


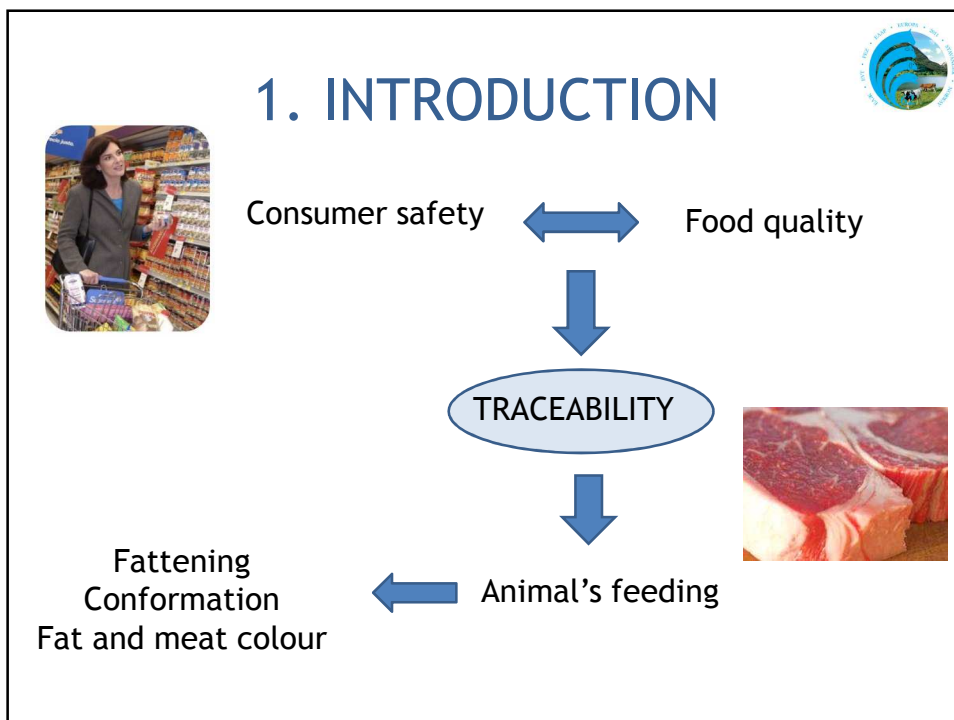
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Differentiation of carcasses of cattle fed mainly forages or concentrates on the basis of conformation, fattening and colour variables.

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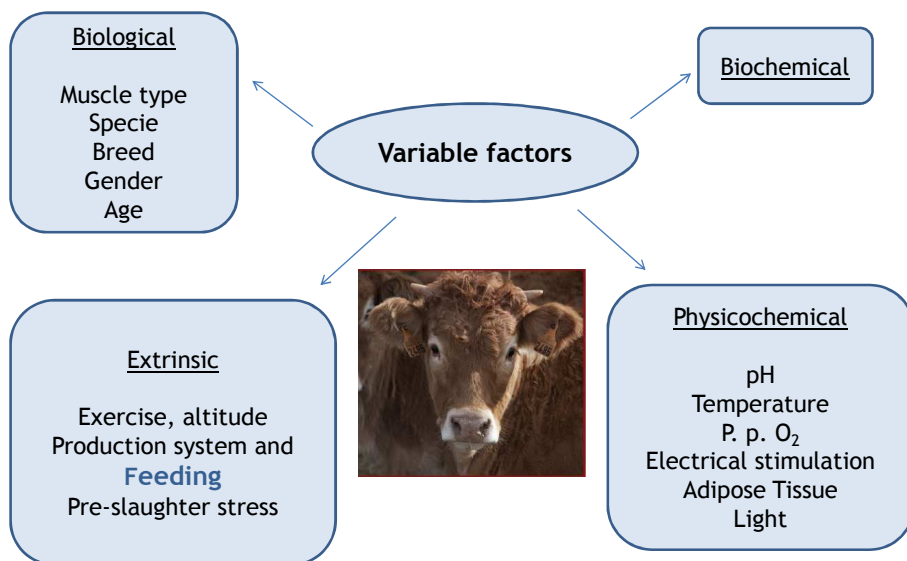
Meat and fat colour as differentiation parameter



- ✓ Parameter evaluated by consumers when purchasing meat.
- ✓ Meeting point for the evaluation of meat quality between the different links in the production line (farmers, slaughterhouse, consumers).
- ✓ Variable easy to measure.



