice (70 % plum spirit)
3. Guignolet Kirsch

- **Spirits drink**

- **Categories**

- Without prejudice to the specific rules laid down for each of the categories of spirit drinks 1 to 14 of Annex I, the spirit drinks of those categories shall:
 - a) be produced by alcoholic fermentation and distillation, and exclusively obtained from the raw material provided for under the corresponding category of spirit drinks in Annex I;
 - b) have no addition of alcohol, whether diluted or not;
 - c) not be flavoured;
 - d) not be coloured with anything except caramel used exclusively for adjusting the colour of those spirit drinks;
 - e) not be sweetened except to round off the final taste of the product; the maximum content of sweetening products, expressed as invert sugar, shall not exceed the thresholds set out for each category in Annex I;
 - f) not contain adjuncts other than whole unprocessed items of the raw material from which the alcohol is obtained, and which are mainly used for decorative purposes.

- **Spirits drink**

- **Categories**

- Without prejudice to the specific rules laid down for each of the categories of spirit drinks 15 to 44 of Annex I, the spirit drinks of those categories may:
 - a) be produced from any agricultural raw material listed in Annex I to the Treaty;
 - b) have addition of alcohol;
 - c) contain flavouring substances, natural flavouring substances, flavouring preparations and flavouring foodstuffs;
 - d) be coloured;
 - e) be sweetened.

- **Spirits drink**

- **Categories**

- Without prejudice to the specific rules laid down in Annex II, spirit drinks which do not comply with the specific rules laid down for each of the categories set out in Annex I may:

- a) be produced from any agricultural raw material listed in Annex I to the Treaty or from any foodstuff or both;
 - b) have addition of alcohol;
 - c) be flavoured;
 - d) be coloured;
 - e) be sweetened

- **Spirits drink**

- **Categories**

- A spirit drink that does not comply with the requirements laid down for any of the categories of spirit drinks set out in Annex I shall use the **legal name** **'spirit drink'**.
 - A spirit drink that complies with the requirements for more than one category of spirit drinks set out in Annex I may be placed on the market under one or more of the legal names provided for under those categories in Annex I.

- **Spirits drink**

- **Categories: 4. Wine spirit**

(a) Wine spirit is a spirit drink which meets the following requirements:

- it is produced exclusively by the distillation at less than 86 % vol. of wine, wine fortified for distillation or wine distillate distilled at less than 86 % vol.;
- it has a volatile substances content equal to or exceeding 125 grams per hectolitre of 100 % vol. alcohol;
- it has a maximum methanol content of 200 grams per hectolitre of 100 % vol. alcohol.

(b) The minimum alcoholic strength by volume of wine spirit shall be 37,5 %.

(c) No addition of alcohol, diluted or not, shall take place.

(d)

- **Spirits drink**

- **Categories: 5. Brandy or Weinbrand**

(a) Brandy or Weinbrand is a spirit drink which meets the following requirements:

- i. it is produced from wine spirit to which wine distillate may be added, provided that that wine distillate has been distilled at less than 94,8 % vol. and does not exceed a maximum of 50 % of the alcoholic content of the finished product;
- ii. (ii) it has matured for at least:
 - – one year in oak receptacles with a capacity of at least 1 000 litres each; or
 - – six months in oak casks with a capacity of less than 1 000 litres each;
- iii. (iii) it has a volatile substances content equal to or exceeding 125 grams per hectolitre of 100 % vol. alcohol, and derived exclusively from the distillation of the raw materials used;
- iv. (iv) it has a maximum methanol content of 200 grams per hectolitre of 100 % vol. alcohol.

(b) The minimum alcoholic strength by volume of brandy or Weinbrand shall be 36 %.

(c)

- **Spirits drink**

- **Categories: 6. Grape marc spirit or grape marc**

- (a) Grape marc spirit or grape marc is a spirit drink which meets the following requirements:

- i. it is produced exclusively from grape marc fermented and distilled either directly by water vapour or after water has been added and both of the following conditions are fulfilled:
 - each and every distillation is carried out at **less than 86 % vol.**;
 - the first distillation is carried out in the presence of the marc itself;
 - ii. a quantity of lees may be added to the grape marc that does not exceed 25 kg of lees per 100 kg of grape marc used;
 - iii. the quantity of alcohol derived from the lees shall not exceed 35 % of the total quantity of alcohol in the finished product;
 - iv. it has a volatile substances content equal to or exceeding 140 grams per hectolitre of 100 % vol. alcohol and has a maximum **methanol content of 1 000 grams per hectolitre of 100 % vol. alcohol.**

- (b) The minimum alcoholic strength by volume of grape marc spirit or grape marc shall be **37,5 %.**

