



Food Quality

How do we get nutrition into the final product

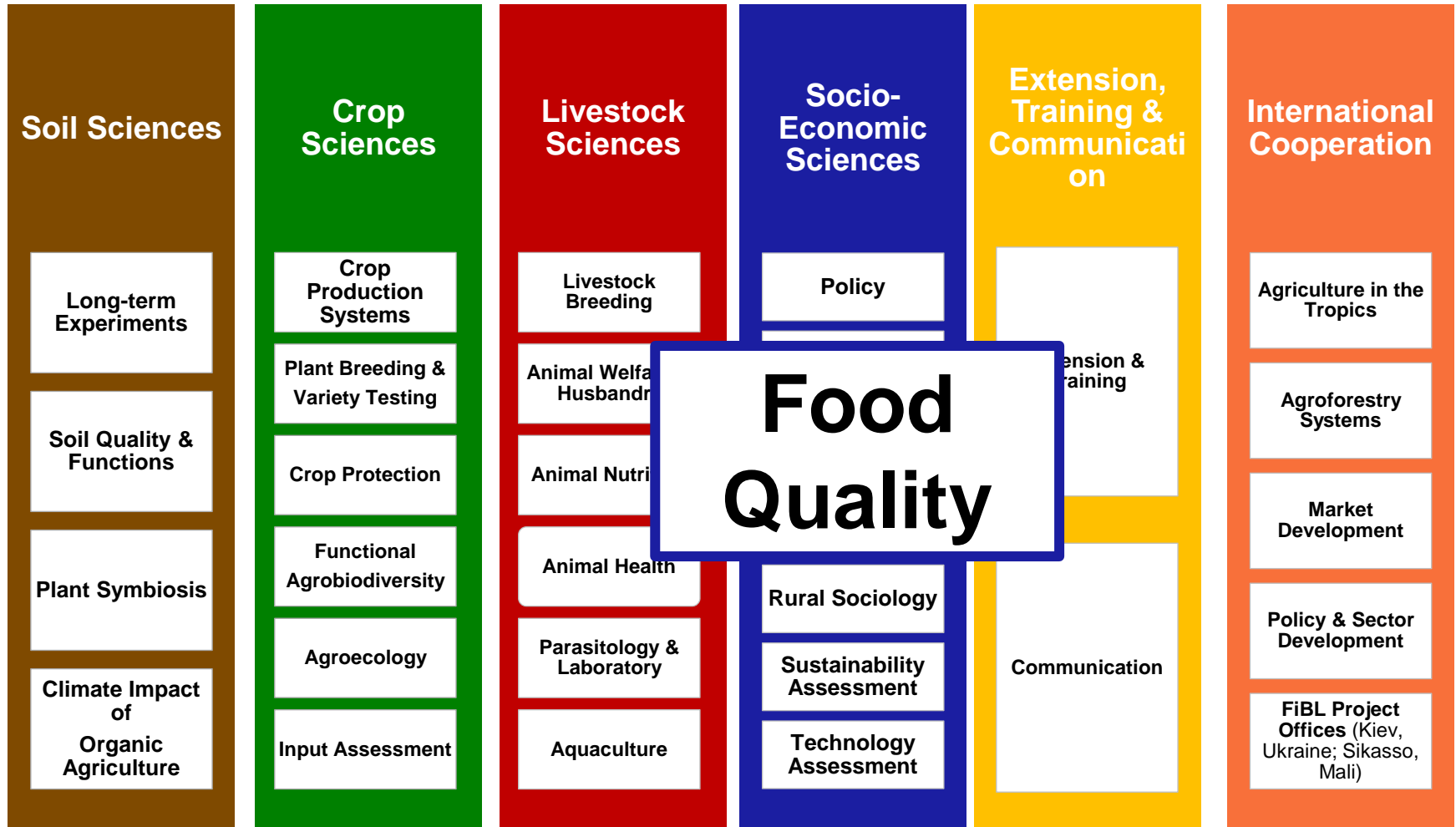
Bennan Tong (bennan.tong@fibl.org)

FiBL at a glance

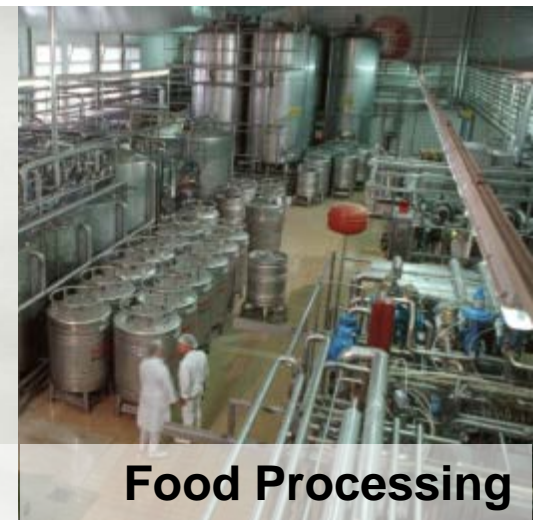


- › Founded in 1973, private foundation
- › 150 staff members
- › 70 interns, B.A./Master/PhD students, apprentices
- › Research on over 200 Swiss organic farms

