



Shaping the future with HOLL oilseed rape

Lionel Lordez, BAYER Crop Science, France
 Nelly Guguin (FR), Matthew Clarke (UK) & Lauriane Menard (FR), Breeders, BAYER Crop Science
 Andrea Richter, Michael Hamann, Deutsche Saatveredelung AG, Germany

Figure 1: Comparison of fatty acid composition of dietary fats (%)

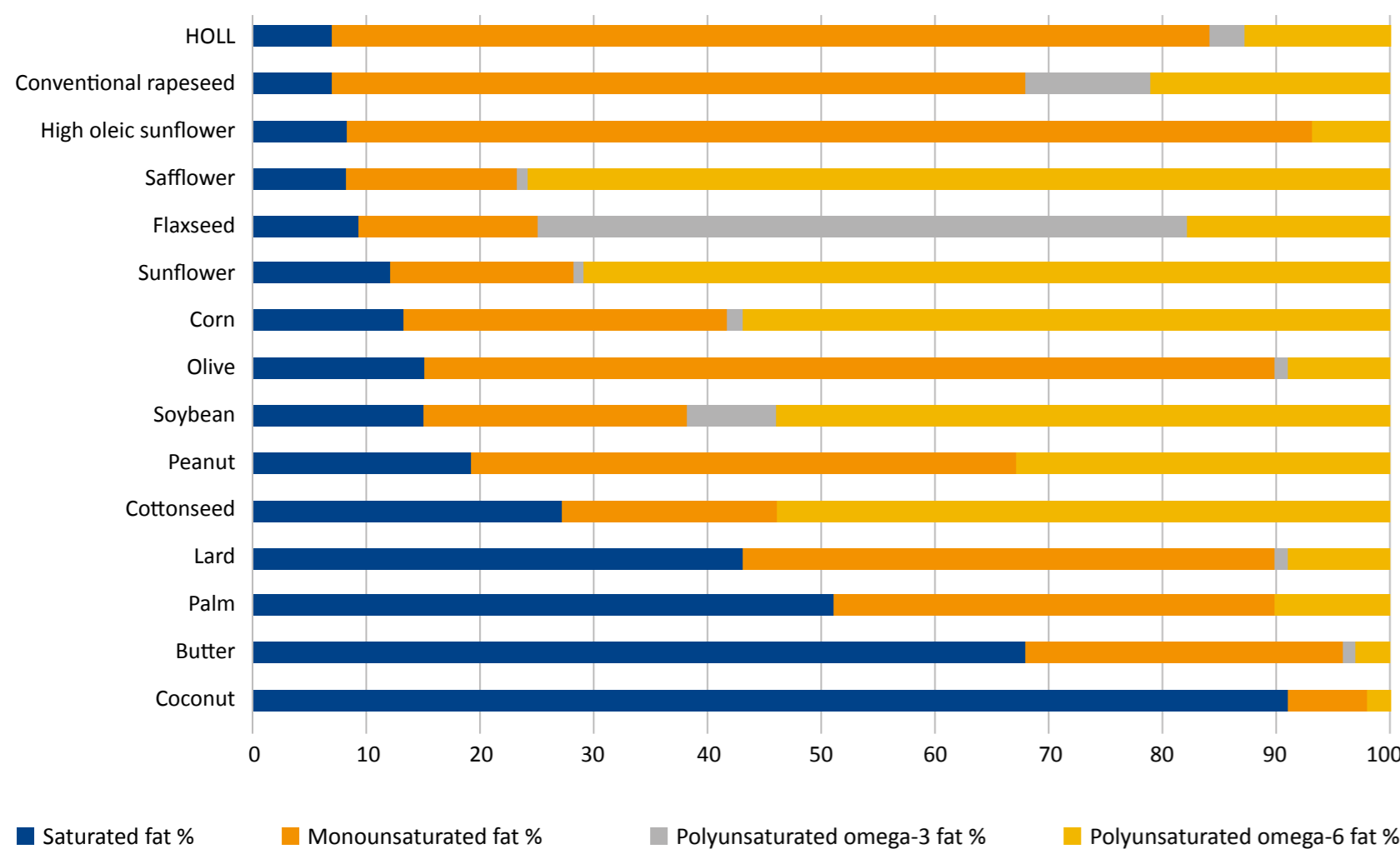


Figure 2: OSR fatty acid profile improvement

	Registration year	Spring OSR	Winter OSR	% conv check	% V316OL
C18:3 < 3%	1987 1998	Stellar	Caddy (PL)		
C18:3 < 1.2%	2002	Calida			
HOLL	2004 2006		Splendor (PL) V141OL (PL)	80% 93% (1)	63% 75%
C18:1 > 75%	2010		V275OL (RH)	98%	90%
C18:3 < 3.5%	2014		V316OL (RH) MDS55 (RH)	100% (2) 100% (3)	100% 105%

BAYER data base : (1) Vs CASTILLE / (2) vs DK EXSTORM / (3) vs DK EXCEPTION (PL) pure lines / (RH) restored hybrids