- (c)

- **Spirits drink**

- **Categories: 8. Raisin spirit or raisin brandy**

- a) Raisin spirit or raisin brandy is a spirit drink produced exclusively by the distillation of the product obtained by the alcoholic fermentation of extract of **dried grapes of the 'Corinth Black' or Moscatel of the Alexandria varieties**, distilled at **less than 94,5 % vol.**, so that the distillate has an aroma and taste derived from the raw materials used.
 - b) The minimum alcoholic strength by volume of raisin spirit or raisin brandy shall be 37,5 %.
 - c)

- **Spirits drink**

- **Categories: 12. Hefebrand or lees spirit**

- a) Hefebrand or lees spirit is a spirit drink produced exclusively by the **distillation at less than 86 % vol.** of lees of wine, lees of beer or lees of fermented fruit.
- b) The minimum alcoholic strength by volume of Hefebrand or lees spirit shall be **38 %**.
- c)
- d) .
- e) ..
- f) ...
- g) The **legal name 'Hefebrand'** or 'lees spirit' shall be **supplemented by the name of the raw materials** used.

- **Spirits drink**

- **Categories: 24. Akvavit or aquavit**

- a) Akvavit or aquavit is a spirit drink **flavoured with caraway or dill seeds or both**, produced by using ethyl alcohol of agricultural origin flavoured with a distillate of plants or spices.
- b) The **minimum alcoholic strength** by volume of akvavit or aquavit shall be **37,5 %**.
- c) Natural flavouring substances or flavouring preparations or both may additionally be used, but the flavour of these drinks shall be largely attributable to distillates of caraway (*Carum carvi* L.) or dill (*Anethum graveolens* L.) seeds or both, the **use of essential oils being prohibited**.
- d) The bitter substances shall not obviously dominate the taste; the dry extract content shall not exceed 1,5 grams per 100 millilitres.

- **Spirits drink**

- **Categories: 21. Distilled gin**

- a) Distilled gin is one of the following:

- i. **a juniper-flavoured spirit drink produced exclusively by distilling ethyl alcohol of agricultural origin with an initial alcoholic strength of at least 96 % vol. in the presence of juniper berries (*Juniperus communis* L.) and of other natural botanicals, provided that the juniper taste is predominant;**
 - ii. the combination of the product of such distillation and ethyl alcohol of agricultural origin with the same composition, purity and alcoholic strength; flavouring substances or flavouring preparations as specified in point (c) of category 20 or both may also be used to flavour distilled gin.

- b) The **minimum alcoholic strength** by volume of distilled gin shall be **37,5 %**.

- c) Gin produced simply by adding essences or flavourings to ethyl alcohol of agricultural origin shall not be considered distilled gin.

- d) The term 'distilled gin' may be supplemented by or incorporate the term 'dry' if it does not contain added sweetening exceeding 0,1 grams of sweetening products per litre of the final product, expressed as invert sugar.

- **Spirits drink**

- **Categories: 22. London gin**

a) London gin is distilled gin which meets the following requirements:

- it is produced exclusively from **ethyl alcohol of agricultural origin**, with a **maximum methanol content of 5 grams per hectolitre of 100 % vol. alcohol**, the flavour of which is imparted exclusively through the distillation of ethyl alcohol of agricultural origin in the presence of all the natural plant materials used;
- the **resulting distillate contains at least 70 % alcohol by vol.**;
- any further ethyl alcohol of agricultural origin that is added shall comply with the requirements laid down in Article 5 but with a maximum methanol content of 5 grams per hectolitre of 100 % vol. alcohol;
- it is not coloured;
- it is not sweetened in excess of 0,1 grams of sweetening products per litre of the final product, expressed as invert sugar;
- it does not contain any other ingredients than the ingredients referred to in points (i), (iii) and (v), and water.

b) The **minimum alcoholic strength** by volume of London gin shall be **37,5 %**.

c) The term 'London gin' may be supplemented by or incorporate the term 'dry'.

- **Spirits drink**

- **Geographical indications**

- Whereas 26. ... **Geographical indications protected under Regulation (EC) No 110/2008 should automatically be protected under this Regulation and listed in the electronic register.** The Commission should complete the verification of geographical indications contained in Annex III to Regulation (EC) No 110/2008, in accordance with Article 20 of that Regulation.

- Article 37. Existing registered geographical indications.

- **Geographical indications of spirit drinks registered in Annex III to Regulation (EC) No 110/2008** and thus protected under that Regulation **shall automatically be protected as geographical indications under this Regulation.** The Commission shall list them in the register referred to in Article 33 of this Regulation.