Departments of FiBL Switzerland























Food Quality: Extension and Research

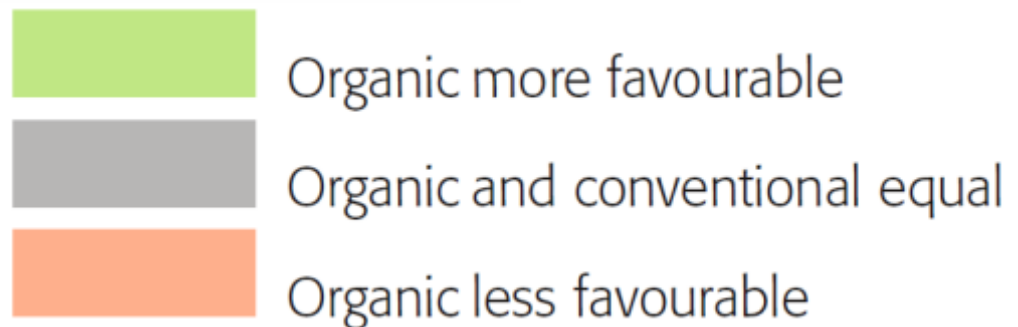


Comparison of Conventional and Organic Products

Ingredients Trends

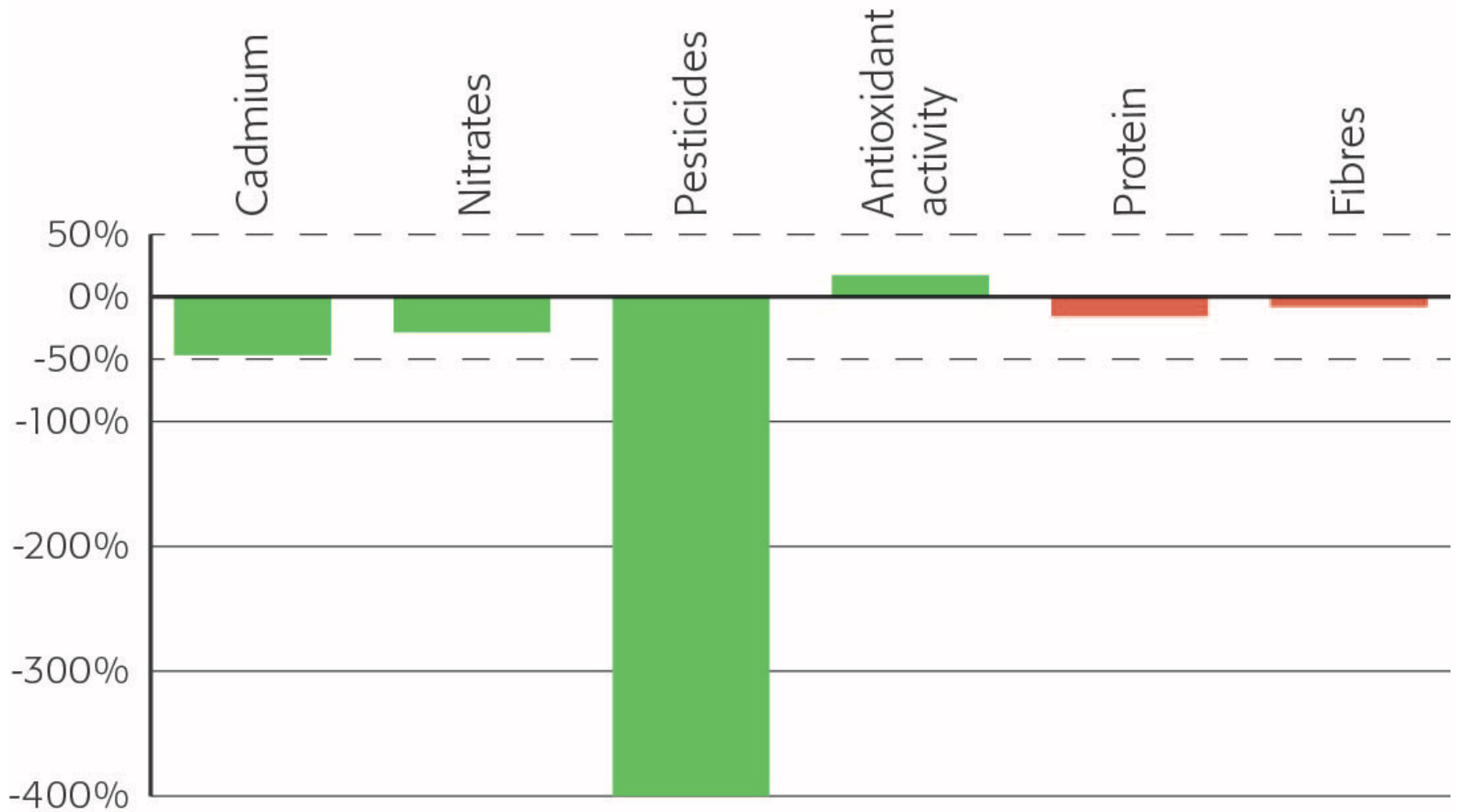
Minerals	Total content 1 	Total content 5 			
Proteins	Total content 3 	Total content 5 	Total content 4 		
Vitamins	Content of vitamin C 2 	Content of vitamins A, C and E 4 	Total content 1 	Total content 5 	Content of vitamins A and E 3 
Phyto-chemicals	Total content 2 	Content of antioxidants 5 	Content of phenol 4 		
Healthy fatty acids	Content of Omega-3 4 	Content of Omega-3 3 			
Nitrate	Content 5 				
Pesticide residues	Total content 4 	Total content 5 			
Heavy metals	Content of cadmium 5 	Content of cadmium 4 			

