Update on a European beef eating quality model

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Background

- Beef is not meeting consumers' expectations
- No strong relationship is observed between eating quality of beef and its price (Normand *et al.,* 2014).
- A consumer-driven prediction model of beef eating quality has been developed in Australia

• Is the MSA system relevant for the European beef chain ?



Which is better?

And why?

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Beef Quality Grading System



Beef Quality Prediction

Cattle

Consumers







Prediction of beef quality in Australia the Meat Standards Australia system

Prediction



MSA2000model®

Hang (AT/TC/TS/TX) Sex (M, F) Est.% Bos Indicus Hump Height cms Hot Std Carc Weight USDA Ossification Milk Fed Vealer Y/N USDA Marbling Days Aged (min 5) Quarter Point Ribfat Ultimate pH

AUSMEAT Meat Col. Saleyard? (Y, N)

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Cut Description	Muscle Reference	Days Aged	Grilled Steak	Roast Beef	Stir Fry	Thin Slice	Cass- erole	Corne d Beef
Tenderloin	TDR062		5	4	5			
Cube Roll	CUB045		3	3	3	4		
Striploin	STR045		3	3	3	3		
Oyster Blade	OYS036	1	4	3	4	4		
Bolar Blade	BLD096	 	3	3	3	3	3	
Chuck Tender	CTR085			3	3	3	3	
Rump	RMP131		3	3	3	3		
Point End Rump	RMP231		3	3	3	4		
Knuckle	KNU099		X	3	3	3	3	
Outside Flat	OUT005			x	X	3	3	3
Eye Round	EYE075		x	3	3	3	3	X
Topside	TOP073		x	3	X	3	3	
Chuck	CHK078			3	3	3	3	
Thin Flank	TFL051	<u> </u>			3		3	
Rib Blade	RIB041				3			
Brisket	BRI056				X	3	3	X
Shin	FQshin						3	

Collaborative partners

774 Carcasses X 7 samples

• 6 experimental samples



European Carcass Classification

Fatness score



Conformation score



Eating quality and carcass conformation





Bonny et al., Animal (2016), 10:6, pp 996–1006

Eating quality and carcass fatness





Bonny et al., Animal (2016), 10:6, pp 996–1006

EUROP-Results





Beef from males has lower eating quality scores but this is not fully explained by MSA





Bonny et al., Animal (2016), 10:6, pp 987–995

Beef from beef breeds has lower eating quality scores for 5 muscles but this is not fully explained by MSA





Bonny et al., Animal (2016), 10:6, pp 987–995

MSA Ossification score (vertebral column) or age to estimate physiological maturity ?





Relationship between ossification and age



Demographics of consumers

	France	Ireland	Northern Ireland	Poland			
Age							
Gender							
Income							
Occupation	E	Effect sizes similar					
Children in the household	t	to standard error					
Adults in the household							
Frequency of eating beef							
Importance of beef							
Preferred cooking doneness							
	Ronny et al	Animal (201	7) accenter	1			

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Proportional willingness to pay



Bonny et al., Animal (2017), accepted

Conclusions

- A beef eating quality grading system, similar in design to the Australian MSA system, is highly applicable to both the European beef industry and the European consumers, despite the need for some adjustments
- The EUROP grid would have to operate in parallel with an eating quality based grading system .
- A separate adjustment for entire males and dairy breeds is required to accurately predict eating quality .
- Both ossification and age are required to optimise accuracy.
- There were no major demographic effects on consumer evaluation of eating quality and willingness to pay across Europe .



Are you interested to publish abstracts of this workshop?



La revue scientifique

Viandes & Produits Carnés Référence de l'article : VPC-2016-32-1-6 Date de publication : 08 février 2016 www.viandesetproduitscarnes.com



Compte-rendu du congrès intitulé « Qualité durable de la viande bovin<mark>e en Europe »</mark>

Report of the workshop "Sustainable beef quality for Europe – A workshop for industry and scientists"

Abstract: Report of the workshop "Sustainable beef quality for Europe – A workshop for industry and scientists" Beef industry representatives and scientists from across Europe met on 1-2 October 2015 in Milan for a workshop entitled "Sustainable beef quality for Europe – a Workshop for Industry and Scientists". The aim of the workshop was to facilitate knowledge exchange and strengthen links between scientists and industry across Europe. Short presentations were given on 15 topics of relevance to the quality, competitiveness and sustainability of European beef. These covered the eating quality of European beef, the practical application of science by the beef industry to improve quality, sustainability of European beef production and the tools available or in preparation to assist the industry in the delivery of quality beef. Participants also contributed to two workshops which asked "How can Europe get the best value from its beef?" and "What is needed to ensure sustainability of the European beef industry for the next 10 years?". This article presents a summary of these articles and the outcomes of the workshops.

Are you interested to join the EAAP cattle network?

The EAAP Cattle Network Working Group has been established in order to target exchanges between research and the industry in the cattle sector.

Its main aims are as follows:

- Monitor and discuss trends in production and consumption of cattle products and policy measures affecting the cattle sector
- Analyse the sustainability of cattle farming
- Give common and standardized tools to present and describe farm management.
- Organise meetings and publications



