



URUGUAYAN NATIONAL BEEF QUALITY AUDIT-2013: A SURVEY OF BEEF INDUSTRY RELATED TO QUALITY AND VALUE OF CATTLE



Marcia DEL CAMPO^{1*}; Gustavo BRITO¹; Daniela CORREA¹; Augusto BORCA²; Gustavo TOYOS²; Francisco ALBIN²; Roberto SAN JULIÁN¹ and Ricardo ROBAINA²

¹National Institute of Agricultural Research, INIA Uruguay and ²National Meat Institute, INAC Uruguay

*mdelcampo@tb.inia.org.uy

1

INTRODUCTION

The third Uruguayan National Beef Quality Audit (UNBQA) was held in 2013 following a 5 years period. It was conducted in a cooperative project among Colorado State University, INAC e INIA. NBQAs helps the Uruguayan beef industry to evaluate the beef quality progress and provide each five years a benchmark to identify carcass and beef quality attributes that could be improved through animal and carcass management. Based on them, education, training and research programs are developed.

2

MATERIALS AND METHODS

10 packing plants visited, four days each: 2 in Fall and 2 in Spring

✓ *Harvest Floor Assessments:*

n= 7308: 33% of the cattle from each production lot

Before Hide Removal

- Breed-type based on visual characteristics of each breed
- Hide brands incidence based on quantity and location
- Mud/manure presence based on the European Welfare Quality Protocol
- Horns, if present, visually for length: none, ≤ 10 cm, and >10 cm

After Hide Removal

- Offal: liver and head evaluated for wholesomeness, N° and reasons for condemnation
- % of females carrying fetuses and time of pregnancy: 1st, 2nd, 3rd third
- Carcass bruise incidence considering quantity, severity and location

✓ *Carcass and meat Assessments:*

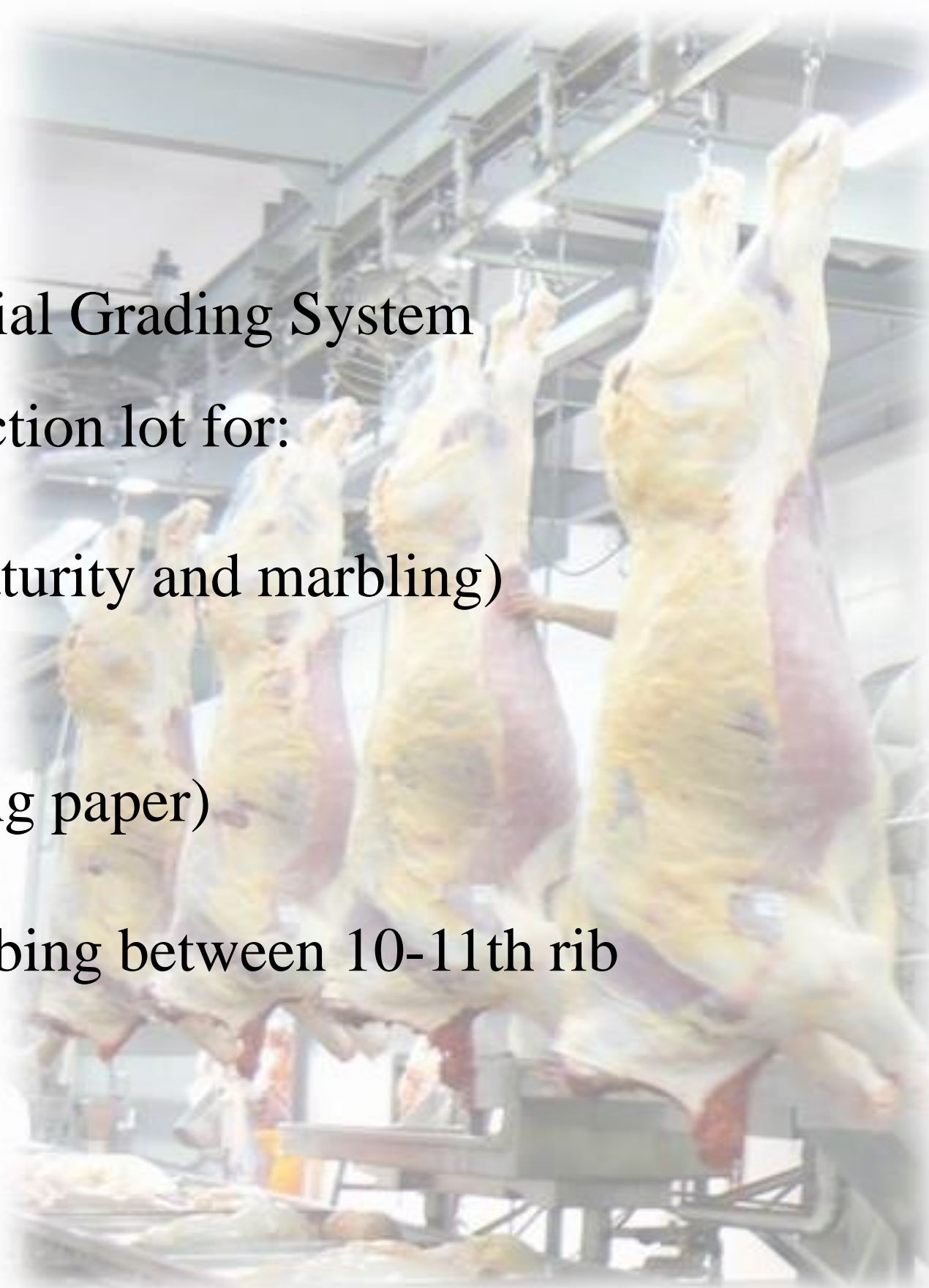
n = 22044 - 100% of each production lot for:

