



European Food Consumption Validation Project



Marga Ocké, Rome, September 2007,  
Workshop WP 4



**Possible adaptations of the  
EPIC-SOFT databases to assess  
dietary exposure to flavourings**

# Structure of the presentation

1. Background of EPIC-SOFT
2. General structure of the interview
3. Food description
4. Facet flavour
5. Facet brandname
6. Problems in practice
7. Match with occurrence databases
8. Conclusion

# History of EPIC-Soft



European  
Prospective  
Investigation into  
Cancer and Nutrition

~500.000 participants



International Agency for Research on Cancer  
Centre International de Recherche sur le Cancer

# EPIC-SOFT use in EPIC



- a computerized 24-h dietary recall interview program
- developed to calibrate dietary intake assessed by different food frequency questionnaires/ dietary history methods in the various EPIC-countries
- used in subsample ~37.000 participants
- valid methodology at group level with regard to energy, protein and carotenoid intake (*Slimani et al., 2003; Ferrari et al., 2002; Al Delaimy et al., 2005a and b*)

# EPIC-SOFT use in national dietary monitoring surveys



- Netherlands 2003 (19-30y), 2005-2006 (2-6y), 2007-2010 (7-69y)
- Belgium 2004 ( $\geq 15$  y)
- Germany 2005-2007 (14-80y)

# EFCOVAL objectives related to EPIC-SOFT

- Explore possibilities to its use for exposure assessment to potentially hazardous chemicals (flavourings)
- Validate existing versions of the software
- Adapt EPIC-SOFT to current IT standards
- Improve software with new specifications for dietary monitoring



European Food Consumption Validation Project

rivm

National Institute  
for Public Health  
and the Environment



# EPIC-SOFT – general structure

- General information
- Quick list
- Identification/Description and Quantification
  - Identification/description
  - Quantification
- Controls and checks
- Dietary supplements