- **Spirits drink**
 - **Geographical indications**

Product category	Geographical indication	Country of origin (the precise geographical origin is described)
4. Wine spirit		
	<i>Eau-de-vie de Cognac</i>	France
	<i>Eau-de-vie des Charentes</i>	France
	<i>Eau-de-vie de Jura</i>	France
	<i>Cognac</i>	France
	(The denomination 'Cognac' may be supplemented by the following terms:	
	— <i>Fine</i>	France
	—
	<i>Armagnac</i>	France
	<i>Bas-Armagnac</i>	France
	<i>Haut-Armagnac</i>	France
	
	<i>Aguardente de Vinho Douro</i>	Portugal
	<i>Aguardente de Vinho Ribatejo</i>	Portugal

- **Spirits drink**

- **Geographical indications**

Product category	Geographical indication	Country of origin (the precise geographical origin is described in the technical file)
5. <i>Brandy/Weinbrand</i>		
	<i>Brandy de Jerez</i>	Spain
	<i>Brandy del Penedés</i>	Spain
	<i>Brandy italiano</i>	Italy
	<i>Brandy Αττικής/Brandy of Attica</i>	Greece
	<i>Brandy Πελοποννήσου/Brandy of the Peloponnese</i>	Greece
	<i>Brandy Κεντρικής Ελλάδας/Brandy of central Greece</i>	Greece
	<i>Deutscher Weinbrand</i>	Germany
	<i>Wachauer Weinbrand</i>	Austria
	<i>Weinbrand Dümstein</i>	Austria
	<i>Pfälzer Weinbrand</i>	Germany
	<i>Karpatské brandy špeciál</i>	Slovakia
	<i>Brandy français/Brandy de France</i>	France

- **Spirits drink**
 - **Geographical indications**

Product category	Geographical indication	Country of origin (the precise geographical origin is described in the technical file)
6. Grape marc spirit		
	<i>Marc de Champagne/Eau-de-vie de marc de Champagne</i>	France
	<i>Marc d'Aquitaine/Eau-de-vie de marc originaire d'Aquitaine</i>	France
	
	<i>Aguardente Bagaceira Bairrada</i>	Portugal
	<i>Aguardente Bagaceira Alentejo</i>	Portugal
	<i>Aguardente Bagaceira da Região dos Vinhos Verdes</i>	Portugal
	<i>Aguardente Bagaceira da Região dos Vinhos Verdes de Alvarinho</i>	Portugal
	<i>Orujo de Galicia</i>	Spain
	<i>Grappa</i>	Italy
	
	<i>Τσικουδιά/Tsikoudia</i>	Greece
	<i>Τσικουδιά Κρήτης/Tsikoudia of Crete</i>	Greece
	<i>Τσίπουρο/Tsipouro</i>	Greece

- **Spirits sector**

- **The spirits industry is less open than the winery industry.**
- **Controlled by big corporations.**
- **Large difficulties to create small and craft distilleries.**

Nevertheless actually there is a new tendency to increase the small, micro and nano distilleries.

- **Spirits sector**
- **Big corporations: around 62000 Meuros**
 - 1. **SUNTORY**, 1899, 19500 Meuros, family Saji & Torii, Japan
 - 2. **BACARDI**, 1862, 16300 Meuros, family Bacardí, Cuba
 - 3. **PERNOD RICARD**, 1805, 6700 Meuros, family Ricard, France
 - 4. **BROWN-FORMAN**, 1870, 5700 Meuros, family Brown, U.S.A.
 - 5. **CAMPARI**, 1860, 5100 Meuros, family Caravoglia, Italy

- **Spirits sector**

- **Big distributors:**

- 1. Diageo. 126 million cases/year. London, England**

- Notable Brands: Johnnie Walker, Crown Royal, J&B, Smirnoff, Ketel One, Captain Morgan

- 2. United Spirits Limited. 125 million cases. Bangalore, India**

- Notable Brands: McDowell's and Black Dog whiskeys, Pinky and White Mischief vodkas, Celebration rum

- 3. Pernod Ricard. 123 million cases/year. Paris, France**

- Notable Brands: Absolut, Jameson, Beefeater, Malibu, Kahlua, Glenlivet

- 4. Suntory/Beam. 54 million cases/year. Osaka, Japan**

- Notable Brands: Hibiki and Yamazaki whiskeys; Jim Beam, Courvoisier, Maker's Mark, Sauza; Orangina, Schweppes

- 5. Bacardi. 38 million cases/year. Hamilton, Bermuda**

- Notable Brands: Bacardi, Dewar's, Grey Goose, Bombay Sapphire

- Spirits sector**

**The Brand Champions data is listed to one decimal place for ease of reading, but the percentage changes are based on the full data supplied. All brand data is supplied in millions of nine-litre cases.*

