



**JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON FATS AND OILS
25th Session**

Kuala Lumpur, Malaysia, 27 February - 3 March 2017

**COMMENTS ON DISCUSSION PAPER ON THE INCLUSION OF PROVISIONS FOR WALNUT OIL,
ALMOND OIL, HAZELNUT OIL, PISTACHIO OIL, FLAXSEED OIL AND AVOCADO OIL IN THE
STANDARD FOR NAMED VEGETABLE OILS (CODEX STAN 210-1999)**

(Comments of European Union, India and Turkey)

EUROPEAN UNION

The European Union and its Member States (EUMS) would like to thank Iran for leading the work on the revision of the discussion paper.

The EUMS support the new work as proposed in Appendix I of document CX/FO 17/25/11.

INDIA

Section 3: Essential Composition and Quality Factors:

Table 1: Fatty acid composition of vegetable oils as determined by gas liquid chromatography from authentic samples (expressed as percentage of total fatty acids)

India would like to amend the range of Stearic Acid- C18:0 in Flax/linseed oil. The proposed range will be 2.0-6.0

Rationale:

Depending upon region to region, area to area, variety to variety and fatty acid profile changes, Stearic Acid-C18:0 ranges up to 6 percent. Therefore, we may consider the range from 2.0 to 6.0.

TURKEY

According to FAOSTAT records;

Hazelnut plantation area of the world in 2014 was 915.550 hectares and 701.141 hectares of this area was in Turkey.

World production of hazelnut in 2014 was 713.451 tons and 450.000 tons was produced in Turkey.

TURKSTAT data for hazelnut production of Turkey between the years 2008-2016 is shown in Table-1.

Table 1: Hazelnut production in Turkey

Crop Years	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Production (tons)	800.791	500.000	600.000	430.000	660.000	549.000	412.000	646.000

Turkey considers that inclusion of walnut, almond, hazelnut, pistachio, flaxseed and avocado oil into the Standard for Named Vegetable Oils does not necessary.

On the other hand, limits for fatty acid and sterol compositions of hazelnut oil were proposed as in Table 2 and 3, to be used in case if the CCFO agrees for new work to add these oils into the Standard.

Table 2: Fatty Acid Composition of Hazelnut Oil (as percentage of total fatty acids) (1)

Fatty Acids	Hazelnut oil
C14:0	ND-0,1

C16:0	4,2-8,9
C16:1	ND-0,5
C17:0	ND-0,1
C17:1	ND-0,1
C18:0	0,8-3,2
C18:1	74,2-86,7
C18:2	5,2-18,7
C18:3	ND-0,3
C20:0	ND-0,2
C20:1	ND-0,2
C20:2	ND
C22:0	ND-0,1
C22:1	ND-0,1
C22:2	ND
C24:0	ND
C24:1	ND-0,3

Table 3: Sterol Composition of Hazelnut Oil (as percentage of total sterols) ⁽¹⁾

Sterols	Hazelnut oil
Cholesterol	ND-1,0
Brassicasterol	ND
Campesterol	4,0-5,9
Stigmasterol	0,6-1,5
Beta-sitosterol	78,3-86,8
Delta-5-Avenasterol	2,0-5,1
Delta-7-Stigmasterol	0,3-4,3
Delta-7-Avenasterol	0,2-1,6

(1) References:

- ✓ Yorulmaz A., Velioglu Y.S., Tekin A., Simsek A., Drover J.C.G. and Ates, J. 2009. Physterols in 17 hazelnut (*Corylus avellana* L.) cultivars, *European J. of Lipid Sci., and Technol.*, 111:402-408
- ✓ Köksal A.İ., Artık N., Şimşek A., Güneş N., 2006. Nutrient composition of hazelnut (*Corylus avellana* L.) varieties cultivated in Turkey *Food Chemistry* 99 (2006) 509–515
- ✓ Matthaus B., and Ozcan M.M., 2012. The comparison of properties of the oil and kernels of various hazelnuts from Germany and Turkey *Eur. J. Lipid Sci. Technol.*, 114, 801-806
- ✓ Turhan S., Yorulmaz A., Simsek A. and Tekin A. 2015 Classification of Turkish hazelnut oils based on their triacylglycerol structures by chemometri analysis (*Eur Food Res Technol* 240:679–688
- ✓ Gumus CE., Yorulmaz A., Tekin A and Simsek A. 2016 Differentiation of Mechanically and Chemically Extracted Hazelnut Oils Based on their Sterol and Wax Profiles (*J Am Oil Chem Soc* 93:1625–1635