AN INITIATIVE OF
Making More From Sheep

awi Australian Wool Innovation Limited

mla MEAT & LIVESTOCK AUSTRALIA

Lamb – Meating Consumer Expectations

Graham Gardner

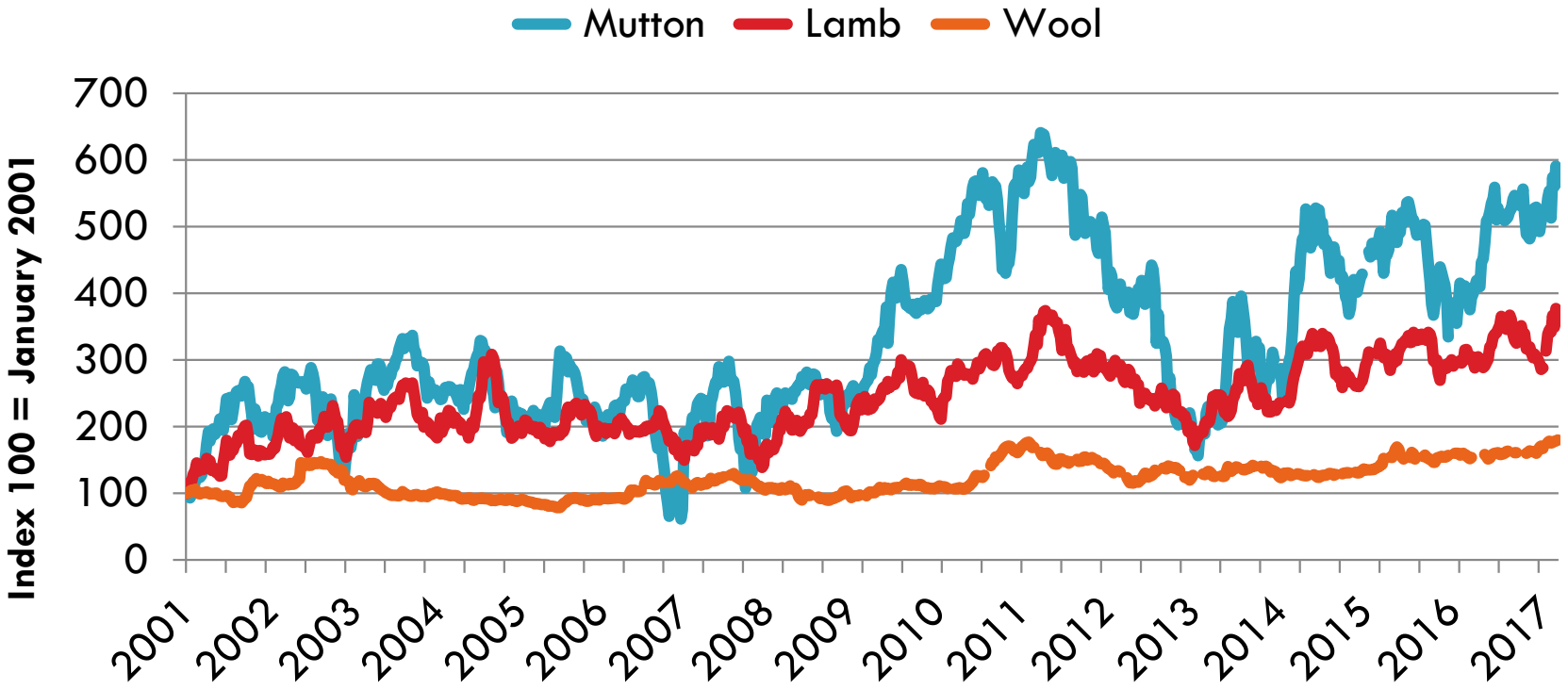
EVENT SUPPORTERS:

Elders LANDMARK SHEEP CRC

Key Points

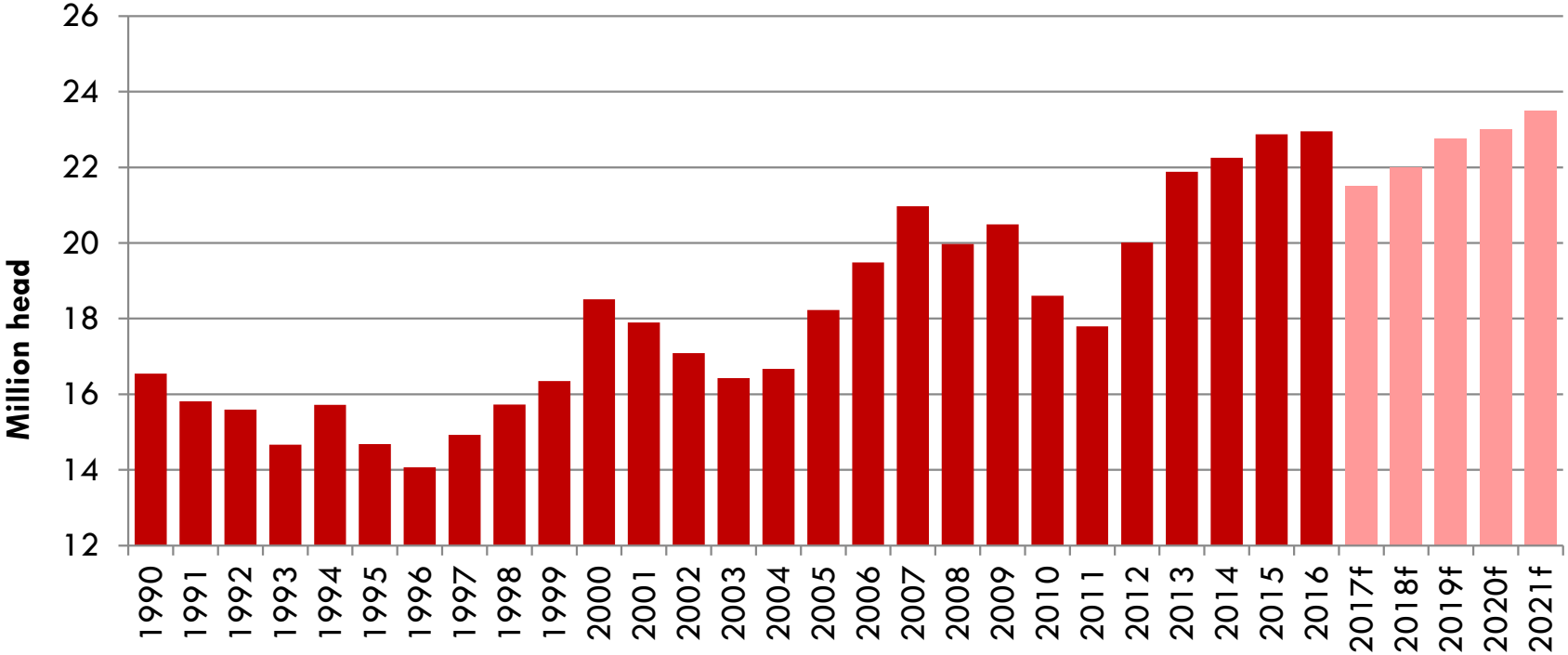
- Industry Projections
- Major Markets
- Lean Meat Yield
- Livestock Data Link
- Eating quality
- Future grids – based on objective measurement of the carcase

