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# ANIMAL NUTRITION AND FOOD QUALITY

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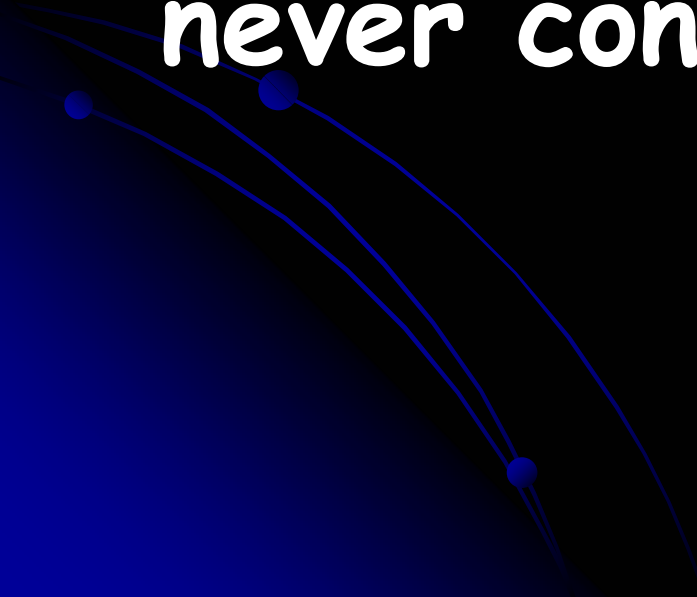
Foodstuffs of animal origin :

meat, milk, egg



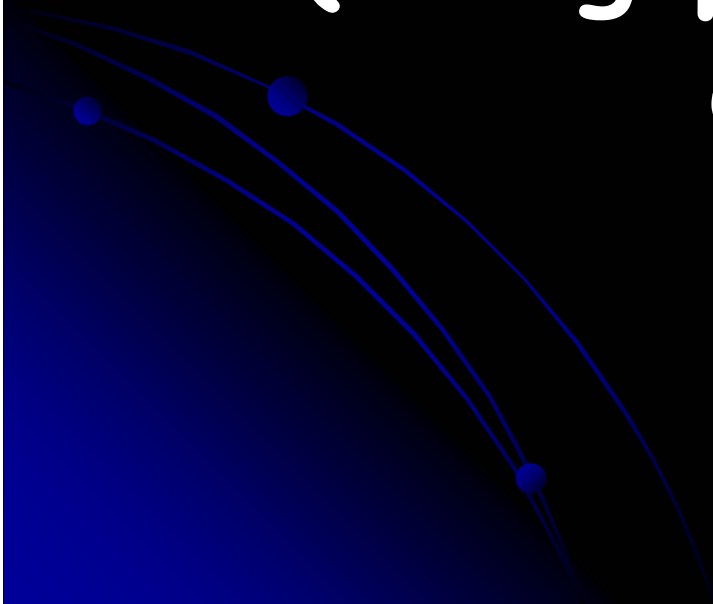
Fundamental requirement:

Foods (e.g. the meat) should  
never contain any unhealthy  
matters



# What does quality mean?

(Using pork meat as an  
example)



The food safety is an important indicator of qualities, but does not give guarantee for good food qualities



The meat is:

DM + Water

DM:

- Protein (incl.: Amino acids)
- Fats (Ether Extract, incl. Fatty acids)
- Carbohydrates (sugar)
- Ash matters (Minerals, Microelements)
- Vitamins
- Enzymes
- Hormones

Other qualities:


Taste - Odour - Colour - Marbles - etc.

