



Improved fatty acid profile in HOLL OSR Oil

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Compared to regular OSR (Oilseed Rape) oil the HOLL OSR oil shows an increase in oleic acid content of 26% (> 75%) and has reduced linolenic content to less than 3,5% (Fig. 1).

Fatty acids profile (%)

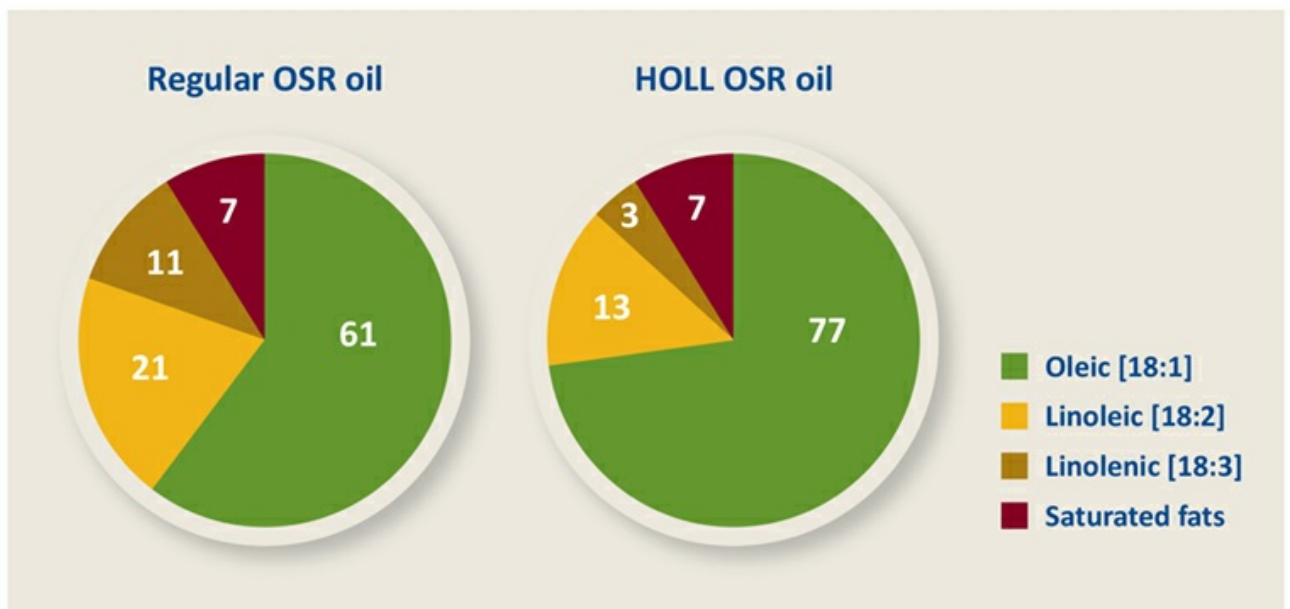


Figure 1. Adapted from Dubois et al. (2008) OCL, 15, 56-75⁰, internal Monsanto data for HOLL OSR oil

HOLL OSR oil has higher amount of oleic acid and less polyunsaturated acids than regular OSR oil (Fig. 3). These changes lead to an improved frying performance compared to regular OSR oil.