-  Vegetables
-  Fruits
-  Cereals
-  Milk products
-  Meat



Source: Dossier *Sustainability and quality of organic food*, 2015

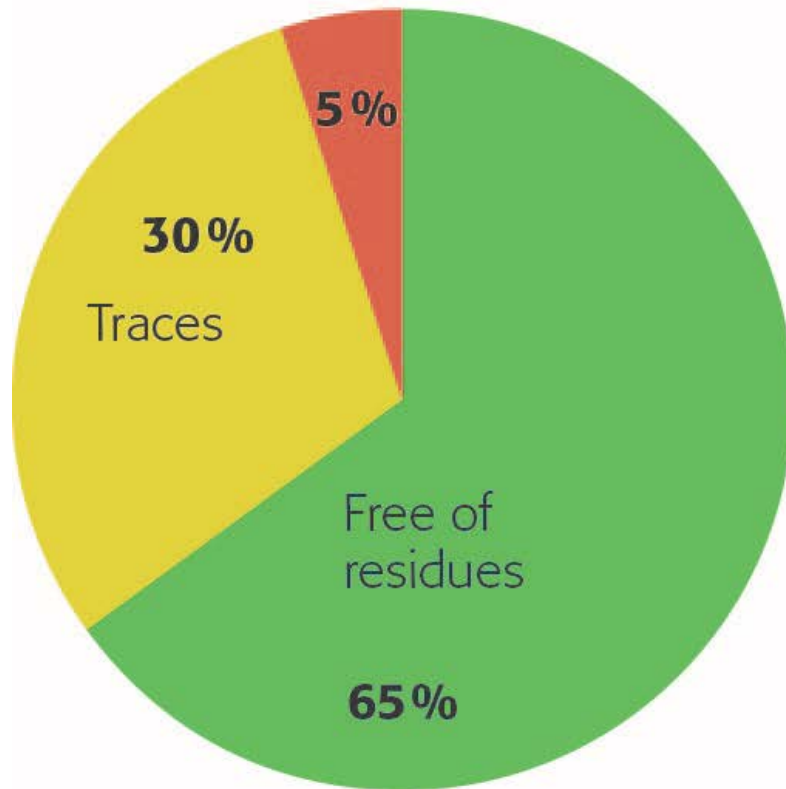
Baransky Metaanalysis of fresh produce