Australian sheep and wool markets



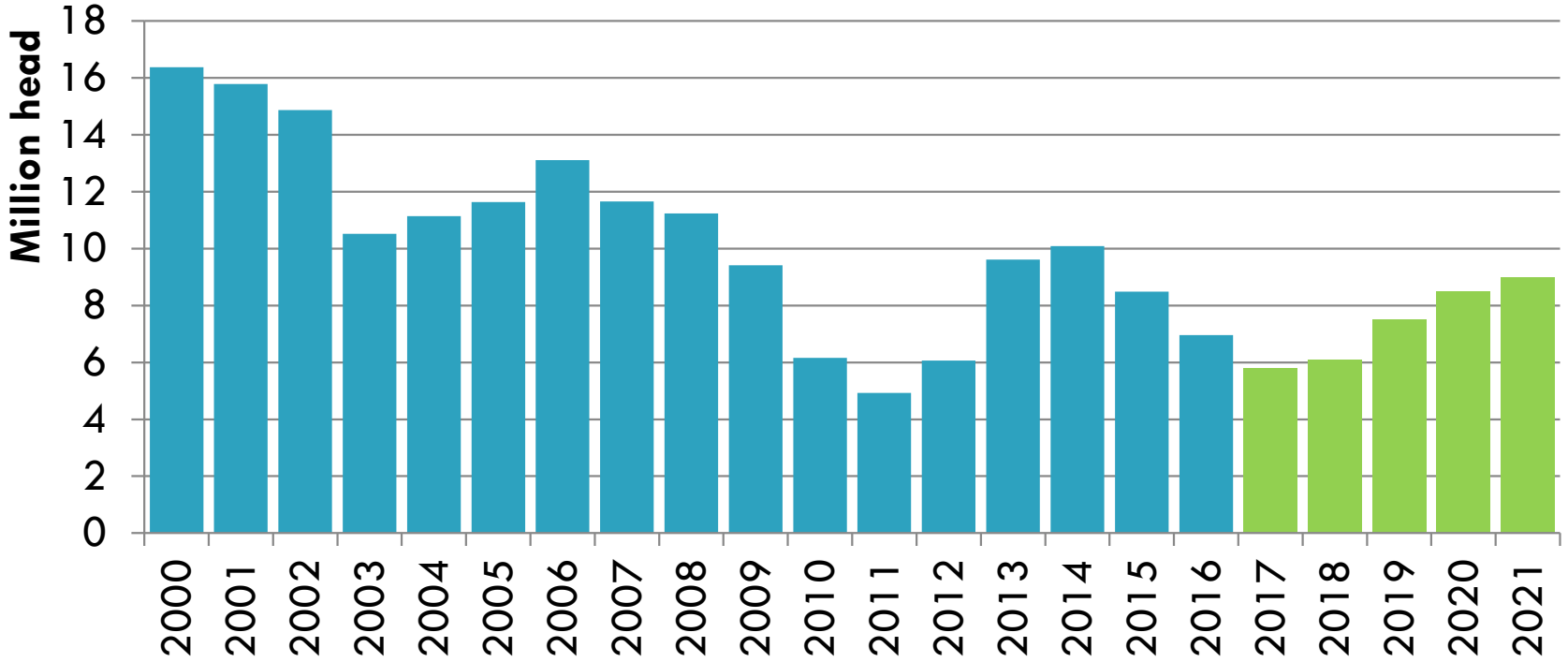
Source: MLA, AWI

21.5 million lambs to slaughter in 2017



Source: ABS, MLA forecasts

Annual sheep slaughter – 5.8 million

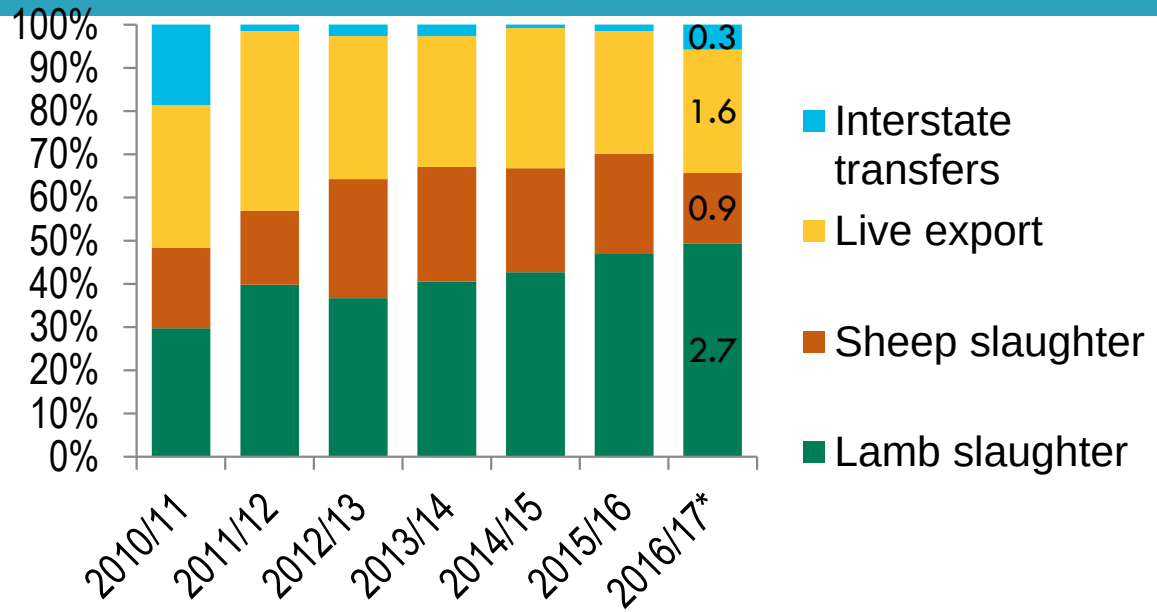


Source: ABS, MLA forecasts

