4.3 Guidelines to build up and improve a typical food product

- Split a typical product into several products for different markets and segments but all having a common genuine identity
- Origin, traceability and health concerns should be reinforced
- Look at market drivers and how to implement them in the typical product
- Reinforce emotional attachments with close and friendly consumers
- Conquering far markets is like launching new products with consumers adjusting to new tastes
- Communicate to consumers all the attributes that are favourable

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Guidelines How to Control Typicality

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Take the situation you are in the supermarket

…

How can I check the typicality of this product?

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WHY Typicality?

Changes in behaviour of European consumers :

- **require of high quality sanitary products (dietary, hygienic and health standards)**
- **looking for certification and reassurance of product origin and production methods**

(EC doc*)

* http:// www.fsai.ie/industry/forums/artisan/docs/EC_WD_overview.pdf (accessed 12-12-2005)

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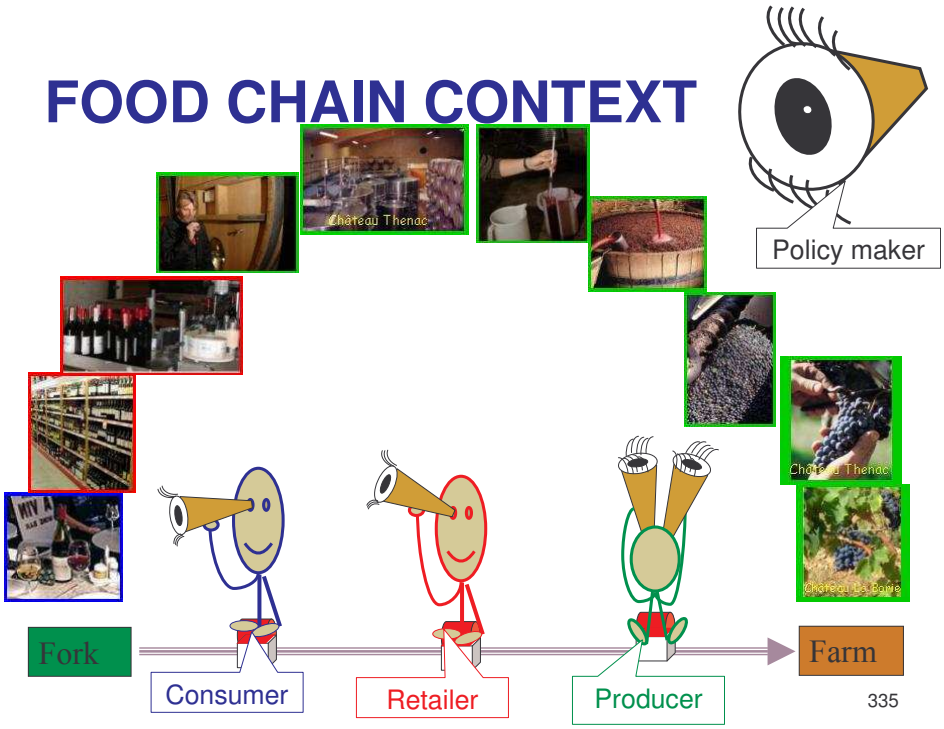
FOOD CHAIN CONTEXT



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How to control Typicality ?

- Different Points of View

  Consumers Point of View

  Retailers/distributors Point of View

  Policy maker Point of View

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How to control Typicality ?

- **Criteria driving the buying behaviour are:**

Price (promotions)

Brand (loyalty cards)

Designation

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EEC Regulation Nº 2081/92

	A *PDO (Protected Designation of Origin)* covers the term used to describe foodstuffs which are produced, processed and prepared in a given geographical area using recognised know-how.
	In the case of the *PGI (Protected Geographical Indication)* the geographical link must occur in at least one of the stages of production, processing or preparation. Furthermore, the product can benefit from a good reputation.
	A *TSG (Traditional Speciality Guaranteed)* does not refer to the origin but highlights traditional character, either in the composition or means of production.