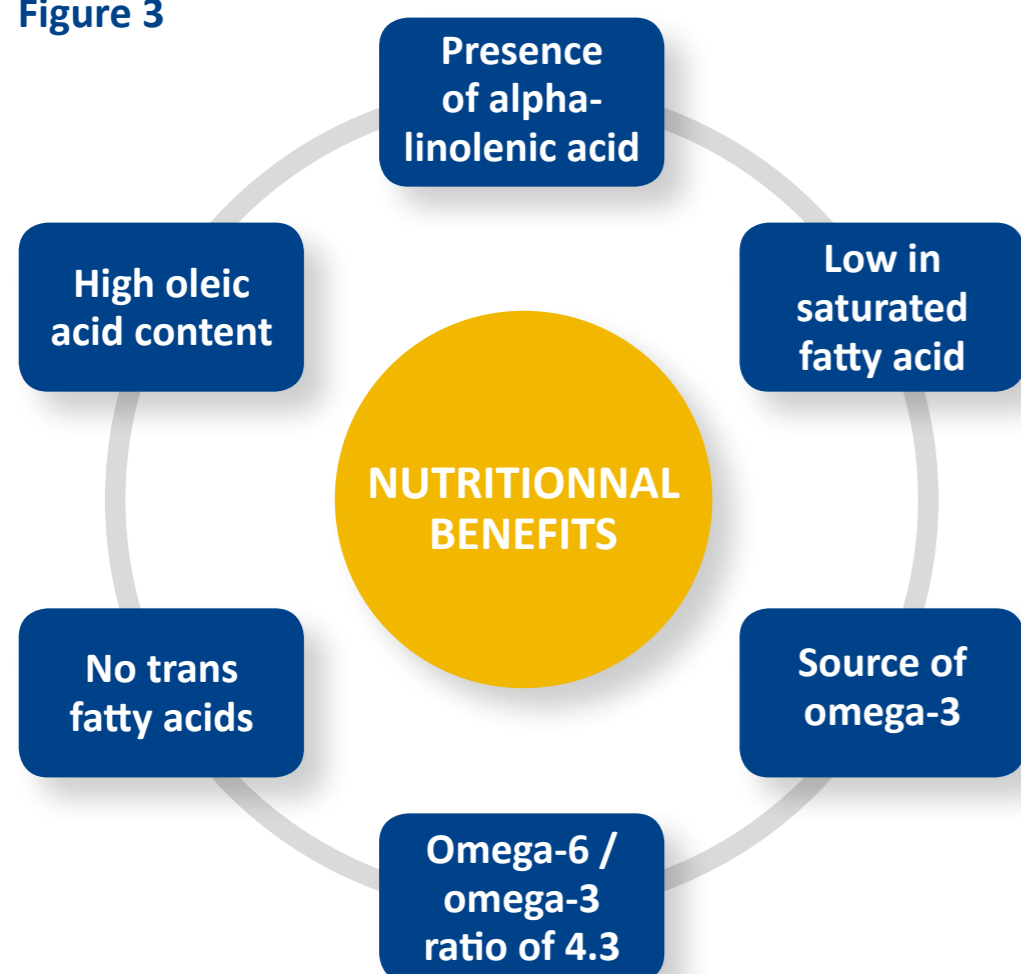
Since the late 1980's an important possibility was identified to broaden the market for edible rapeseed oil, by improving its fatty acid profile to give greater stability, without the need for partial hydrogenation (no trans fats). This was the objective of HOLL (High Oleic Low Linolenic) oilseed rape with the following fatty acid profile specifications: High Oleic level >75 % and Low Linolenic level <3,5 %, giving a healthy & stable composition in comparison to other dietary fats (Figure 1).

Thanks to efficient collaboration between breeding teams from BAYER and DSV, the OSR fatty acid profile was improved to achieve the objective, and yields of HOLL hybrids eventually reached the same level as conventional OSR (Figure 2), with good agronomic packages.

After an initial program of mutation and conventional breeding, DH methods and molecular markers are now used to accelerate the improvements in oil profile and agronomics.



Figure 3



HOLL oilseed rape varieties provide:

- **varietal innovation and an additional value opportunity** for farmers,
- a perfectly balanced & **healthy oil** for the human consumer (Figure 3), with **multi-purpose usages**
- an additional **alternative for the industry**, based on **local, sustainable and traceable supplies**