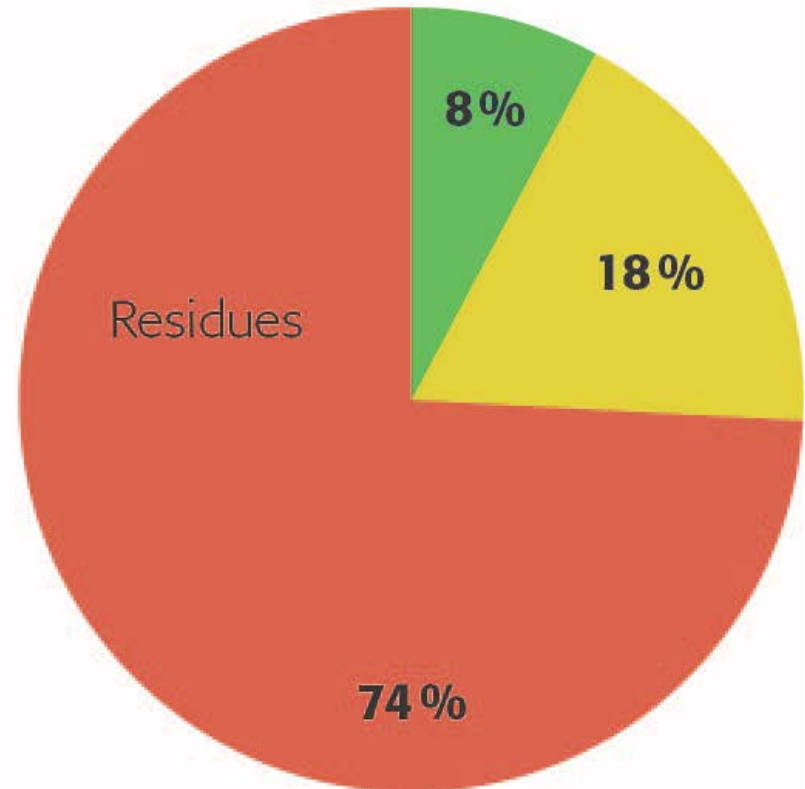
Source: Baransky *et al.* 2014

Pesticide residues

Organic fresh produce

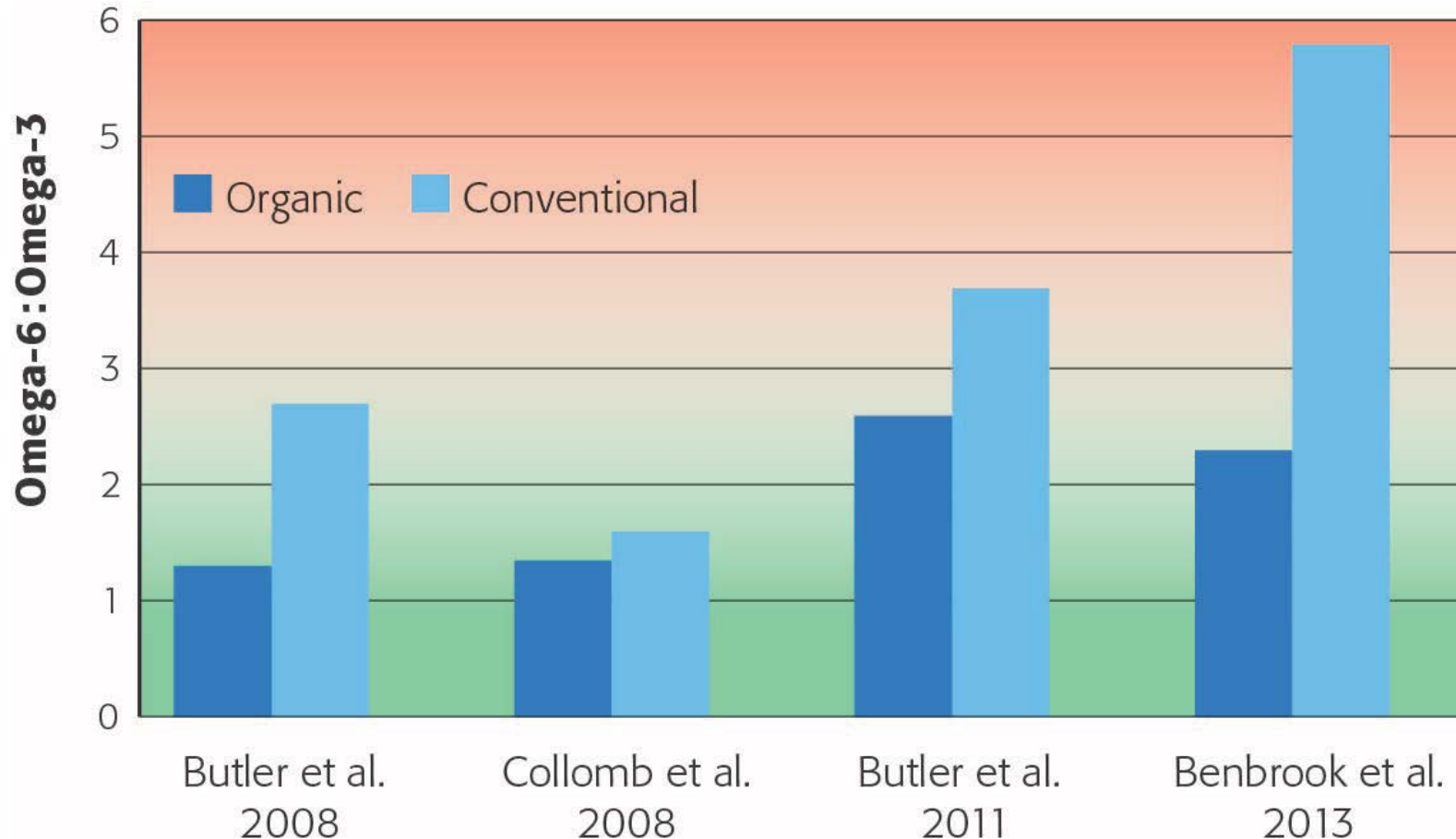


Conventional fresh produce