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Specifications of the PDOs and PGIs

Name

Description

Geographical area

Proof of origin

Method of production

Link

Inspection body

Labelling

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Specifications of the PDOs and PGIs

- Description:characteristics of the product

  physical (shape, colour, weight, etc.);

  chemical (minimum fat content, maximum water content, etc.);

  microbiological (type of bacteria present, etc.);

  biological (race, species, etc.);

  organoleptic (colour, taste, flavour, odour, etc.)

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Ham: Exemple of *JAMBON DE BAYONNE* (PGI)

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Specifications “Jambon de Bayonne”

- **Name**:
  Jambon de Bayonne
- **Description:**
  Dry Cured Ham
- **Geographical area:**
  Pigs born and bred South west France Adour river valley

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Specifications “Jambon de Bayonne”

- **Proof of origin:**
  Traceability along the process
- **Method of production:**
  Feed: cereals
  Curing : salt from Adour estuary
  "Pannage": application of a mixture of pork fat and flour to the muscular parts of the ham
  Sampling : judgement of the experts
  9 to 10 months

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How authenticate typicality of dry cured hams?

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Descriptors of Typicality of ham defined by the trained panels:

Spanish panel:

- Marbling
- Cured ham aroma
- Hardness
- Softness
- Cured ham flavour
- Saltiness
- Acorn (nut) flavour
- Sheen and greasiness

French panel:

- **YELLOW COLOUR**
- **SUBCUTANEOUS FAT**
- **RED COLOUR**
- **HETEROGENEOUS FAT COLOUR**
- **RANCID FLAVOUR**
- **INTRAMUSCULAR FAT**
- **OIL TEXTURE**
- **CRUST**

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Typicality assessment (questionnaire) 45 participants

Measurement:	Typicality assessment of food chain actors
Application field: 	Typicality assessment of food, drink and other items Attributes, which are most important for typicality perception, More precisely defined attributes related to typicality.
Time:	5 weeks for writing, sending questionnaires, sending back of the answers and data processing.
Marginal cost:	€ 50 to € 100
Benefits: 	Adequacy: high for food and drink items perceived as very typical, weak for commodities and standardised products Accuracy: depends on the expertise and relevant selection of food chain actors Reliability: low

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Sensory profile analysis by trained panel (20 to 25 judges)

Measurement:	Recording the intensity of sensory attributes with a trained panel
Application field:	Sensory characterisation of an kind of food, drink or item
Time:	12 weeks including the preparation, the measurement and the processing of the data.
Marginal cost:	€ 600
Benefits:	Adequacy: high if the panel is well trained and motivated Accuracy: high, if the panel is well trained and sample handling is professional Reliability: high, if the panel is well trained and sample handling is professional

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Conjoint Analysis (100 consumers)

Measurement:	Trade-off measurement (Identification of the main typicality attributes expected by consumers and the weight and attractiveness of typicality elements in consumer perception)
Application field:	Any kind of good with different possible combination of attributes
Time:	6,5 weeks
Marginal cost:	50 € / consumer, including structural and personnel costs
Benefits:	Adequacy: High Accuracy: High Reliability: High (if Ordinary Last Square statistical method used for analysis)

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Physico-chemical characterisation of typical food products

Technique	Measurement
• Visible NIR	
• Fluorescence	
• NMR	Metabolite study
• HPLC/MS	Volatiles
• SPME-HRGC	Volatiles
• SDS-PAGE	Protein fraction
• Mechanical testing	Characterisation of texture

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Fluorescence

Measurement:	Physical
Application field:	All the products (ham, wine, cheese, milk, honey, meat, cereals, flour, ….) with intrinsic fluorescent probes
Time:	3 minutes
Marginal cost:	40 €/sample
Benefits:	

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SPME (Solid Phase Micro Extraction)-HRGC

Measurement:	Gas chromatography
Application field:	Liquid samples – volatile analysis
Time:	2.5 hours
Marginal cost:	€ 30
Benefits:	Adequacy: Optimum for the wine aroma analysis Accuracy: -- Reliability: High

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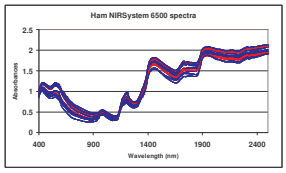
Visible NIR