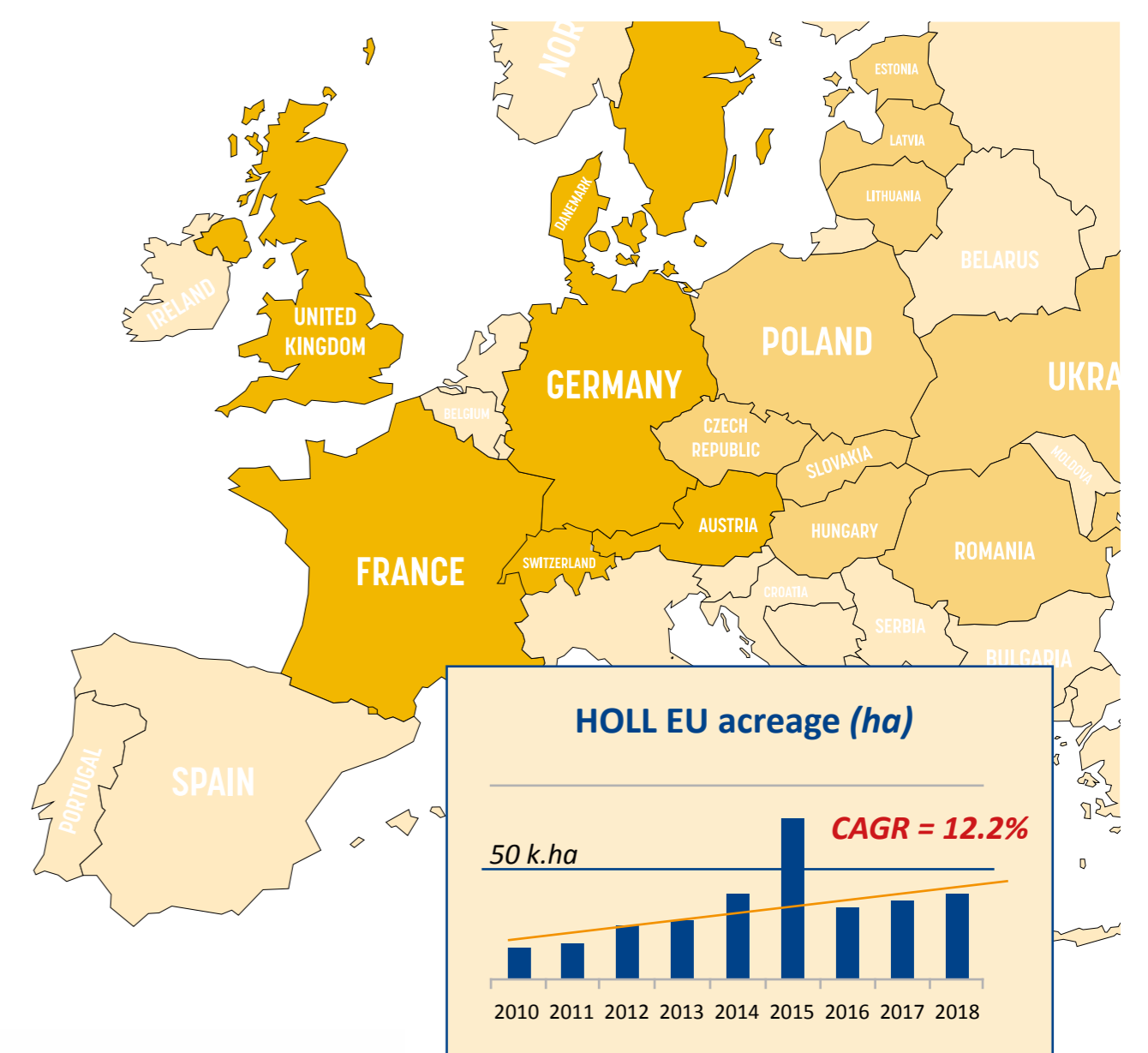
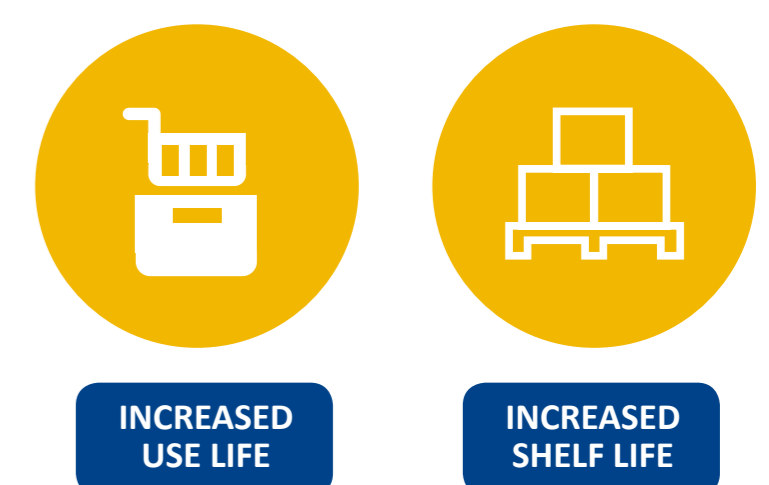


Figure 4: HOLL growth within EU

Figure 5: Sectors using HOLL oil

Segments	MS
Food services (HORECA)	34%
Savoury snacks	31%
Biscuit & bakery	11%
Ind frying	10%
Bottled oil	7.5%
Baby food	2%
Mayo & dressing	1%
Non food	3%



HOLL canola accounts for 30% of global oleic oil production, of which 86% is produced in Canada, giving further impetus for increased European production of HOLL oil from Winter OSR.

In the EU, HOLL rapeseed experienced the strongest growth within the HO crops, with a CAGR of 12.2% during the last 8 years (Figure 4).

This growth is expected to accelerate during the next few years, sitting on a stable base of current HO oil users (Figure 5).