Cognac (figures: million 9l case sales)

BRAND	OWNER	2014	2015	2016	2017	2018	%+/-
Hennessy	LVMH	5.9	6.3	7.0	7.6	7.8	2.6%
Martell	Pernod Ricard	1.9	2.2	2.1	2.3	2.6	16.4%
Rémy Martin	Rémy Cointreau	1.7	1.9	2.0	2.1	2.3	7.5%
Courvoisier	Beam Suntory	1.4	1.3	1.3	1.3	1.4	4.7%

(*) : <https://www.thespiritsbusiness.com/2019/06/cognac-brand-champion-2019-martell/>

- Spirits sector**

**The Brand Champions data is listed to one decimal place for ease of reading, but the percentage changes are based on the full data supplied. All brand data is supplied in millions of nine-litre cases.*

Brandy (figures: million 9l case sales)

BRAND	OWNER	2014	2015	2016	2017	2018	%+/-
Emperador	Alliance Global Group	33.0	30.5	28.0	27.1	25.3	-6.6%
Dreher	Gruppo Campari	3.4	3.4	3.3	3.4	3.1	-7.5%
Old Admiral Brandy	Radico Khaitan	3.5	3.3	3.5	3.1	3.0	-3.2%
McDowell's No.1 Brandy	United Spirits	3.5	3.3	3.6	1.7	1.4	-16.3%
Torres Brandy	Torres	1.4	1.4	1.3	1.4	1.3	-0.7%
Old Kenigsberg	Alliance 1892 Brandy Factory	1.5	1.4	1.3	1.3	1.3	0.8%
Officer's Choice Brandy	Allied Blenders & Distillers	0.7	1.1	1.2	1.0	1.1	14.0%
Christian Brothers	Heaven Hill Brands	1.1	1.1	1.1	1.1	1.1	2.4%

(^o): <https://www.thespiritsbusiness.com/2019/06/brandy-brand-champion-2019-officers-choice-brandy/>

- Spirits sector**

RANK	BRAND	OWNER	CATEGORY	2014	2015	2016	2017	2018	%+/-
1	Jinro	Hite-Jinro	Local – Soju	70.9	73.8	74.0	76.8	78.0	1.6%
2	Officer's Choice Whisky	Allied Blenders & Distillers	Whisky – Indian	28.4	32.9	32.9	32.0	34.0	6.3%
3	McDowell's Whisky	United Spirits	Whisky – Indian	13.4	25.7	26.6	26.4	29.0	10.0%
4	Smirnoff	Diageo	Vodka	25.6	25.8	25.7	26.0	26.0	0.0%
5	Emperador	Alliance Global Group	Brandy	33.0	30.5	28.0	27.1	25.3	-6.6%
6	Imperial Blue	Pernod Ricard	Whisky – Indian	14.1	17.5	18.0	19.0	22.7	19.3%
7	Royal Stag	Pernod Ricard	Whisky – Indian	16.1	17.3	18.0	18.7	21.6	15.5%
8	Tanduay	Tanduay Distillers	Rum	17.0	16.5	16.6	19.5	20.1	3.1%
9	Johnnie Walker	Diageo	Whisky – Scotch	17.9	17.6	17.4	18.3	18.9	3.5%
10	Bacardí	Bacardi	Rum	18.2	17.4	17.2	16.8	17.1	2.0%
11	Cachaça 51	Companhia Müller de Bebidas	Local – Cachaça	18.0	16.8	16.7	14.7	13.3	-9.3%
12	Jack Daniel's	Brown-Forman	Whiskey – American	11.7	12.2	12.5	12.9	13.3	2.7%
13	Captain Morgan	Diageo	Rum	10.4	10.3	10.7	11.7	11.7	0.2%
14	Original Choice	John Distilleries	Whisky – Indian	10.6	10.7	10.1	10.3	11.5	12.0%
15	Absolut	Pernod Ricard	Vodka	11.1	11.0	11.0	11.3	11.3	-0.8%

- **Organic Spirit Production Technology.**
- European spirit beverage industry is the largest in the world.
- Wide variety of plant materials used: grains, potatoes, sugar beets, sugar cane, and **grapes**. (approximately 85% of spirits produced from cereal grains).
- Quality of distilled beverages depends on the type and quality of raw materials as well as the methods of starch liberation, fermentation, distillation, ageing, and blending.
- Spirit industry is dominated by **large corporations**, but there are also numerous **craft distilleries** producing regional spirit beverages.
- Due to worldwide demand for craft and niche products, new, original, organic spirit beverages. Portfolio of small distilleries to reinforce their competitiveness and attract new customers interested in nonstandard products.
- There is an increase in micro-distilleries worldwide. Tourism increase due to the interest in trying regional produce.
- This kind of industry is very conscious of environmental and social issues, including energy saving, waste management, as well as the promotion of responsible alcohol consumption.

