



UNECE EATING QUALITY UPDATE

UNECE Specialized Section on Standardization of Meat

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From the IMR3G Foundation & Birkenwood



PROGRESS OVER PAST YEAR

- Finalisation of ISO Quality System for IMR3GF and Licensing of third parties
- DATAbank: Building infrastructure and capability to provide commercial grading
- Data collection to standard protocol in Ireland, Poland, France, Switzerland, Spain and Italy
- Chiller Assessor Training Course in South Africa
- Start of Polish eating quality project
- Consumer evaluation conducted in France
- Version 2 European consumer prediction model presented

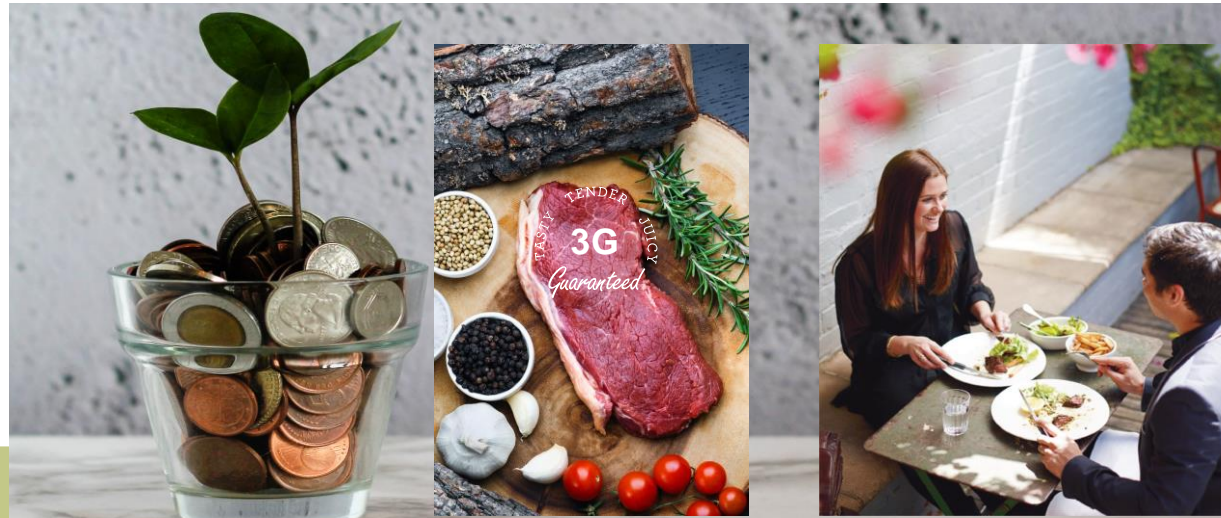
DATAbank



International Meat Research 3G
Foundation

OBJECTIVES:

- To facilitate high quality consistent consumer focused collaborative research
- To enable application of compatible application and data protocols from “farm to fork”
- To provide secure standardized data storage for multiple projects and partners
- To facilitate pooling of data for research with data owner permission





DATAbank – Updates

- Metadata updated using the UNECE Bovine Standards
- Sample Fabrication Standard Description development
- DATAbank: Building infrastructure and capability to provide commercial grading
- Harvest design update



DATAbank – Data ownership

Definition of data ownership and access rights

1

Category 1 - DATAbank Research Leaders

Category 2 - Senior Researchers

Category 3 - Approved researchers & technicians

Category 4 - Supervised personnel

Category 5 - Read only

2

Permissions

Admin Level

Assign Users & Category

Allow view access to other owners

Assign data owners/Project partners

Elect Research only or Commercial sharing agreement

(Including agreements re publication and acknowledgements)

Project Execution

Initiate a Project

Project Design - Final Approval - Multi Owner

Project Design - Final Approval - High Complexity

Project Design - Final Approval - Moderate Complexity

Project Design - Final Approval - Basic

Project Design - Development

- Upload & Edit permission including data file uploads

Data download permission

Data view permission

DATA OWNERSHIP OF EACH PROJECT

3

- ALL DATA

- Animal data

- Abattoir data

- CutUp data including treatments

- Pick & Post (design & implementation)

- Sensory Design

- Sensory data

- Laboratory data

- NoSQL additional data



Harvest design help

Harvest design case study

For any DATAbank experiment an animal, or more likely group/mob of animals will be transported to an abattoir for slaughter. Sometimes these are a uniform single group from a common source with common characteristics and transported and slaughtered identically with the experimental comparison either something applied post slaughter such as a side treatment that can be tested "within animal" or at the cut/muscle level such as a cooking or ageing comparisons. On other occasions the experimental comparison may be between groups of animals of different breed, sex, hgp treatment, age or managed under different regimes. In all cases the Experimental Design (ED) must designate management of bodies and sides of bodies prior to designating the cuts to be acquired from a body (single units such as tail or heart) or side(s), in which case one cut is available from each of the left and right side.