- Hot carcasses weight (HCW)
- Carcass clasification applying the Official Grading System

n= - 3750 - 17 % of carcasses of each production lot for:

- AUSMeat fat color scale (1 to 8)
- USDA quality grade factors (overall maturity and marbling)
- Ultimate pH and temperature
- Visual meat color
- Rib eye area (REA, measured by blotting paper)
- Fat thickness (FT)

Measured taken at ribbing between 10-11th rib



3

RESULTS/DISCUSSION

✓ *Harvest Floor*

Before Hide Removal

- Breed: 39.4% Hereford, 25.6% Angus, 18% British crosses, 17% Others
- Brands incidence: one (73%), two (24.2%), more than two (2.8%)
- Brands location: 88.1% on the butt
- Visible Mud/manure: 87.1% of cattle did not have
- Horns presence: 29.1%; >10 cm: 20.2% of the animals

After Hide Removal

- Livers condemned: 34.4% - Heads condemned: 0.5%
- Pregnancy rate: 23.5%
- Bruise incidence: 70.9% - Location: 29% round, 22.5% chuck, 16.9% rib
- Type 2 bruises, affecting the product: 28%

✓ *Carcass and meat traits*

- Sex class: steer 61%, heifer 6% , cow 33%
- Permanent incisors: zero 2.7%, two 15.5%, four 21.4%, six 22.3%, eight 38.1%
- Dark cutters: 9%

Table 1. Mean and SD of carcass and meat quality traits

Traits	Steer	Heifer	Cow
HCW (kg)	276.1 (38.4)	207.2 (33.6)	224.7 (33.3)
FT (cm)	0.93 (5.3)	0.86 (4.9)	0.95 (5.7)
REA (cm2)	62.2 (9.3)	57.0 (8.0)	55.7 (8.8)

Table 2. Frequencies of marbling scores,carcass maturity and USDA Quality Grade in steers

Steers					
Marbling score	Freq (%)	Overall Maturity	Freq (%)	USDA Quality Grade	Freq (%)
Tr	15.5	A	62.0	Choice	18.7
Sl	48.3	B	33.5	Select	23.3
Sm	26.5	C	2.7	Standard	34.7
Mt	7.1	D	1.1	Commercial	3.4
Md	2.0	E	-	Utility	19.1
Sl A	0.3			Cutter	1.8

4

SUMMARY/CONCLUSIONS

Most important trends observed between UNBQA 2007 and 2013

- ✓ Fewer animals with horns
- ✓ Lower level of condemned livers
- ✓ More carcasses with bruises
- ✓ Greater severity of bruises
- ✓ More steers with 8 teeth
- ✓ Higher Pregnancy level
- ✓ Higher HCW
- ✓ Lower level of dark cutters
- ✓ Higher marbling score

5

REFERENCES AND ACKNOWLEDGMENT

We wish to thanks Colorado State University for the knowledge of this methodology and INIA and INAC for supporting this research