Summarised: pleasure value

Further factors influencing pleasure value:

- Species (e.g. Mangalica, Large weight)
- Age (young/old, piglet/fattening/sow)
- Sex (male/boar, female/sow and young sow, castrated/barrow)

An often used slogan:  
The good food quality is that,  
for which it is possible to get  
a good price on the market





But new questions are coming:

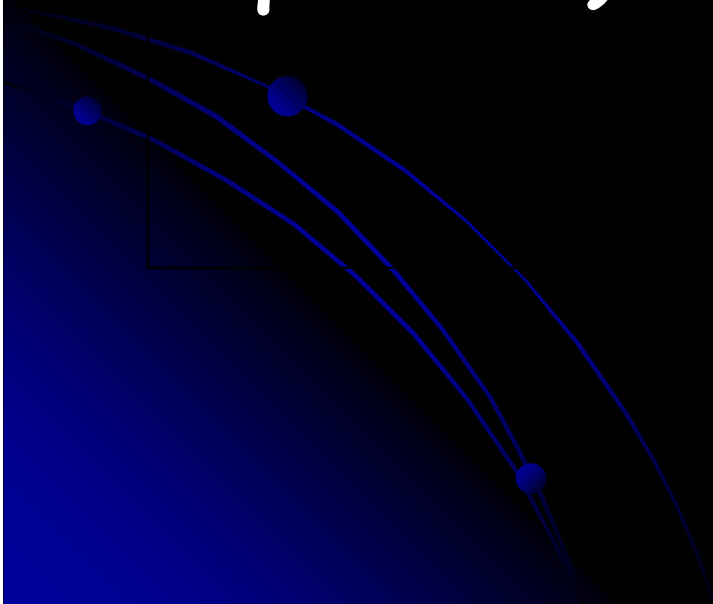
- On which market?  
(home?, abroad?)
- If at home, than in a city or in a villages?
- Who is the buyer?  
(a slaughterhouse?, a trader?,  
a housewife?, a cook?)

# Theory of the qualities:

Useful  
orientations  
(subjective  
qualities)

Production  
depend  
qualities  
oriented by  
production  
technology

Product  
depend  
qualities  
oriented by  
products



or aspects of  
technology  
hygiene  
nutrition value  
pleasure value  
productions-ethic

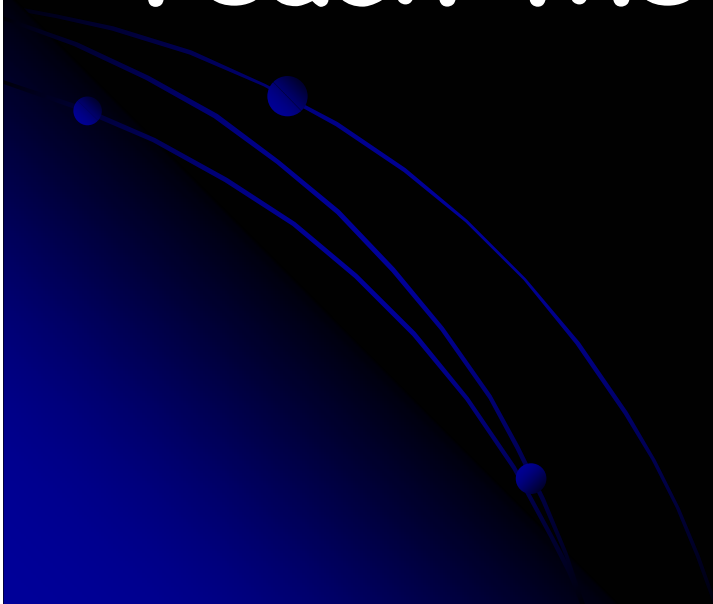
or for whom?

for animal producers?  
for slaughterhouses?  
for food traders?  
for housewives (in the  
shop or on the plate?)  
for scientist of nutri-  
tion?

## Quality praxis:

The final user (e.g. a housewife or a cook) will make a decision on the basis of their impression obtained with their sensory organs, while on the different levels of the production chain a decision is made all the time, and there is only one demand concerning the next level of the production line

Who could tell us, how we  
should feed our animals, to  
reach the required qualities?