The following examples attempt to provide examples for all possibilities prior to designating muscle-based treatments, applied after sourcing the primal(s) at boning.

Case Study: Simple design for a single animal group with treatments all post cut level



Case Study: Simple comparison of young and old female cattle



Case Study: Breed x Feed ED example



Case Study: Extension of example 3 to include hang comparison



Case Study: Example of greater than 3 side treatments









Design Notes - Allocation of Groups

Design Notes: Overview





Sample creation

Code	Name	Cook Type	Potential samples in primal	Selected count in primal	Primal weight (kg. est.)	Sample weight (kg. est.)	Position	Treatment	Packaging	Days	Sample Type	 
CUB045	CUB045 Rib Eye Muscle Position X - M.longissimus dorsi et thoracis	Grill	1	2	1.260875	0.75	position.X	None	Aged as a vacuum packed block	7, 28	Consumer	
RMP005	RMP005 Rump Cap Position X - M.biceps femoris	Grill	0.5	2	0.95225625	0.75	position.X	None	Aged as a vacuum packed block	7, 28	Consumer	
TDRBO	TDR062 Tenderloin Butt Off (or Tenderloin Meat) - M.psoas major	Grill	UNKNOWN	2	UNKNOWN	0.75		None	Aged as a vacuum packed block	7, 28	Consumer	
TOP073	TOP073 Topside Flat Position X - M.semimembranosus	Grill	4	2	3.6025	0.75	position.X	None	Unknown	7, 14, 21, 28	Consumer	

CANCEL

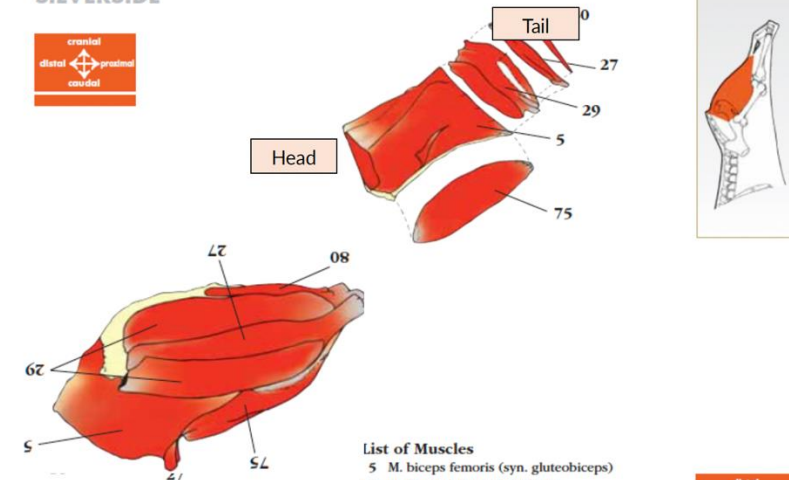


Polish EQ Project – Update

- 15 muscles with different positions and ageing time
- 4020 consumers = 2814 samples

Zrazowej zewnętrznej: Outside
UNECE item code: 2030

SILVERSIDE

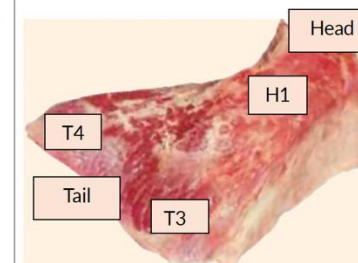


List of Muscles

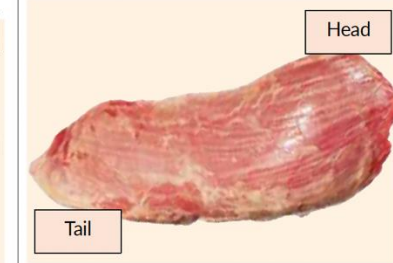
- 5 M. biceps femoris (syn. gluteobiceps)
- 27 M. flexor digitorum sublimis
- 29 M. gastrocnemius
- 75 M. semitendinosus
- 80 M. soleus



OUT005 : Zrazowa dolna
Positions H1 & T3 to be collected



EYE075 : Ligawa
Positions Head & Tail





South African EQ – Update

- Chiller Assessor training course last June
- Eating quality data on 3120 consumers
- 3 South African provinces
- Almost 300 cattle analysed





