



ALCOHOL CONSUMPTION

In the WHO European region, the average unrecorded adult per capita alcohol consumption was 2.67 L pure ethanol in 2005, which is 22% of the total alcohol consumption in the region.

UNRECORDED

'Unrecorded' is an overview category for any kind of alcohol that is not taxed as alcoholic beverage or registered in the jurisdiction where it is consumed. Unrecorded alcohol products include homemade informally produced alcohols, illegally produced or smuggled alcohol products, as well as surrogate alcohol that is not officially intended for human consumption. Some common examples of surrogate alcohol include mouthwash, perfumes, and eau-de-colognes, officially classified as 'shaving water' or 'mouthwash'.

Illicit alcohol and its components

News from a study on unrecorded alcohol production

Unrecorded alcohol is a category (see the blue sidebar) that covers different types of ethanol and should be taken into account due to its consumption throughout all regions of the globe. For example, there are significant amounts of production and consumption of homemade beverages in Sub-Saharan Africa and Latin America; and surrogate alcohol consumption is widely consumed in Russia and countries of central and eastern Europe.

One of the main problems of these alcohols is that some of them, such as homemade beverages, are not subject to quality controls which would ensure that their composition is free of contaminants or toxic compounds that could potentially harm health.

Problematic compounds can come from the natural processes of alcohol fermentation (e.g. higher-alcohols, acetaldehyde), environmental pollution (e.g. accumulations of metals, lead, nitrate, pesticides) and/or the presence of chemical compounds related to industrial activities (e.g. methanol, diethyl phthalate); all of which can be carcinogenic, hepatotoxic, or teratogenic.

But surprisingly, there is only a very limited scientific literature studying the composition of homemade and surrogate alcohols, and identifying their potential harm to health.

To rectify the paucity of scientific data, a group of researchers of the AMPHORA project (Work Package 7) focused its efforts on analyzing the chemical composition of illicit and unrecorded types of alcohol, mainly homemade beverages.

For this purpose, homemade samples from 16 European countries were collected and analyzed in the Chemisches und Veterinäruntersuchungsamt Karlsruhe (CVUAKA) facilities, under the supervision of Dr. Dirk Lachenmeier.



A total number of 115 samples of unrecorded alcohol were analysed (81 spirits, 34 wines). The main results of these analyses are shown in Table 1.

Briefly, half of the beverages presented abnormal parameters, the most common being ethyl carbamate contamination (n=29), and the presence of copper (n=20), manganese (n=16) and acetaldehyde (n=12). Apart from 10 samples, all other parameters (including methanol, higher alcohols,

phthalates) did not exceed normative thresholds.

Although it is difficult to demonstrate causality between unrecorded alcohol consumption and ill-health, it is important to make the population aware of the potential danger of these beverages.

At present, additional analyses are being carried out using a more sensitive technical approach and including samples from new countries such as Russia and Brazil.

FURTHER DETAILS

- Rehm J *et al.* (2010) [Drug and Alcohol Review](#), 29: 426-436.
- Lachenmeier DW *et al.* (2011) [Addiction](#), 106 Suppl 1:20-30.
- Lachenmeier DW *et al.* (2011). [Adicciones](#), 23(2): 133-140.

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Country	Unrecorded consumption: L pure alcohol per capita (% total consumption)	Sample number	Type of alcohol	Samples with qualitative problems (%)	Quality problems detected (number of positive samples)
Albania	2.1 (31%)	1	Spirit (Raiki, grape spirit)	1 (100%)	EC (1), Cu (1)
Austria	0.6 (5%)	30	Stone-fruit spirit	10 (33%)	EC (9), MeOH (2), HA (1), Cu (1)
Croatia	2.5 (17%)	6	Spirit (pear, plum and marc)	6 (100%)	EC (6), Cu (6)
Czech Republic	1.5 (9%)	8	Spirits (predominantly stone-fruit spirits)	2 (25%)	EC (2), Pb (1), Cd (1)
Germany	1.0 (8%)	10	Spirits (from sugar, fruits)	5 (50%)	EC (4), AA (1), DBP (1), Cu (1)
Hungary	4.0 (25%)	2	Spirit and wine	2 (100%)	EC (1), AA (1), Cu (1), B (1)
Italy	2.4 (22%)	2	Spirit and beer	1 (50%)	Cu (1)
The Netherlands	0.5 (5%)	3	Spirit, beer, wine	2 (67%)	AA (1), Cu (1), Mn (1)
Norway	1.6 (20%)	4	Spirits (smuggles alcohol)	0 (0%)	-
Poland	3.7 (27%)	3	Spirits (vodka, relabelled)	1 (33%)	Cu (1)
Romania	4.0 (26%)	9	Spirits and wine	9 (100%)	EC (4), AA (2), Cu (3), Pb (1), Mn (2), B (2), Al (1)
Russia	4.7 (30%)	1	Spirit (smagon)	0 (0%)	-
Slovenia	3.0 (20%)	14	Spirits and wine	12 (86%)	AA (6), EA (1), Cu (1), Pb (2), Ni (2), Mn (9), B (1)
Spain	1.4 (12%)	18	Spirits and wine	7 (39%)	EC (2), AA (1), Cu (3), Mn (4), B (1), Al (1)
Switzerland	0.5 (5%)	1	Spirits (absinthe)	0 (0%)	-
UK	1.7 (13%)	3	Spirits (vodka, counterfeit)	0 (0%)	-

Table 1: Quality problems in unrecorded alcohol from 16 European countries. EC ethyl carbamate, MeOH methanol, Cu copper, HA higher alcohols, Pb lead, Cd cadmium, AA acetaldehyde, DBP Di-Butyl phthalate, B boron, Mn manganese, Al aluminium, EA ethyl acetate, Ni nickel