- **Organic Spirit Production Technology.**
- Agricultural producers (Europe and USA) are using second quality fruits and even vegetables to produce newly manufactured neutral spirits.
- These spirits are then used to produce a variety of fruit brandies, bourbon, malt or blended whiskies, vodka, rum, gin, brandy and other niche beverage products.
- For example: Recent changes in legislation together with reduction in licensing fees in the US are enabling the establishment and growth of micro-distilleries to compliment winery production, especially in agri-tourism businesses such as restaurants.
- These small micro-distilleries lead the way for innovation of new products and increased revenues to rural and regional areas from both manufacturing and tourism.
- Alembics are relatively easy to operate; However, training is necessary, as well as in the fermentation and post-handling of alcoholic products. Necessary support and incentives to develop this type of business.

- **Organic Spirit Production Technology.**
- The requirements increasing of foods and alcoholic beverages, especially organic products, makes necessary achieve technological and product innovations to improve the quality of traditional spirits and develop new: original spirit beverages.
- According to Council Regulation (EC) No 834 (2007) on organic production and labeling of organic products, organic production is an overall system of farm management and food production for products manufactured using natural substances and processes.
- At the same time, such production should meet best environmental practices, as well as promote the preservation of natural resources and ensure high animal welfare standards, and also contribute to rural development.
- Organic food should be produced in uncontaminated areas and without the use of chemical plant protection products, mineral fertilizers, antibiotics, chemical additives, or genetically modified plants or feeds.

- **Organic Spirit Production Technology.**
- It is important the quality of the final product, because consumers expect products with an increased content of nutrients, vitamins, and mineral compounds, and with superior sensory qualities as compared to conventional food.
- The production of organic food is monitored and subjected to regular inspections by certifying bodies.
- Organic food certification affects production and packaging, animal welfare, wildlife conservation, elimination of non-essential and harmful food additives.
- Organic food certification involves a wide range of standards concerning production and packaging, animal welfare, wildlife conservation, as well as abolishment of nonessential and harmful food additives.

- **Organic Spirit Production Technology.**
- Organic products must be submitted to a control system as set out under European Council Regulation 834 (2007) on organic production.
 - In the **United Kingdom**, the largest certification body is the Soil Association, whose standards exceed the minimum requirements of EU organic regulations in many areas.
 - In the **United States**, the **Department of Agriculture (USDA)**, which regulates the country's organic program. All organic alcoholic beverages must also comply with the regulations of the Alcohol and Tobacco Tax and Trade Bureau (TTB). The TTB requires that alcoholic beverage labels be reviewed through the Certificate of Label Approval (COLA) application process.
- In the EU, the Commission has not established detailed rules for the implementation of Council Regulation (EC) n° 834 (2007), referring to the production of organic spirit
- **The spirits market is very competitive. Therefore, producers must expand their offer by developing new, innovative and organic products to meet consumer demand. As a result, distillers are looking for new raw materials or alternatives to produce original distillates with desirable organoleptic characteristics.**

- **Organic Spirit Production Technology.**
- **Raw material.**
- **Yeast.**
 - Plays a very important role in alcoholic fermentation.
 - Should also be of organic grade if possible.
 - Enrichment of yeast nutrient if is necessary (phosphorus and nitrogen).
 - Legislation on organic food not specify chemical compounds approved for use in the production of agricultural distillates. (diammonium phosphate is permitted in organic wine production (Regulation (EU) No 203/2012).
- **pH**
 - yeast prefers a pH of 4.5–5, distillery mashes reveal higher pH values (approximately 6). The use of sulfuric acid is inconsistent with organic principles, an alternative is lactic acid (widely used in distilleries at the turn of the 20th century .
 - Mash pH may be also reduced by adding spent mash (backset, stillage) obtained from a previous fermentation process, as it is highly acidic and promotes fermentation. The proportion of spent mash should be at least 25% of new mash. This is known as the sour mash technique, used by bourbon and Tennessee whiskey producers. The procedure enhances environmental stability facilitating yeast growth and positively affects the flavor palette.