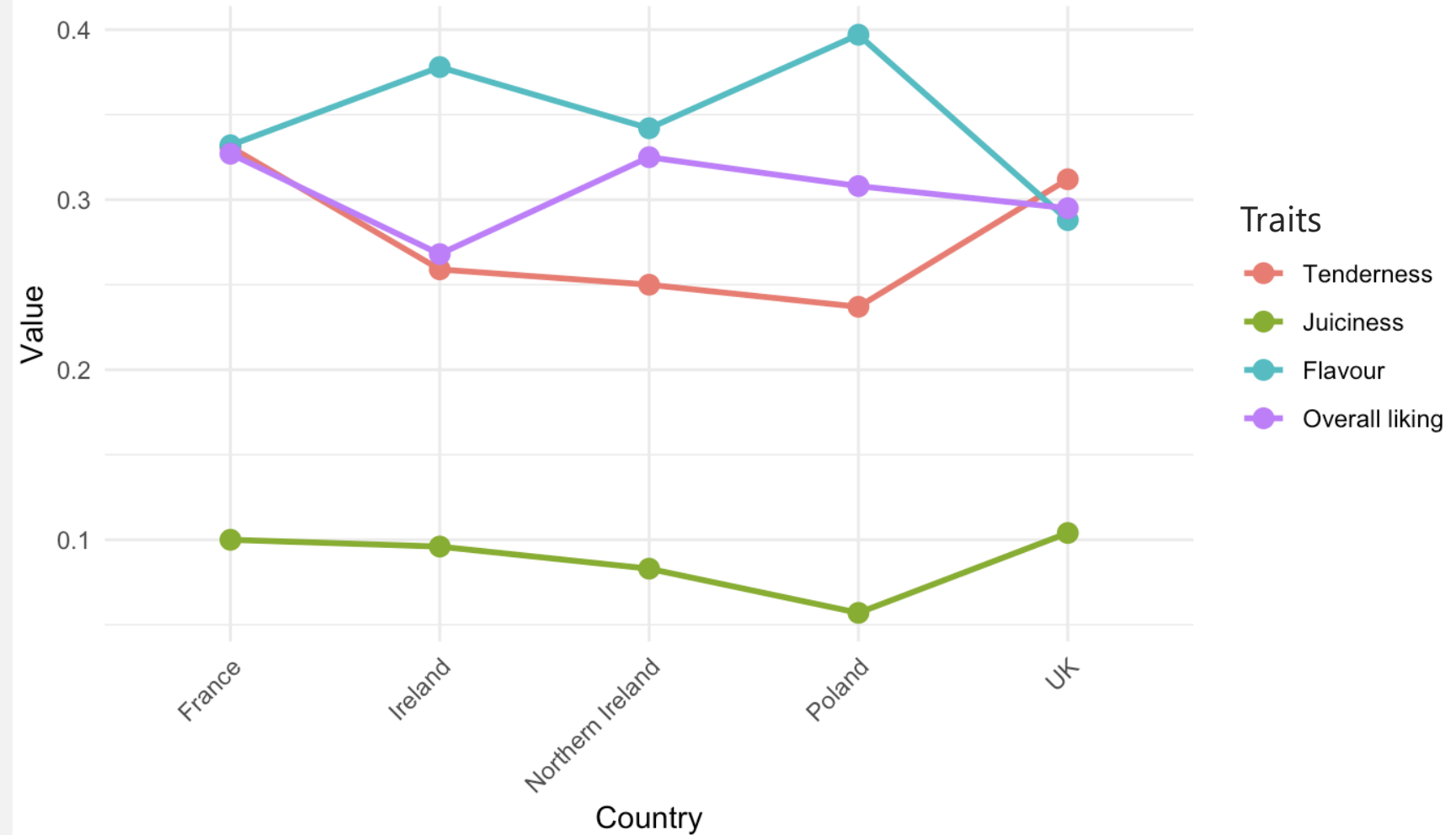
EU data – Update

	GRILL (N=97388)	ROAST (N=18848)	SLOW COOK (N=4200)	YAK (N=2520)	Overall (N=122956)
Consumer origin					
England	3381 (3.5%)	0 (0%)	0 (0%)	0 (0%)	3381 (2.7%)
France	16380 (16.8%)	0 (0%)	0 (0%)	0 (0%)	16380 (13.3%)
Ireland	14638 (15.0%)	1078 (5.7%)	0 (0%)	2520 (100%)	18236 (14.8%)
Northern Ireland	21850 (22.4%)	13150 (69.8%)	0 (0%)	0 (0%)	35000 (28.5%)
Poland	33600 (34.5%)	4620 (24.5%)	4200 (100%)	0 (0%)	42420 (34.5%)
Wales	7539 (7.7%)	0 (0%)	0 (0%)	0 (0%)	7539 (6.1%)



THE IMPORTANCE OF SENSORY TRAITS WITH 3G

Similar results with sensory
traits by countries.