Department of Primary Industries and Regional Development

GOVERNMENT OF WESTERN AUSTRALIA

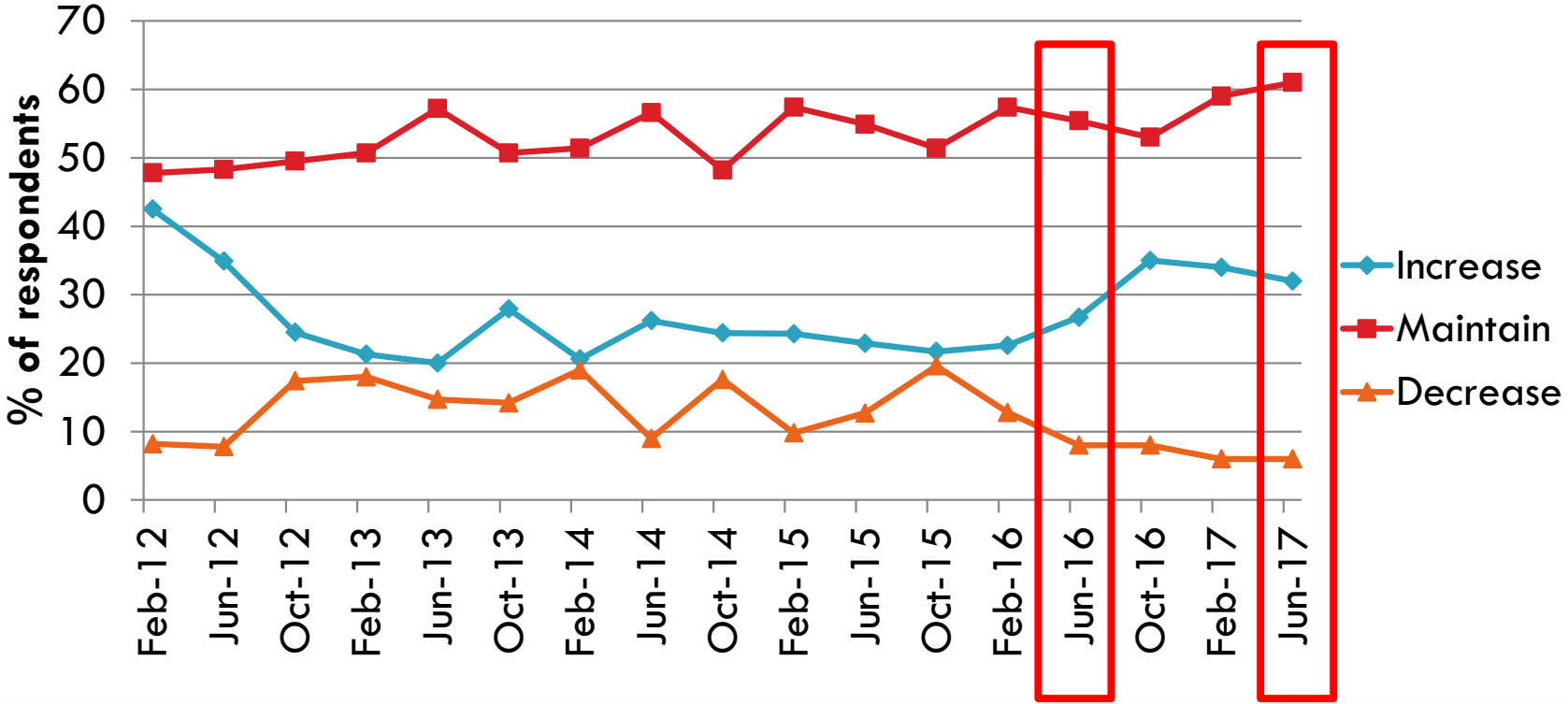
Similar pattern in WA



This work is supported by **Royalties for Regions** funds through the **Sheep Industry Business Innovation** project.