Measurement:	Physical
Application field:	Ham analysis
Time:	20 minutes
Marginal cost:	10 €/sample (NIR analysis) 25 €/sample (NIR analysis + sample preparation)
Benefits:	Adequacy: High for the global composition information Accuracy: Reliability: High



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Electronic nose based on MOS sensors

Measurement: Physicochemical

Application field: Ham aroma

Time: 3 hours

Cost: Budget of equipment: 72000 €
Budget of consumables: 100 €
Marginal cost (cost of one sample measurement): Not determined

Benefits: Adequacy: High for the global aroma information
Accuracy: <10% (RSDr)
Reliability: High

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Prediction of typicality descriptors by analytical techniques

r^2	NIR	NMR	Fluo	HPLC/MS	SPME-HRGC
colour bf	**0.61**	0.59	0.50	0.42	
fat colour	0.52	0.57	**0.56**		0.41
rancid flavour	0.50	0.55	**0.56**		
acorn flavour	**0.80**	0.64		0.42	0.54
sheen	**0.64**	0.59		0.42	0.62
CRUST	0.60	**0.67**		0.41	
RED COLOUR	**0.55**	**0.56**	0.47		
YELLOW COLOUR	**0.78**	0.73	0.45		0.61
HETEROGENEOUS FAT CONTENT	**0.84**	0.81	0.42	0.36	0.61
INTRAMUSCULAR FAT	**0.63**				
RANCID SMELL	**0.53**		0.45		0.35
RAW MEAT FLAVOUR	**0.56**	0.53		0.36	
RANCID FLAVOUR	**0.68**	0.71		0.37	0.61
PUNGENT FLAVOUR	0.53	**0.68**		0.38	0.53
SALTY TASTE				0.47	
DRIED TEXTURE				0.42	
Saltiness				0.44	
SUBCUTANEOUS FAT					0.43
NUTTY SMELL					0.44
NUTTY FLAVOUR					0.51
Flavour					0.41
OIL TEXTURE					**0.61**
subcut. fat					0.41
aroma					0.38

Wine Typicality as defined by panels

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Descriptors of typicality of wine defined by the trained panels:

German panel: Dornfelder

- Colour intensity
- Colour hue
- Sour cherry
- Black berry / elder berry
- Herbaceous
- Green / vegetative
- Roasted / spicy
- Sweetness
- Sourness
- Alcohol
- Body
- Tannins

French panel: Beaujolais

- Colour intensity
- Colour hue
- Fruity
- Floral
- Spicy
- Sour
- Soft
- Tannins

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TOF-MS

Measurement:	Mass spectrometric rapid method
Application field:	Characterisation of polyphenols in red wines
Time:	5 minutes
Marginal cost:	€ 25 /sample, including structural and personal costs
Benefits:	

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Thiolysis

Measurement:	Chromatographic reference method
Application field:	Quantification of tannins in red wines
Time:	2.5 hours
Marginal cost:	€ 600/sample, including structural and personal costs
Benefits:	

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HPLC-DAD

Measurement: Chromatographic reference method

Application field: Quantification of phenolic acids, flavonols, and red pigments in red wines

Time: 2h 5 min

Marginal cost: € 150/sample
(240 euro/sample with MS analysis), including structural and personal costs

Benefits:

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Prediction of typicality descriptors by analytical techniques

	Fluorescence	GC-SPME	HPLC-DAD-MS	Mass spectroscopy
color intensity	0,53			0.62
color hue	0,46			0.55
strawberry				0.64
berry fruit	0,51	0,48		0.55
sour cherry	0,58	0,51		0.63
cooked plum/animal				0.56
green bean/elder		0,45		0.62
herbaceous		0,54		0.62
black pepper/nutmeg		0,6		0.69
fusel alcohol				0.56
buttery/cheesy		0,51		0.65
sweet	0,41			0.50
sour		0,55		0.63
fruity	0,52			0.61
green-vegetative				0.64
astringent	0,51		0,8	0.76
bitter				0.66
body/density	0,56			
Oirrit		0,52		
Oredfruit		0,43		
Ospicy		0,53		
Oempyr		0,43		
Gpepper		0,69		

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How to promote food products typicality

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TYPIC

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