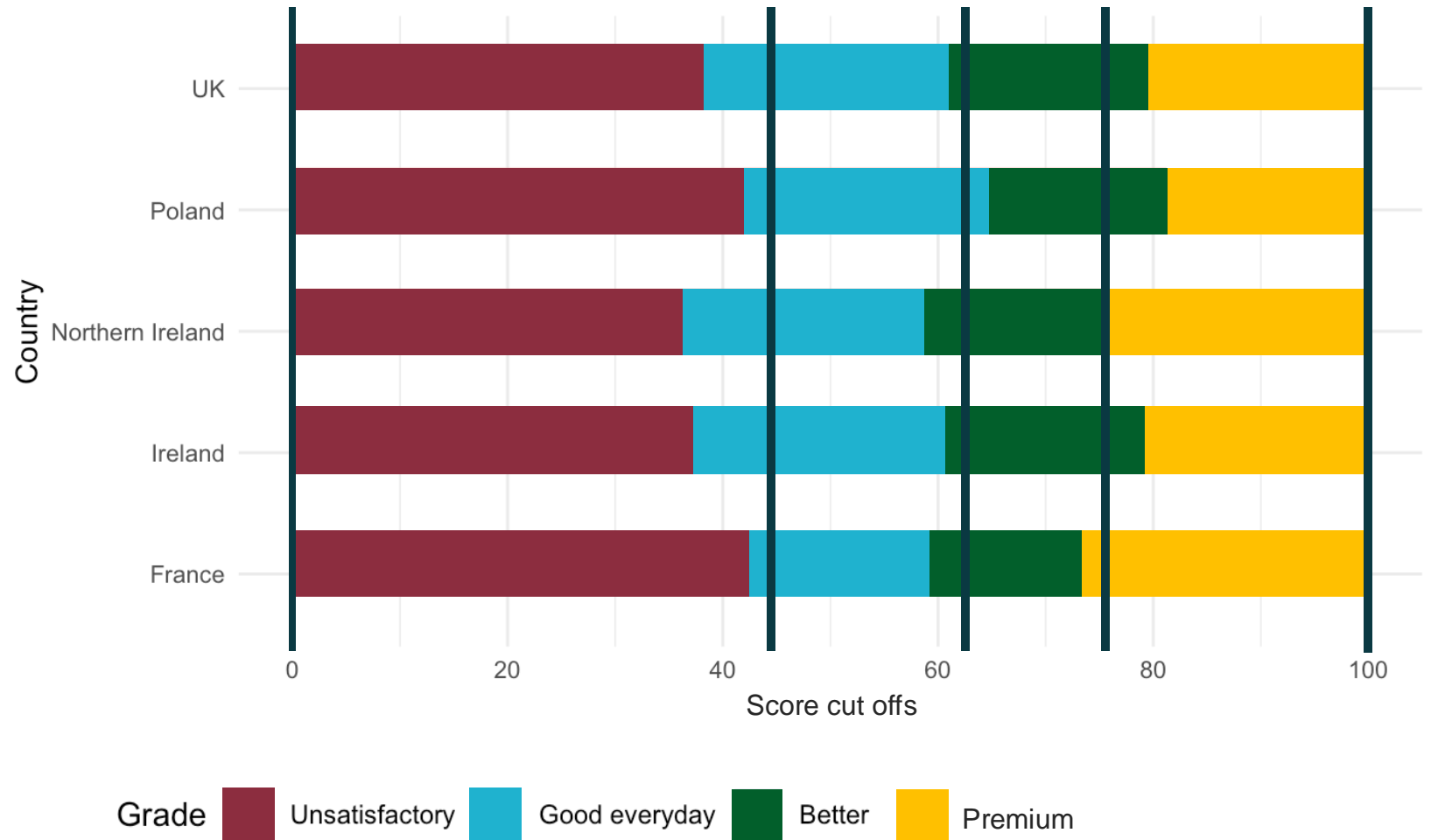


HOW IS EQ SCORE CALCULATED



THE IMPORTANCE OF SENSORY TRAITS WITH 3G

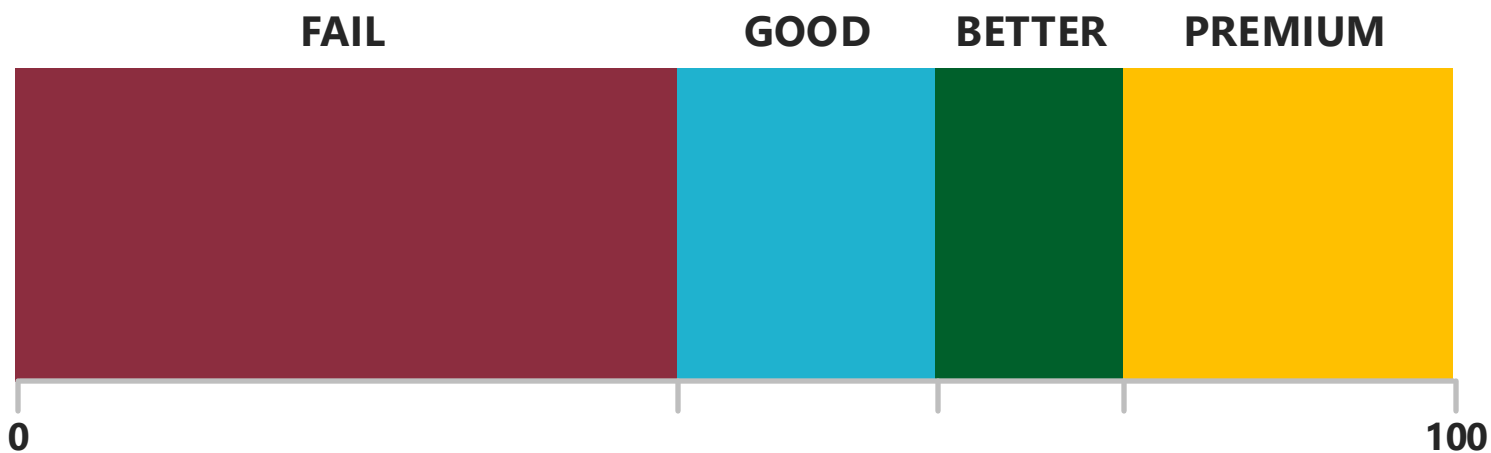
Similar results with eating
quality score cut offs by
countries.





THERE ARE CLEAR GRADES WITH EQ

Sensory testing of over 180,000 consumers in 11 countries shows that consumers can distinguish 3 quality grades. Based on this, we have the very clear grades you can see here.





HOW IS A 3G MEAT EATING QUALITY GRADING SCORE CALCULATED

1. Chiller Assessment

Input Measurements

- Sex
- Ossification
- Marbling
- Rib Fat
- Carcass Weight
- Hanging Method
- Hump Height
- Ultimate pH



2. 3G Grading Prediction Model combines chiller assessment, cut type, maturation days & cooking method (Grl, Rst, Yak)



Cut



Cooking
Method



Maturation
Days




**3G MEQ[®]
SCORE
(0-100)**



3G BEEF EATING QUALITY GRADING SYSTEMS

EUROP O+3			
GRADING INPUTS			
BREED	LMX	SEX	M
HUMP	75	ANIMAL AGE	23
CARCASS WEIGHT	388	OSSIFICATION	150