# Quality features that can be influenced by feeding

possible:	impossible:
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- meat/fat ratio,
- amount of meat and fat,
- fatty acid composition of fat tissue
- vitamin and mineral content
- taste
- bio-qualities
- food safety

- composition of meat protein
- problems origin from technological mistake
- the pleasure value (because it is genetically regulated)

# Tab. 1: Feeds in the experiment

	Feed „A”			Feed „B”		
	1.	2.	3.	1.	2.	3.
N g/MJ DE	2,08	1,93	1,73	1,88	1,73	1,49
LYS g/MJ DE	0,77	0,70	0,61	0,58	0,50	0,39
% in LYS						
MET+CYS	57	60	63	69	76	86
THR	65	65	66	73	76	82
TRP	22	22	22	24	25	26
LYS % in CP	5,9	5,8	5,7	4,9	4,6	4,2

## Tab. 2: Productions results

	Feed „A”	Feed „B”
Live days	183	205
Gain, g/day	703	602
Conversion rate: Feed, kg/kg	2,8	3,4
DE MJ/kg	41,8	44,4
LYS g/kg	30,6	22,7
N g/kg	83,4	77,3
Slaughter weight, kg	100	100
Left half: Weight, cold, kg	38,0	38,0
Lean meat ratio, %	56,5	52,1
Fat ratio, %	11,1	12,8
Gain/live days, g	554	495
M. long.dorsi, g	3428	3365
Shoulder, g	3231	3050
Ham, g	6948	6745



Tab. 3: Amount of linoleic- and linolenic acid in feed (%)

Feed	Linoleic acid	Linolenic acid
A	2,90 – 2,96	0,28 – 0,30
B	0,98 – 1,08	0,00 – 0,02

**Tab. 4: Amount of linoleic- und linolenic acid in fat of speck and ham (%)**

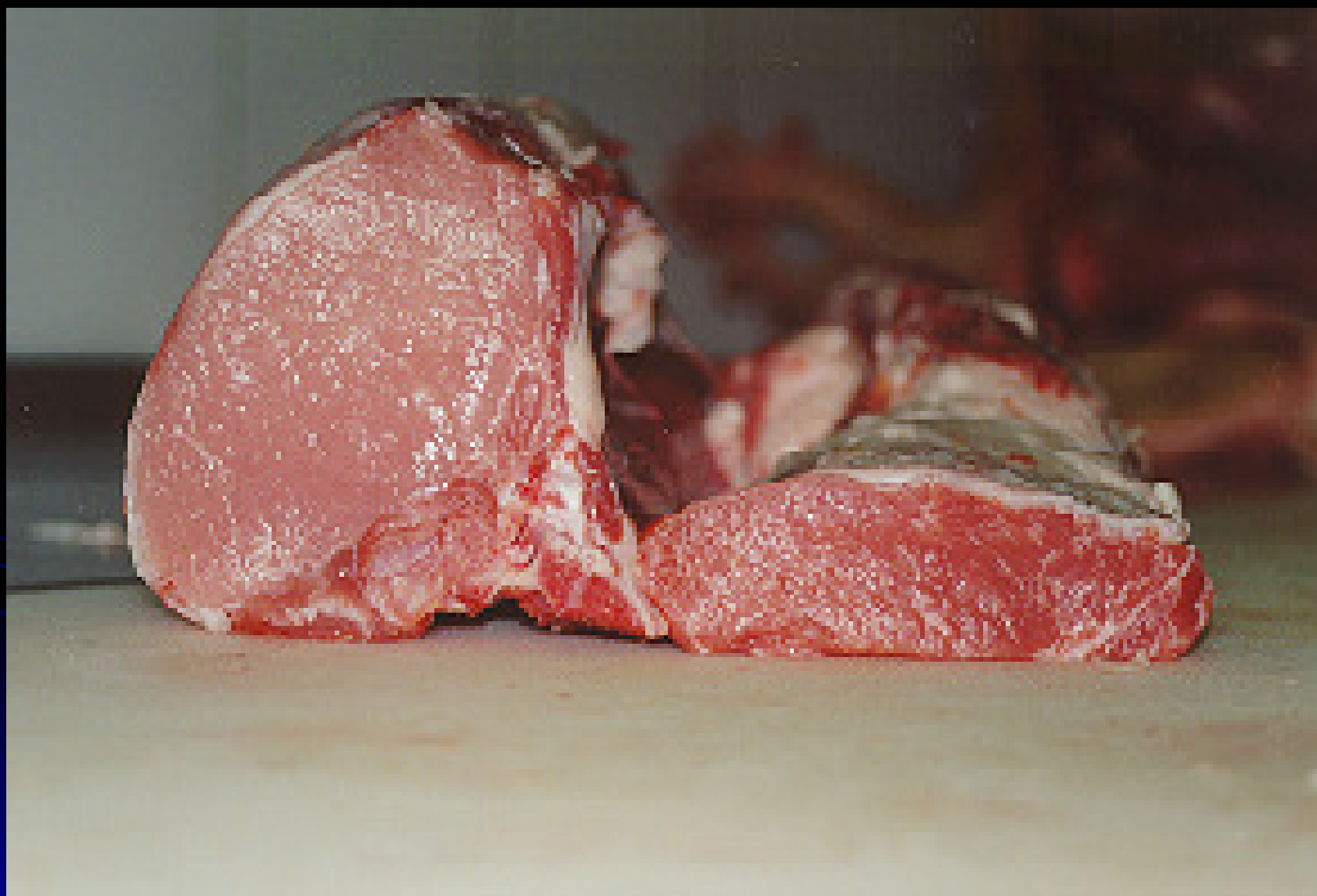
Feed	Breed	Speck			Ham		
		Linoleic acid	Lino- lenic acid	Ratio	Linoleic- acid	Lino- lenic acid	Ratio
A	Large white	18,5	1,8	10,2	13,9	1,1	12,9
	Mangalitza	13,6	1,3	10,5	9,5	0,7	14,2
B	Large white	10,4	0,8	13,4	7,7	0,4	22,1
	Mangalitza	8,0	0,5	14,8	6,1	0,3	24,4