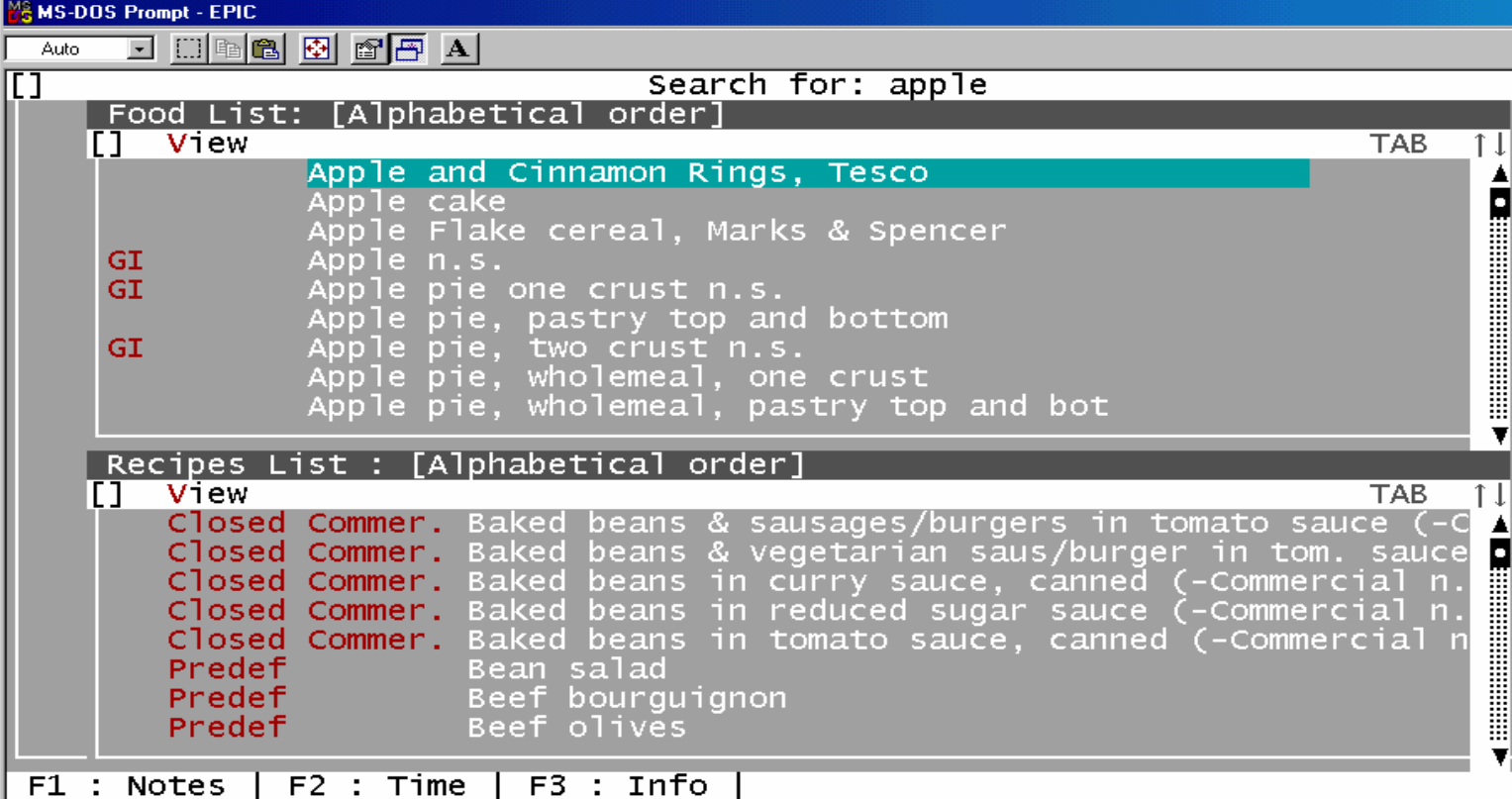
Multiple  
pass  
method

*Slimani et al., 1999*

*Slimani et al., 2000*

*Slimani & Valsta, 2002 (EFCOSUM special issue)*

# EPIC-Soft: search and identification



The screenshot shows a terminal window titled "MS-DOS Prompt - EPIC" with a menu bar containing "Auto" and several icons. The main content is a search interface for "apple". It features two scrollable lists: "Food List: [Alphabetical order]" and "Recipes List : [Alphabetical order]". The "Food List" contains items like "Apple and Cinnamon Rings, Tesco" (highlighted in green), "Apple cake", "Apple Flake cereal, Marks & Spencer", and various "Apple pie" items, some with "GI" labels. The "Recipes List" contains items like "Baked beans & sausages/burgers in tomato sauce" (labeled "Closed Commer.") and "Bean salad" (labeled "Predef"). A status bar at the bottom shows "F1 : Notes | F2 : Time | F3 : Info |".

```
MS-DOS Prompt - EPIC
Auto
[] Search for: apple
Food List: [Alphabetical order]
[] View TAB ↑↓
Apple and Cinnamon Rings, Tesco
Apple cake
Apple Flake cereal, Marks & Spencer
GI Apple n.s.
GI Apple pie one crust n.s.
Apple pie, pastry top and bottom
GI Apple pie, two crust n.s.
Apple pie, wholemeal, one crust
Apple pie, wholemeal, pastry top and bot

Recipes List : [Alphabetical order]
[] View TAB ↑↓
Closed Commer. Baked beans & sausages/burgers in tomato sauce (-C
Closed Commer. Baked beans & vegetarian saus/burger in tom. sauce
Closed Commer. Baked beans in curry sauce, canned (-Commercial n.
Closed Commer. Baked beans in reduced sugar sauce (-Commercial n.
Closed Commer. Baked beans in tomato sauce, canned (-Commercial n
Predef Bean salad
Predef Beef bourguignon
Predef Beef olives

F1 : Notes | F2 : Time | F3 : Info |
```

# EPIC-SOFT – food/ingredient description

Facet: an aspect to characterize a food

Descriptors: the options within a facet to describe the foods

No facet question when answer is defined by the food : e.g. tiramisu has cacao/chocolate etc

The screenshot shows the EpicSoft 9.16 software interface. The title bar reads 'EpicSoft 9.16' and the date is '24/05/07'. The main window displays a list of food items with their weights and a list of facets. The 'Beef steak, rib' item is selected, and its 'COOKING METHOD' facet is expanded to show a list of descriptors. The descriptors are: cooked (n.s), roasted (with fat), fried, stir fried/sauted, deep fried, grilled (no fat used), and griddled (no fat used). The 'Beef steak, rib' item is also listed below the descriptors. The interface includes a status bar at the bottom with 'F1 : Notes | F2 : Time | F3 : Info |'.

