

# USE OF LINGUAL TO DESCRIBE FOODS IN EUROPEAN NUTRIENT DATABASES

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## Rationale and objective

EuroFIR (European Food Information Resource Network, [www.eurofir.net](http://www.eurofir.net)) aims to develop and integrate a comprehensive, coherent and validated databank providing a single, authoritative source of food composition data in Europe. The greatest challenge stems from the fact that this network covers 27 countries with different languages and food cultures. Moreover, English translations of food names have been shown to be insufficient to identify the products in the different databases.

## Materials and methods

In the EuroFIR network, it was thus decided to use LanguaL to link the European food composition databases together at the food level. Originally developed by the US Food and Drug Administration more than 30 years ago, LanguaL (<http://www.languaL.org>) is a multilingual, faceted thesaurus created to describe foods in a systematic way.

In order to facilitate food indexing, the EuroFIR project provided the Food Product Indexer software incorporating the LanguaL thesaurus and a number of already indexed data sets.

Between 2005 and 2009, several short (one or two-day) food indexing courses were organized for food composition data compilers from all European countries:



Table 1. Indexed food sets

29 indexed European data sets:

Indexed data sets	Foods	Indexed data sets	Foods
Czech Republic UZEI	77	Turkey TUBITAK	974
Lithuania NNC	135	Germany BIEL-BLS	1034
Denmark DFI_NDS	339	Ireland UCC	1050
Switzerland SwissFIR	452	Italy CSPO	1052
Austria UVI	514	Serbia IMR	1141
Sweden NFA	467	Norway MVT	1188
Latvia FVS	523	France AFSSA	1346
Spain UGR	658	Slovakia FRI	1400
Bulgaria NCH	826	Denmark DTU_FDB	1546
Greece NIKA	901	Great Britain IFR	1703
Italy INRAN	909	Israel BGU	1925
Poland NFNI	932	Hungary UB	2078
Belgium Nubel	944	Finland FINELI	2093
Iceland ISGEM	946	Netherlands RIVM-NEVO	2309
Portugal INSA	962		

### Specialized data sets:

- > EuroFIR BASIS: bioactive subst. in foods (<http://www.eurofir.net>)
- > French Polyphenols database (<http://www.phenol-explorer.eu/>)
- > GEMS/Foods: WHO/FAO Global Environmental Monitoring System, using Codex CCPR classification (<http://www.who.int/foodsafety/chem/gems/en/index.html>)
- > INFORMALL: Information on allergenic foods (<http://foodallergens.ifr.ac.uk/>)
- > USDA data sets ([http://www.ars.usda.gov/main/site\\_main.htm?modecode=12-35-45-00](http://www.ars.usda.gov/main/site_main.htm?modecode=12-35-45-00))

Figure 1. How is food described with LanguaL?

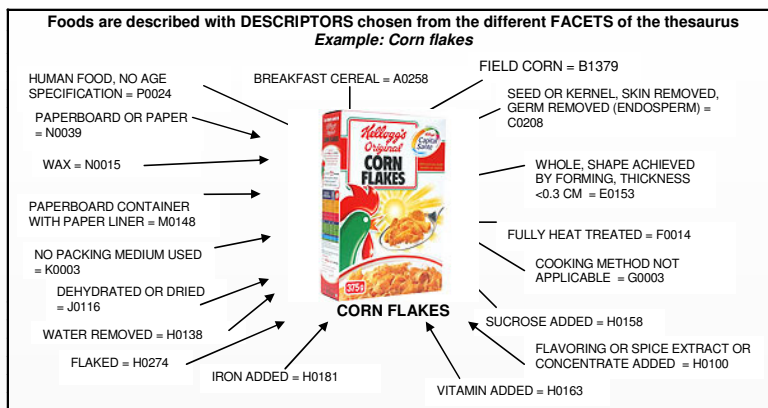
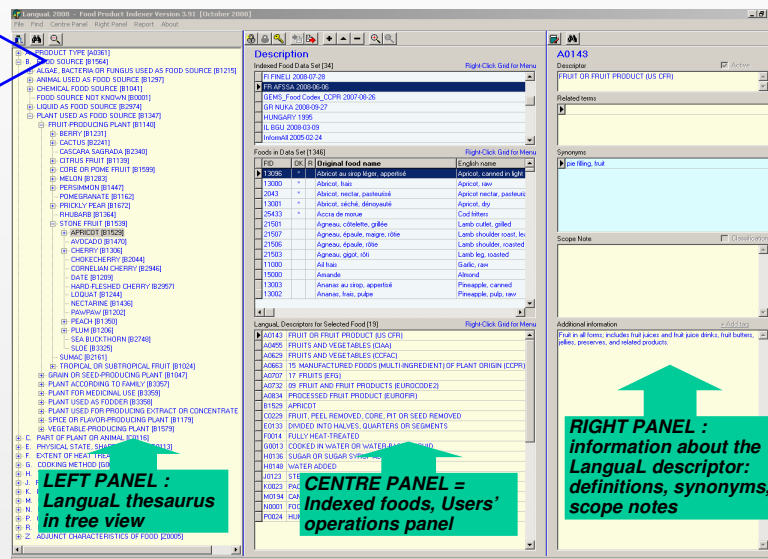


Figure 2. LanguaL Food Product Indexer



## Results

Compiler feedback to the LanguaL Technical Committee led to new descriptors and allowed compilers to improve their food indexing. To facilitate use at an international level, the LanguaL thesaurus has been translated into several languages: Danish, French, German, Hungarian, Italian, Spanish. Czech and Portuguese translations are in preparation.

All of the food composition data compilers in the EuroFIR network have delivered LanguaL indexed food sets (Table 1), with an average of 1000 indexed foods per national database. The result of this food indexing was thus a set of more than 29,000 LanguaL indexed foods able to be searched in the EuroFIR network's data facilities.

## Conclusions

Standardized food description allows foods to be linked and compared across borders and language barriers. Systematic food indexing is facilitated by the use of LanguaL indexing software. EuroFIR's LanguaL-based search system demonstrates the benefits of using standardized systems for linking food composition data from all over the world.