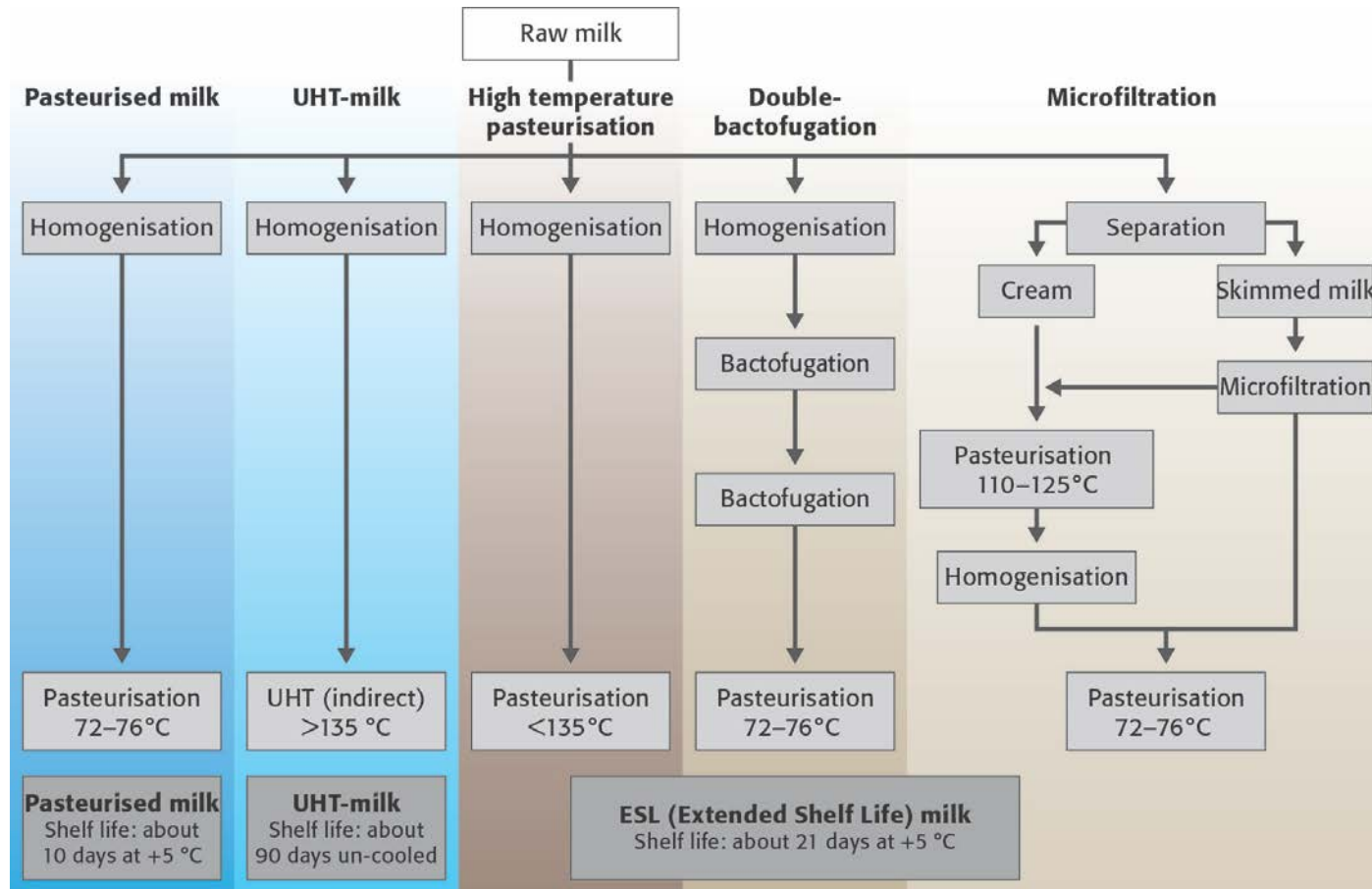


Source: Ökomonitoring 2013. Ministerium für Ländlichen Raum und Verbraucherschutz (MLR) Abteilung Verbraucherschutz und Ernährung, Kernerplatz 10, 70182 Stuttgart