- **Organic Spirit Production Technology.**

In summary, carefully selected raw materials subjected to well-designed technological processes complying with the principles of organic production yield high-quality agricultural distillates, which may be used in the production of interesting organic spirit beverages after further refinement by rectification or ageing in oak casks

- **Sustainability.**
- Wine (wine spirits) is a product strongly associated with the areas and regions where it is produced, and any relocation of production is problematic.
- In addition, in consumer purchasing decisions, the sustainability image associated with the product is being increasingly valued.
- There are multiple adaptation and mitigation actions that can be implemented in wine (wine spirits) activities:
 - Not only look the wine process strictly speaking.
 - The use made of the inputs, including water and energy, which contribute significantly to the water and carbon footprint of the product.
- This does not require only modifying the production processes, but focuses on the management of the resources used.

- **Sustainability.**
- **Regarding water:**
 - its reuse and recycling in the winery and vineyard,
 - the increase in the efficiency of its use in drip irrigation
 - the application of deficit irrigation strategies.
- **Related to energy**, there is the paradox that adaptation to climate change may require higher consumption in refrigeration to compensate for high temperatures in the cellar, **Fortunately, energy from renewable sources can be used to reduce emissions.**
- Additionally, it is necessary to know the energy consumption itself and the energy efficiency measures.
- In general, to mitigate global warming it is necessary to reduce the carbon footprint of the product, reducing the CO2 emissions of the activity, of which more than 21% correspond to the use of energy.
 - **Consequently, energy is a fundamental factor in the sustainability of the winemaking process.**

Making a distillery more sustainable, implies changes, investment needs, but despite this, it is possible to achieve it.

How to be a sustainable distillery?

- **How to be a sustainable distillery?**
- **Use local raw materials as much as possible.**
 - It has a positive ripple effect, from reducing our carbon footprint to supporting neighbors suppliers.

- **How to be a sustainable distillery?**
- **Use Green Energy.**
 - **Powering distillery with green energy, reducing the environmental impact of operations, supporting energy independence and reducing dependence on fossil fuels.**

- **How to be a sustainable distillery?**
- **Re-Use Yeast.**
 - Yeast is also a critical component of the distillation process and making an additional effort to maintain yeast is another way to compromise with sustainability.
 - The choice is simple: you can buy more yeast when you stay, or you can reuse yeast again from the previous batch.
 - We need to work harder to keep yeast alive, but it has a really positive impact on the environment and the product.

It is more consistent reusing yeast

- **How to be a sustainable distillery?**
- **Re-Channel Waste Streams.**
 - **Waste is one of the most important problems of any distillery or winery, but it is also one of the easiest ways to make sustainable actions.**
 - **Transform a waste to byproduct represents a great effort to create a value-added product from something that would typically incur a cost to dispose.**
 - **Use vinasse for biofuel, adobes, etc...**

- **How to be a sustainable distillery?**
- **Monitor Consumption.**
 - **Simply being aware of how much energy is consumed allows for making more sustainable adjustments.**
 - **Other aspects:**
 - **recycle distillation cooling water**
 - **install water meters to enable us to monitor and reduce consumption further.**

- **How to be a sustainable distillery?**
- **Reduce Water Waste.**
 - Reducing water waste is key in achieving sustainability at any distillery.
 - Distilleries use a tremendous amount of water. It was unbelievable how much water could be wasted in the cooling process.

- **How to be a sustainable distillery?**
- **Use Eco-Conscious Packaging.**
 - **A heavy glass bottle can evoke a sense of luxury for the consumer, but it may not necessarily be the best option for the environment.**
 - **Change the tendency of heavy glass bottles for light bottles, thus reducing the consumption of raw materials.**
 - **Bottles made from locally recycled glass, which avoids the need for more natural resources and uses less energy.**
 - **The use of biodegradable packaging to send products to consumers reduces the amount of plastic.**

- **How to be a sustainable distillery?**
- **Summary.**
 - **Small operations have the ability to reduce their environmental impact considerably.**
 - **From:**
 - sourcing ingredients locally
 - to re-thinking packaging
 - to discover a more intelligent way to manage a by-product
 - **Simply, the desire of a company to dedicate time and energy to a greener production.**

- **How to taste a distillate?**
- Distillates offer rich and extraordinary qualities to those who can appreciate them and those who decide to meet them in their deepest essence, a world full of aromas and amazing flavors.
- The tasting technique is different from that of wine.
- Goal is the same: the measure of the quality of the product: aromas.
- In spite of this common objective, the aromas of wines and distillates are very different, due to nature, intensity and quality. And the same can be said for appearance and taste: all the factors that require a proper tasting technique.