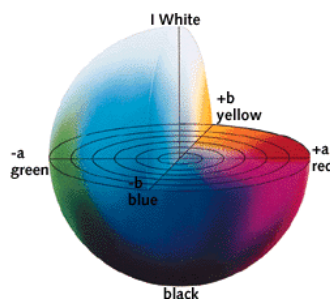
Colour variable factors



2. AIM OF THE STUDY



To establish differences based on the feeding system in bovine carcasses by means of variables that are easy to measure (carcass or colour variables) to ensure the traceability of meat.

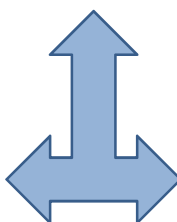


3. MATERIAL AND METHODS



125 beef carcasses Class A (European regulation)

73 animals
Diet based on forages



52 animals
Diet based on concentrates

3. MATERIAL AND METHODS



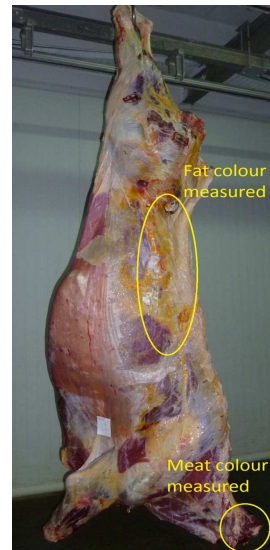
o Carcasses variables:

(Regl. CE 1249/2008)

- Conformation (SEUROP).
- Fattening (1-5).

o Colour variables:

- Meat: Trapezium muscle
- Fat: Subcutaneous.

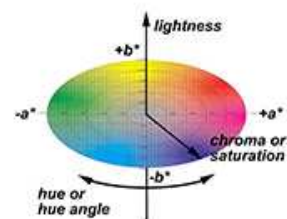


Colour variables.

Spectrophotometer CM-700d/600d
according to the CIE (1986).

- Illuminant D65, 10 degree observer.

- o L^* → Lightness index:
from 0 (black) to 100 (diffuse white).
- o a^* → red index (+red/ - green).
- o b^* → yellow index (+ yellow/ - blue)
- o h^* (hue) → (b^*/a^*) (0 - 360 degrees).
- o C^* (Chroma) → $\sqrt{(a^*)^2+(b^*)^2}$ (0 - 200).