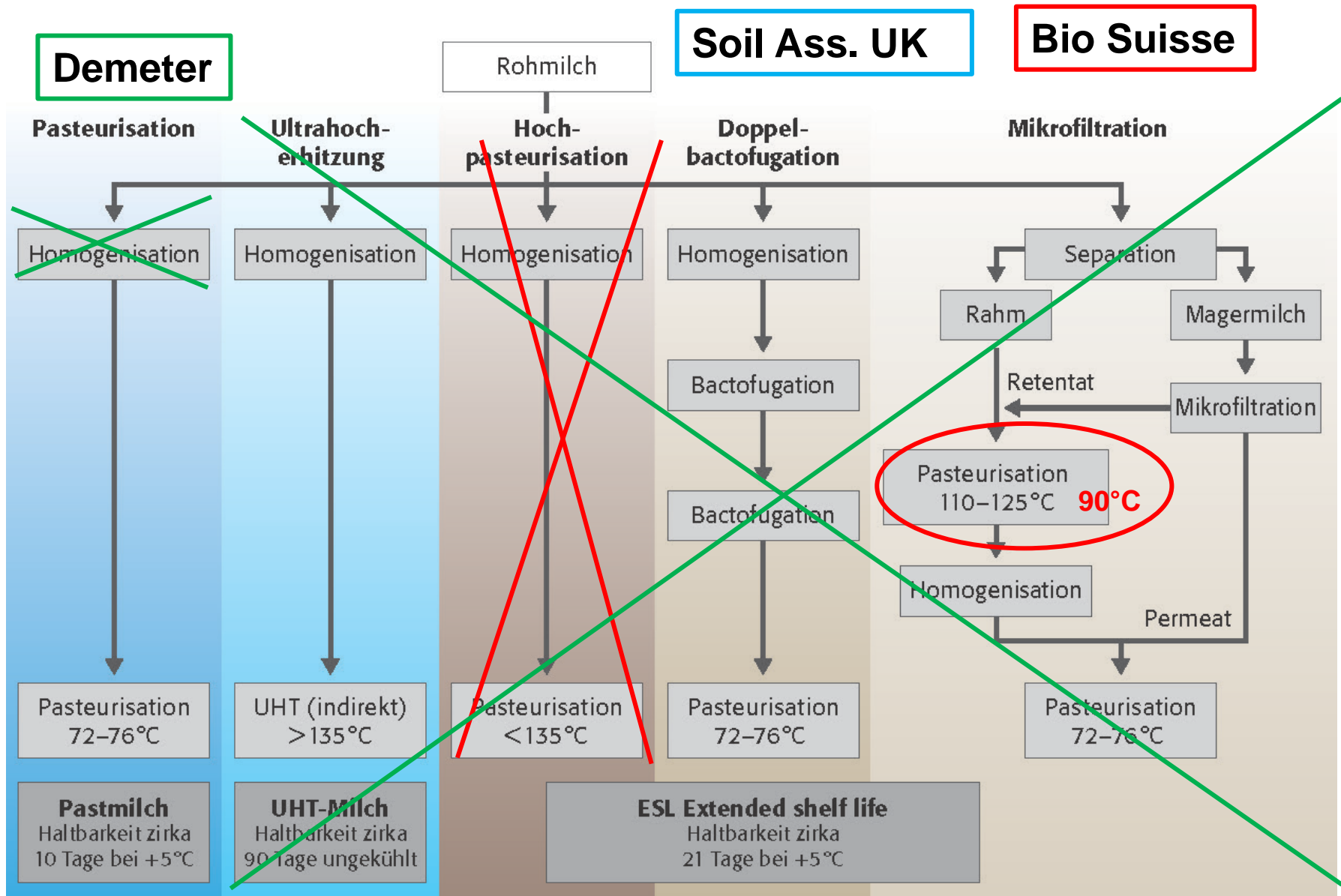
Fatty acid composition of milk



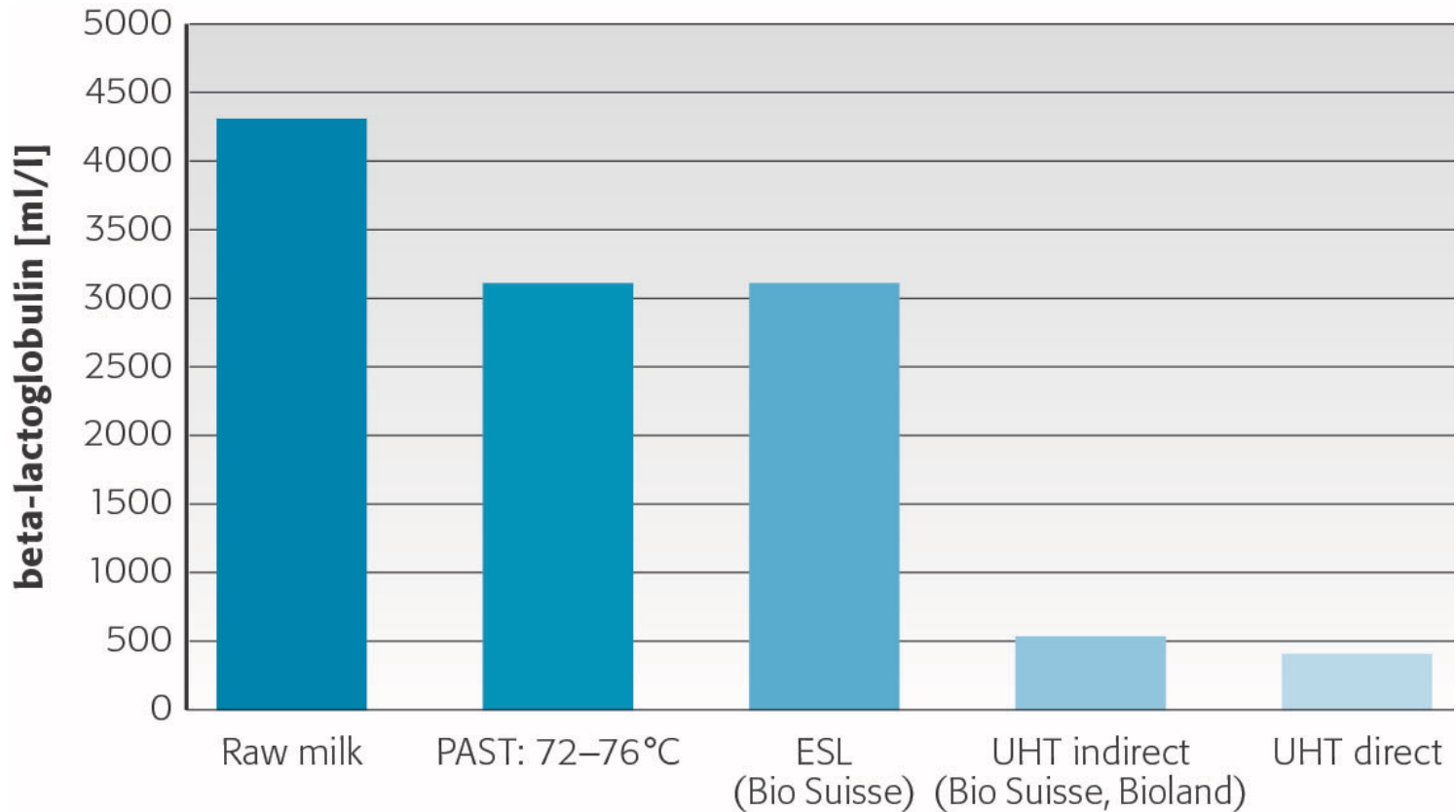
Preservation of milk



Preservation of milk



Milk processing



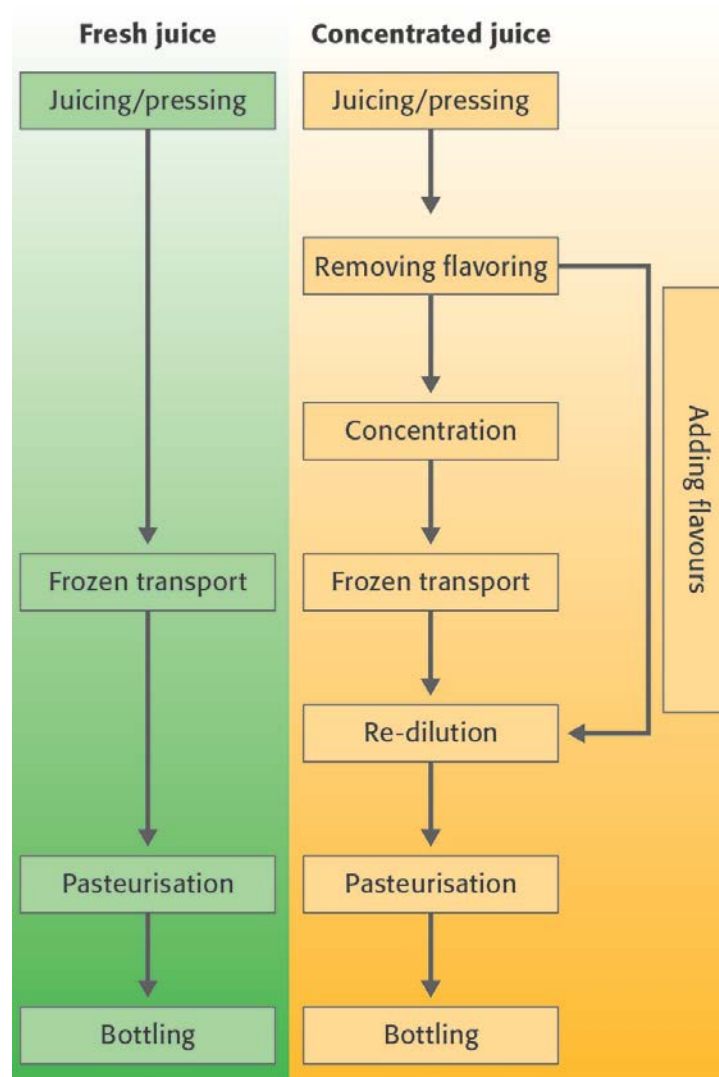
Bio-crystallisation of milk

Bio-crystallisation of milk

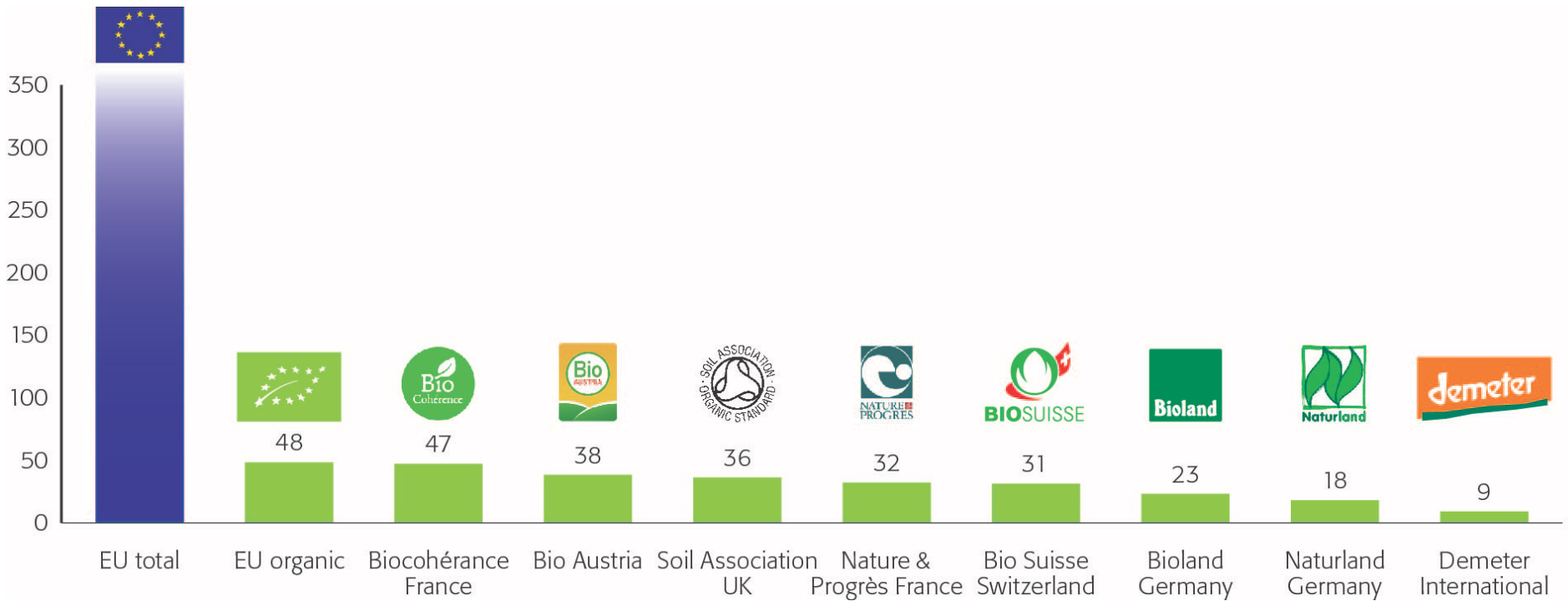


Bei der Biokristallisation entstehen Bilder, welche unter vergleichbaren