Source: ABS, PIRSA data, DPIRD analysis

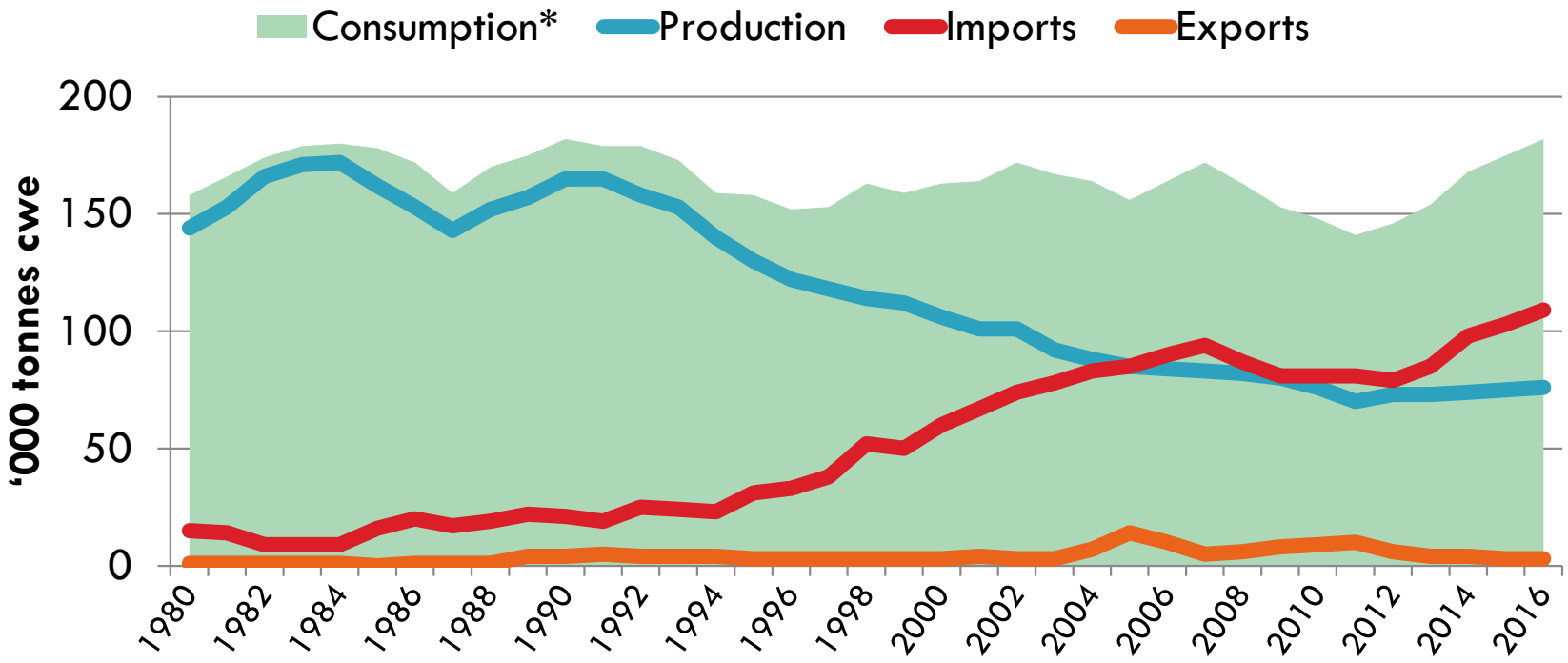
Enticing time to retain ewes



Major Markets

- USA still strong and total export up
- Very valuable chilled lamb market
- Encouraging building of this market in last 4 years