Fatty acid profiles of common edible oils

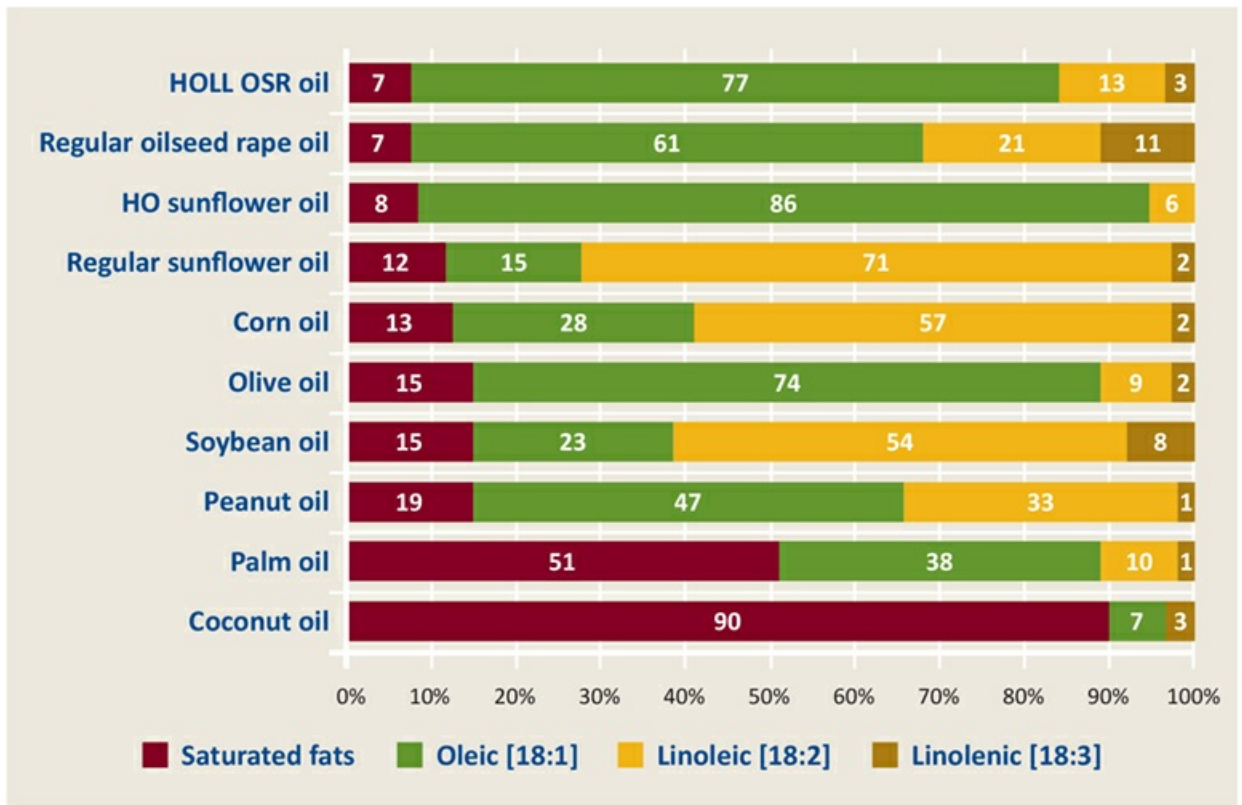
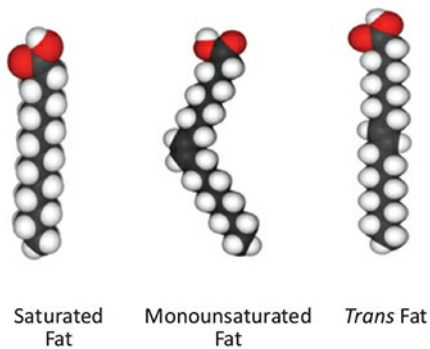


Figure 3: Adapted from Dubois *et al.* (2008) OCL, 15, 56-75⁰, Monsanto data for HOLL OSR oil

- **These changes lead to an improved frying performance compared to regular OSR oil.**



Double bonds introduce a bend in the hydrocarbon chain of unsaturated fatty acids, which makes it more difficult for them to pack tightly. On the contrary, in saturated fatty acids, with no bends, the fatty acids can pack closely, which make them often solid at room temperature.

Partial hydrogenation is the process that adds hydrogen atoms to unsaturated oil, making the fat more solid and stable but creating trans fats, which are suggested to be harmful to health.

Figure 2. (Wikipedia)**.

****Source of molecular models picture:**

Saturated fat: <https://commons.wikimedia.org/wiki/File:Myristic-acid-3D-vdW.png>

Monounsaturated fat: <https://commons.wikimedia.org/wiki/File:Oleic-acid-3D-vdW.png>

Trans fat: https://en.wikipedia.org/wiki/Trans_fat#/media/File:Elaidic-acid-3D-vdW.png

□

Classification of fatty acids



Unsaturated	Monounsaturated: Oleic acid (only one double bond in the hydrocarbon chain)	“Good Fat” 
	Polyunsaturated: Linoleic acid (Omega 6) and alpha-linolenic acid (Omega 3) (two and three double bonds in the hydrocarbon chain, respectively)	
Saturated	No double bonds in their hydrocarbon chains	“Bad Fat” 
Trans	Artificially created form of fatty acid that occurs when an unsaturated fat is hydrogenated (in order to lower the number of double bonds)	

Table 1. Classification of fatty acids, here American Heart Association® & British Nutrition Foundation. (0a&0b)