- **How to taste a distillate?**
- The most frequent errors that wine tasters make when faced with a distillate are:
 - Sink your nose to the glass as it would be for the wine and, at the same time, stir the glass while looking for subtle and hidden aromas, relying on the magic of aeration.
 - Remember that alcohol in distillates is present in much higher amounts than in any wine, the usual volume of alcohol is 40% v/v, and that the volatility of alcohol efficiently transports the aromas up to and all without the help of a vigorous aeration of the cup.
 - Another common mistake is the amount of distillates introduced into the mouth: it is enough with about 2 or 3 mL, much lower than that used to taste the wine.

- **How to taste a distillate? Visual evaluation**
- Distillate is colorless, limpid and crystalline, with no visual defects.
- The evaluation of a distilled appearance must be considered according to its type.
- Substances in suspension are not allowed.
- Distillates aged in wood are a bit more difficult. Each type of wood gives to the distillate different colors, from pale straw to brown mahogany and, of course, depending on the aging time. However, these color shades can also be altered or accentuated by adding candy, an ingredient allowed in the production of many distillates.
- Excluding the case of a quite old distillate, the color will never show shades or shades of red. In the case that this quality is in young distillates, it is more likely that an excess amount of caramel has been added

- **How to taste a distillate? Olfactory evaluation**
- Ethanol is a very volatile substance that can be caused by a hot and hot reaction, and therefore obliges the taster to temporarily interrupt the tasting.
- Remember ethanol, it transports the molecules of other aromas, therefore, plays a fundamental role in the general perception of the distilled aromas.
- The best distillates are in which the burning and spicy perception of alcohol is very low, allowing the clear perception of other aromas. If this aroma is the main one, the distillate is not of good quality. Remember the influence of the temperature, the shape and volume of the cups, as well as the distillation and aging.
- The aromatic nature and quality of the distillates change according to the type and production techniques. For example, the aromas of a young Grappa not aged in wood and cognac (both refined and with pleasant and elegant aromas) are completely different.

- **How to taste a distillate? Olfactory evaluation**
- The most common technique for the olfactory evaluation of distillates usually consists of making four different smells, made at different distances, and the first three are made without removing the cup.
 - The first snuff is done without moving the cup while holding the nose at a distance of about 5 cm. This first is particularly useful for aged distillates in wood, since it allows the appreciation of the vanilla and wood aromas.
 - The second smell will be placed by placing the nose near the edge of the glass and without shaking the cup. In this phase, the aromas that belong to the floral family will be appreciated.
 - The third smell becomes once again without removing the cup by placing the nose within it. In this way, the aromas of the fruit family will be appreciated.
 - Finally the cup of the nose moves away and it will rest and it will take to the nose. In this smell, the fusion of all aromas and, in particular, aromas of nuts, vegetables, herbs, flowers and nuts, as well as the aromas that pass from the wood to the distillate will be appreciated.
 - In all these phases, the ethyl aroma can never alter excessively the perception of other aromas, since it would be considered a defect.

- **How to taste a distillate? Taste evaluation**
- Ethanol effect is important, it has a basically sweet taste, therefore, it will be normal to find this sensation in the distillates.
- In a recent distillate it can be perceived, in varying quantities, sweet, sour and bitter tastes. Aging taste can be balanced by the sweetness of ethanol and the possible softness caused by aging in wood.
- The salty taste is never present in a freshly distillate; but it can be found in minimal quantities due to the water used to reduce the alcohol strength.
- Ethanol has a caustic effect in the mouth, a burning sensation, an effect that is accentuated by a higher concentration of alcohol in the distillate.
- The alcohol capacity to dissolve quickly is a factor of quality: low caustic shock in the mouth, higher quality, finesse and elegance of a distillate.