Tab. 5: Amount of fat and cholesterol in speck

Feed	Slaughter weight, kg	Mangalitzza		Large white	
		Fat, %	Cholesterol, mg/100g	Fat, %	Cholesterol, mg/100g
A	100	86	69	86	63
	130	91	80	89	59
B	100	91	92	8	66
	130	93	89	86	64

Tab. 6: Amount of fat and cholesterol in ham

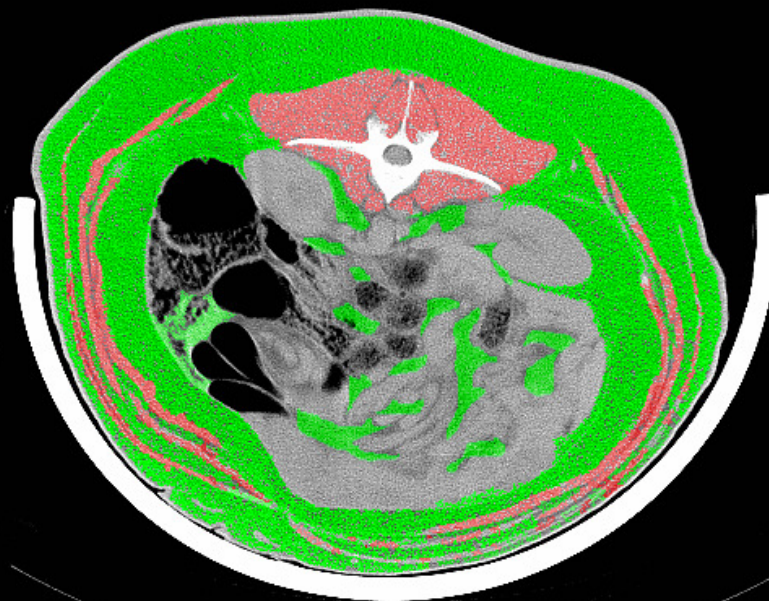
Feed	Slaughter weight, kg	Mangalitza		Large white	
		Fat, %	Cholesterol g/100g	Fat, %	Cholesterol, mg/100g
A	100	6,9	53	4,6	52
	130	9,8	61	5,4	31
B	100	8,4	55	5,5	56
	130	9,3	78	5,8	37




LARGE WHITE



MANGALITZA



Direct and scientifically  
correct communication of food  
quality would be needed all  
over Europe /feed and food/  
free from commercial  
interests and yellow press  
sciences



And we have not talked about  
ways of preparation in the  
kitchen, that we can only hope  
that our first class pork will  
retain its quality while it is  
prepared by a housewife or a  
cook