Facet: COOKING METHOD

COOKING METHOD

**Descriptors**

- cooked (n.s)
- roasted (with fat)
- fried
- stir fried/sauted
- deep fried
- grilled (no fat used)
- griddled (no fat used)

Beef steak, rib

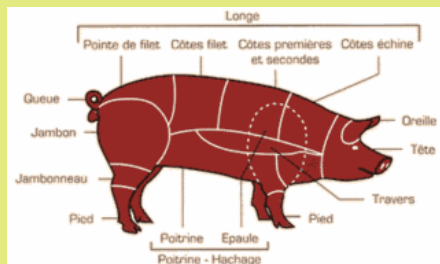
F1 : Notes | F2 : Time | F3 : Info |

# EPIC-SOFT – food/ingredient description

Facets/descriptors vary by food (group)

*Example 1: 'pork'*

- *Preservation method*
- *Packing medium*
- *Cooking method*
- *Visible fat consumed*



*Example 2: 'yogurt' is described by facets*

- *Flavour*
- *Brandname*
- *Sugar content*
- *Fat content*
- *Enrichment*



# Facet 'flavour/added component'

- Definition: This facet is used when a small quantity of some food or a flavouring agent is added to a food for flavouring purposes.
- Particular details: Several descriptors can be chosen for the same food item.
- *Source: EPIC-SOFT Thesaurus (IARC)*

# EPIC-SOFT – facet flavour/added component

EPIC 31 descriptors; EFCOVAL 85 descriptors

- Cacao, chocolate
- Coffee
- Caramel
- Vanilla
- .....
- Rasp berry
- Black berry
- Blue berry
- Cran berry
- Straw berry
- Cloud berry
- Logan berry
- Thimble berry
- Bilberry
- Black berry
- Mulberry
- Berries n.s.
- Red fruits n.s.
- Forest fruit

# EPIC-SOFT – facet flavour/added component –

Food groups applied to:

- Dairy products
- Bread, rusks
- Breakfast cereals
- Salty biscuits
- Sugar and confectionery
- Cakes and biscuits
- Drinks
- Sauces
- Soy products
- Dietetic products

Food groups not applied to:

- Processed meat
- Pasta
- .....

# EPIC-SOFT – facet brandname/productname

## 12- BRANDNAME/PRODUCTNAME

- Definition: It is used to enter information on the brandname and/or product name of a food.
- A predefined brandname/productname list is available, but any missing information may be added manually during the interview. It is an open-ended facet.
- Particular details: This facet is linked to the descriptors 'commercial' of the facet 'Food production': each time one descriptor 'commercial' is selected, the facet 'Brandname/productname' shows up on the screen.

Useful for link with occurrence data?