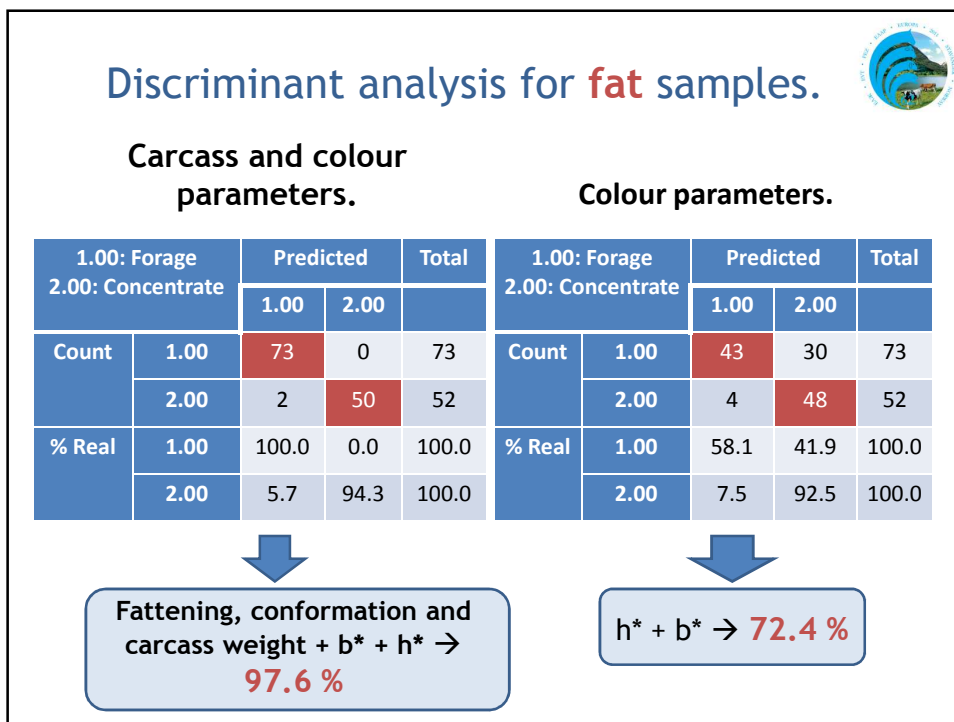
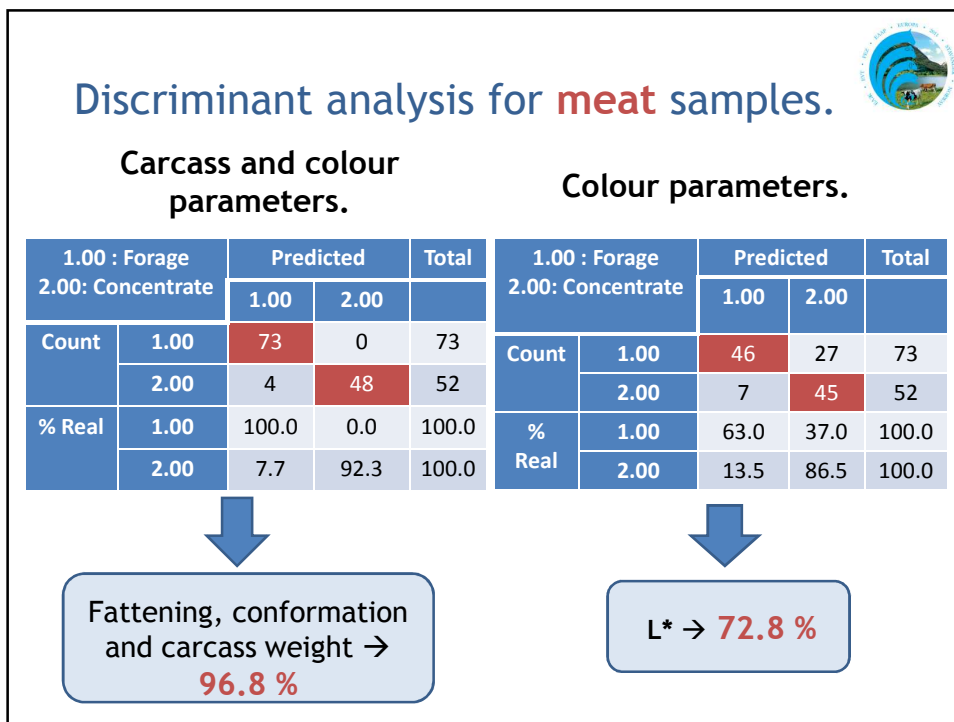




4. RESULTS AND DISCUSSION



Variables	Feeding system							
	Concentrate				Forage			
	Meat		Fat		Meat		Fat	
	Average ± s.e.	Sig.	Average ± s.e.	Sig.	Average ± s.e.	Sig.	Average ± s.e.	Sig.
Weight (Kg)	303.32 ± 6.46				115.48 ± 11.11			
Conformation	3.48 ± 1.00 ***				1.99 ± 0.14 ***			
Fattening	2.73 ± 0.62 ***				2.00 ± 0.00 ***			
L*	31.82 ± 0.44	NS	76.15 ± 0.54	***	38.22 ± 0.77	NS	75.21 ± 0.89	***
a*	14.72 ± 0.38	NS	2.37 ± 0.49	***	13.90 ± 0.37	NS	2.76 ± 0.81	***
b*	9.01 ± 0.22	NS	9.38 ± 0.57	***	10.73 ± 0.27	NS	11.46 ± 1.72	***
C*	17.32 ± 0.40	NS	10.08 ± 0.66	***	17.69 ± 0.41	NS	12.98 ± 1.80	***
h*	31.70 ± 0.60	NS	86.06 ± 2.52	NS	38.34 ± 0.80	NS	115.09 ± 5.65	NS



5. CONCLUSIONS



Discrimination of bovine carcasses due to feeding systems:

1. Only colour variables → satisfactory.
2. Colour + carcass variables → better discrimination
3. Fat colour better than meat colour.



**THANK YOU FOR
YOUR ATTENTION**