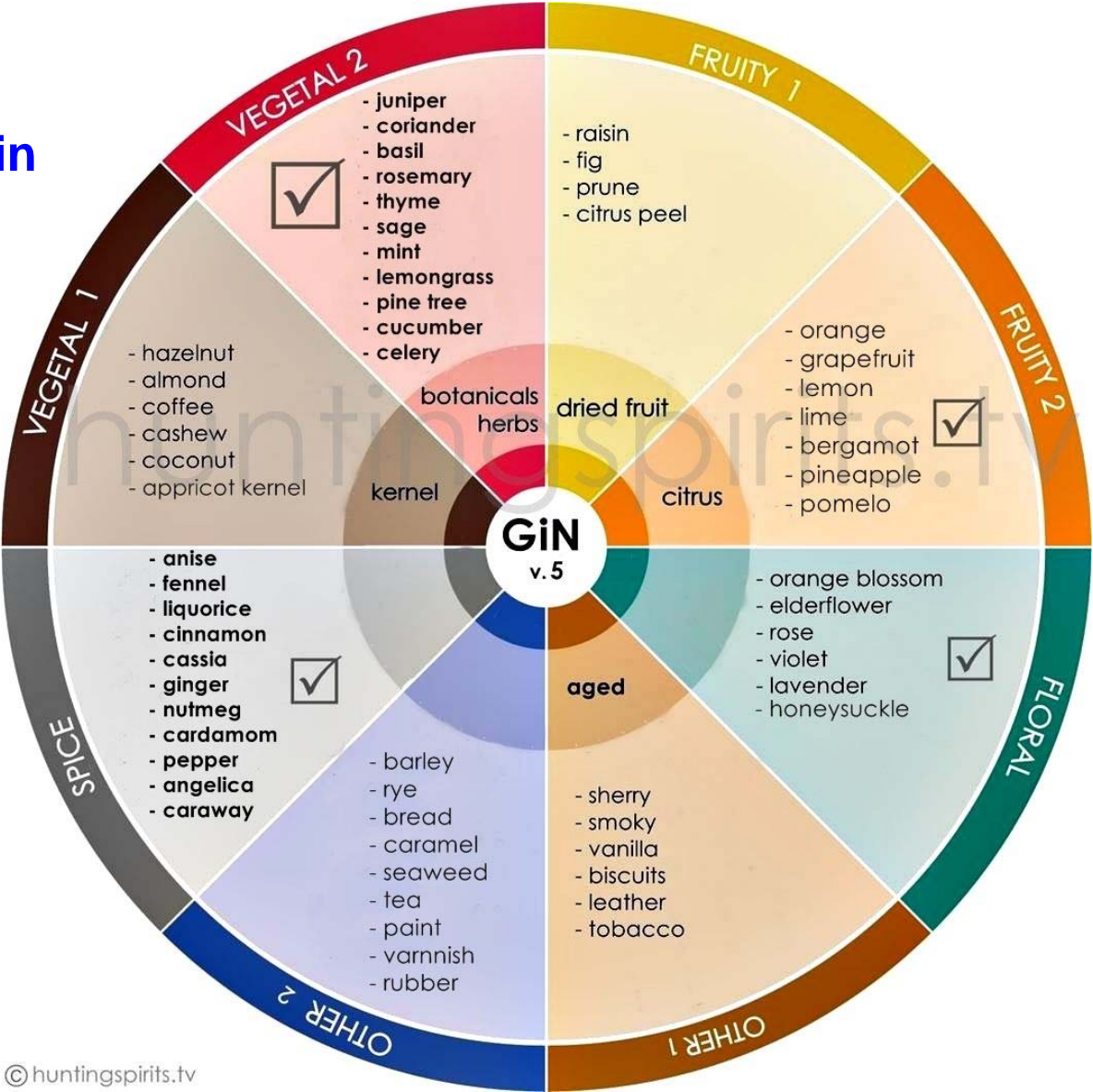
- **How to taste a distillate? Taste evaluation**
- Take a few milliliters of distillate: this will allow the appreciation of the flavors and the body.
- The distillates aged in wood concentrate their flavors and their body, therefore, the greater the structure perceived in the mouth during this phase, the greater the time of aging in barrel.
- It should be remembered that any addition of caramel will increase the body of the distillate, as well as its taste basically bitter and sweet. After that, a slightly higher amount of distillate will be introduced in the mouth in order to evaluate the qualities perceived in the first tasting, in particular, the quality of the flavors, any excessive dryness due to wood tannins and candy.
- Ethanol has, basically, a sweet taste, but this sensation can be accentuated by adding caramel or sugar syrups that allow the production of some distillates and are generally used in low quality products to round off the "hardness" of a distillate.
- As in the case of wine, the intensity and persistence of flavors will be evaluated, while focusing on ethanol that will be perceived initially and dissolved quickly. Special attention will be paid to the final bitter taste, which will never be excessive, as well as any possible sour taste covered by ethanol and that should be noticeable

- **How to taste a distillate? Balance and harmony**
- As for wine, even in distillates, an important quality factor expressed by the balance and harmony of each phase of tasting is due to its aromas and taste
- Ethanol, although present in large quantities, will never disturb the olfactory and gustatory perception of a distillate. The aromas must be clean and clear.
- Taste harmony is basically expressed in the balance of flavors, where none of them predominates excessively over others and leaving their mouths in perfect balance.
- A distillate of mediocre quality will tend, for example, to express an excessive sweet taste, due to sugar or caramel added, probably in excess quantities.
- Finally, remember that there are many ways to age a distillate without waiting for years in a barrel. In fact, high amounts of caramel, wood chips or sugar syrups can be used in high quantities to make "old" a distillate of just a few months.

- **Flavour wheel Cognac**



• Flavour wheel Gin



- Flavour wheel General