# EPIC-SOFT – problems in practice

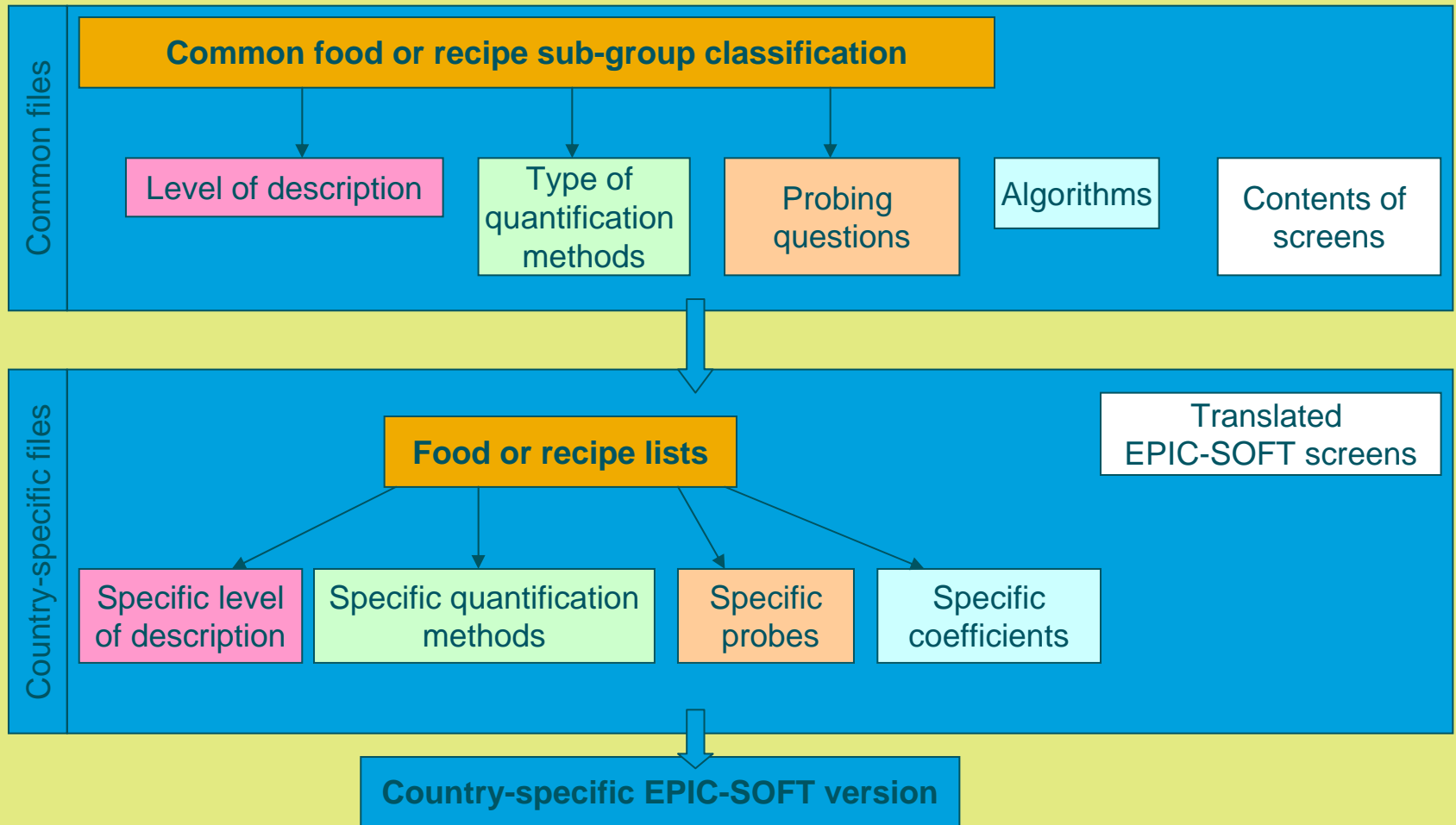
What is quality of information respondents can give  
(and interviewers know)?

- Incomplete information
- Misreporting

Long list of possible flavours:

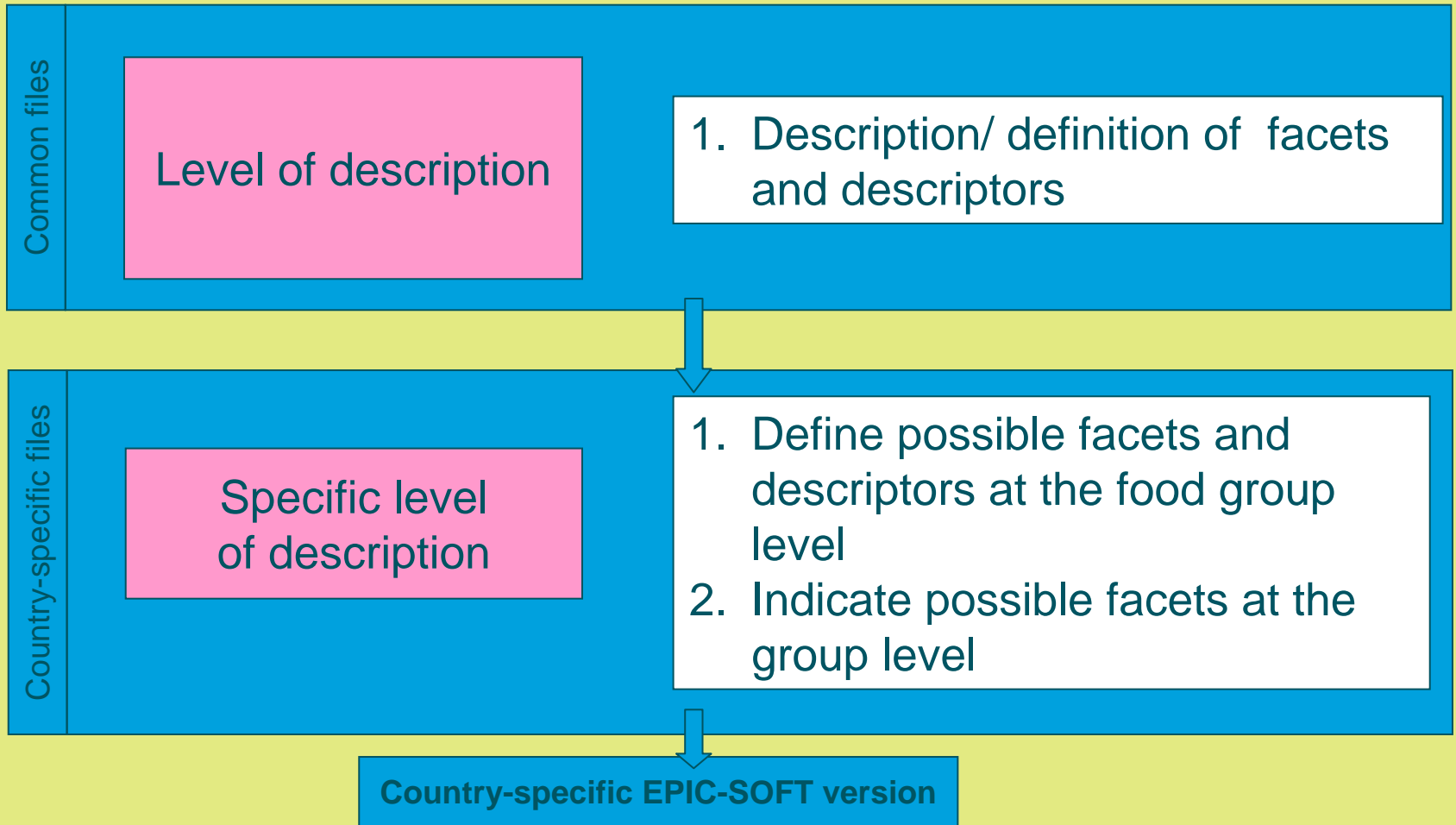
- Duration of the interview

# EPIC-SOFT files (about 60)



Source: Slimani et al., 2002

# EPIC-SOFT files



# EPIC-SOFT – match with occurrence databases

Match of reported foods with occurrence databases outside EPICSOFT

Food + facet/decriptor combinations: uniquely reported foods

Problems/remarks

- Complete description needed, including brandnames; incomplete information and misreporting will make it difficult
- Not only select on basis of flavour facet sometimes a flavour is 'by definition' in the product
- Rapidly changing market

# Conclusions

There is potential to assess exposure to flavours using EPIC-SOFT

Some aspects need to be considered and tested:

- Added small quantity of a food versus flavour: problem to have it in one facet?
- Long list of possible flavours: problem for interview situation?
- Facet asked for most important food groups, completeness?
- Missing information, misreporting: Quality of information needs to be tested in practice
- Match of reported foods with occurrence data