HANG	TX	MARBLING	290
pHu	5.62	RIB FAT	9
MEAT COLOUR		DAYS AGED	21

Days aged		Cooking methods	
		Grill	Roast
TDR034	Tenderloin	Premium	
TDR062	Tenderloin	Excellent	Excellent
CUB081	Cube Roll	Excellent	Premium
CUB045	Cube Roll	Premium	Premium
OYS036	Oyster Blade	Premium	Premium
STA045	Striploin Anterior	Premium	Premium
STR045	Striploin	Premium	Premium
STP045	Striploin Posterior	Premium	Premium
RMP005	Rump Cap	Premium	Premium
RMP231	Rump	Premium	Premium
RMP131	Rump	Premium	Premium
RMP087	TRI-TIP	Good	Good
BLD096	Blade Bolar	Good	Good
CHK074	Chuck Roll	Good	Premium
CHK078	Chuck Crest	Good	Good
KNU066	Knuckle	Premium	Premium
KNU099	Knuckle	Good	Good
CTR085	Chuck Tender	Good	Good
TOP001	Topside	Good	Good
TOP073	Inside Meat	Good	Good
EYE075	Eye Round	Good	Good
OUT005	Outside Flat	Fail	Good



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Eating Quality - Specialized Section on Standardization of Meat

THANK YOU



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