Bedingungen erzeugt sind und so miteinander verglichen werden können. Links das Kristallisationsbild von UHT-behandelter, homogenisierter Milch aus herkömmlicher Produktion; rechts das Kristallisationsbild von pasteurisierter, biologisch-dynamisch produzierter Milch.

Manufacturing process of orange juice



Restricted Use of Additives



Examples: Dried Apricots and Sausages

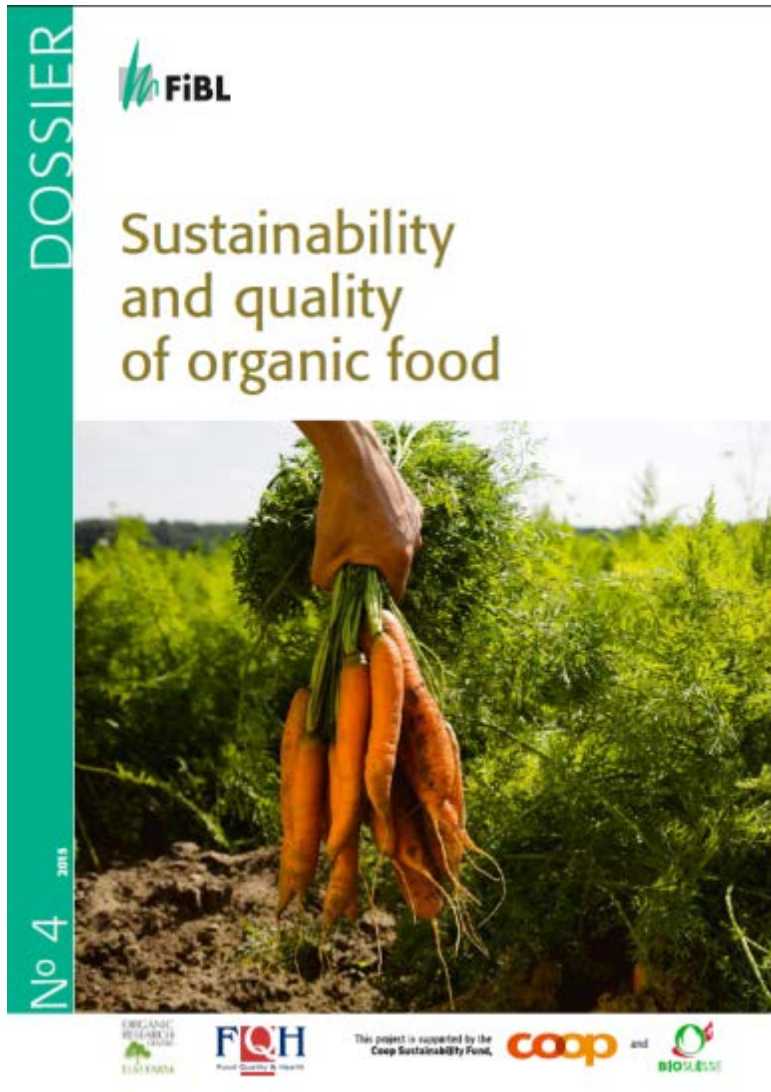


Is organic food better



- › fewer additives
- › no artificial sweeteners, stabilisers, or preservatives
- › no addition of glutamate as a flavour enhancer
- › No artificial colouring
- › No artificial flavours
- › No hydrogenated fats
- › No, or only traces of pesticides

Thank you for your attention!



<https://www.fibl.org/nc/de/shop/startseite.html>