Sheepmeat in the US



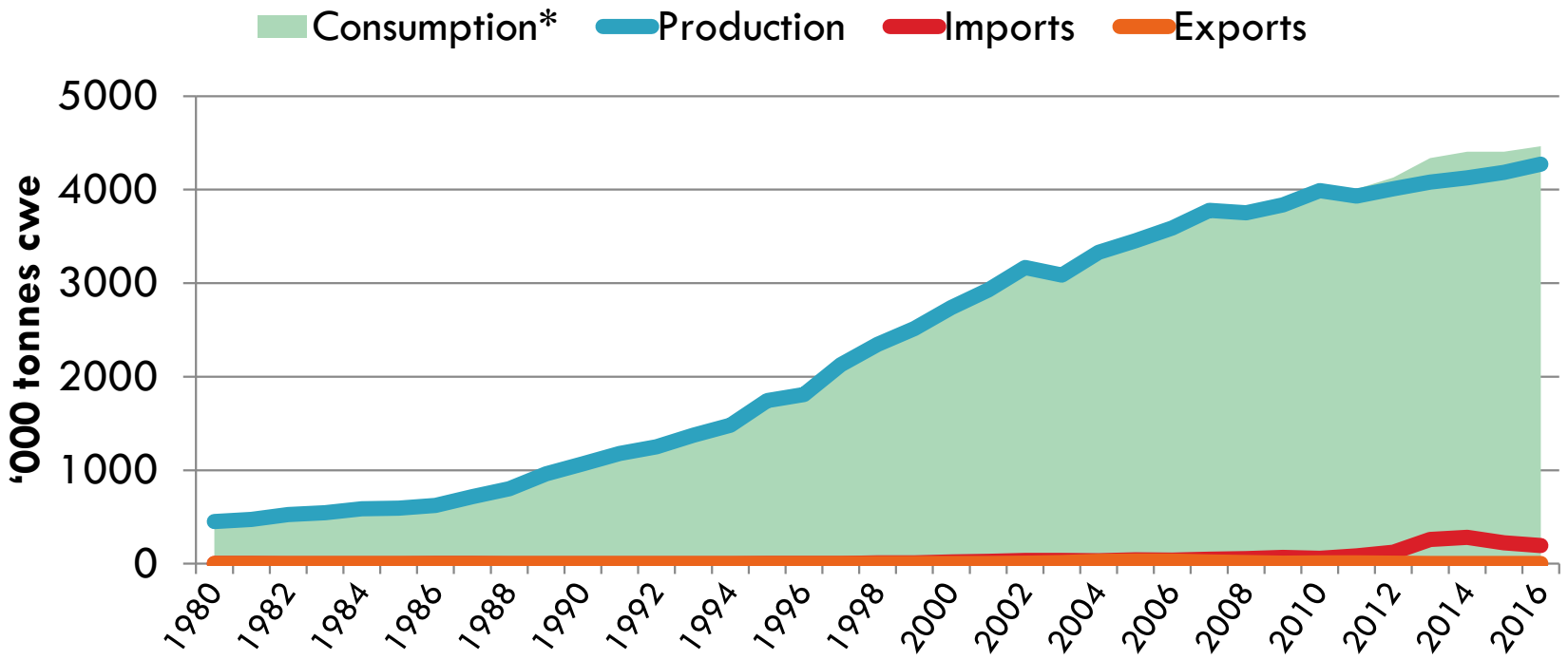
Source: FAO

* Estimated Consumption = (Production + Imports) - Exports

Major Markets

- China has become a significant importer since 2012
- They cannot meet the needs of their market – this trend is forecast not to change
- Same tonnage as USA but less value (frozen, cheaper cuts, mutton)
- Will the value of this market increase ?

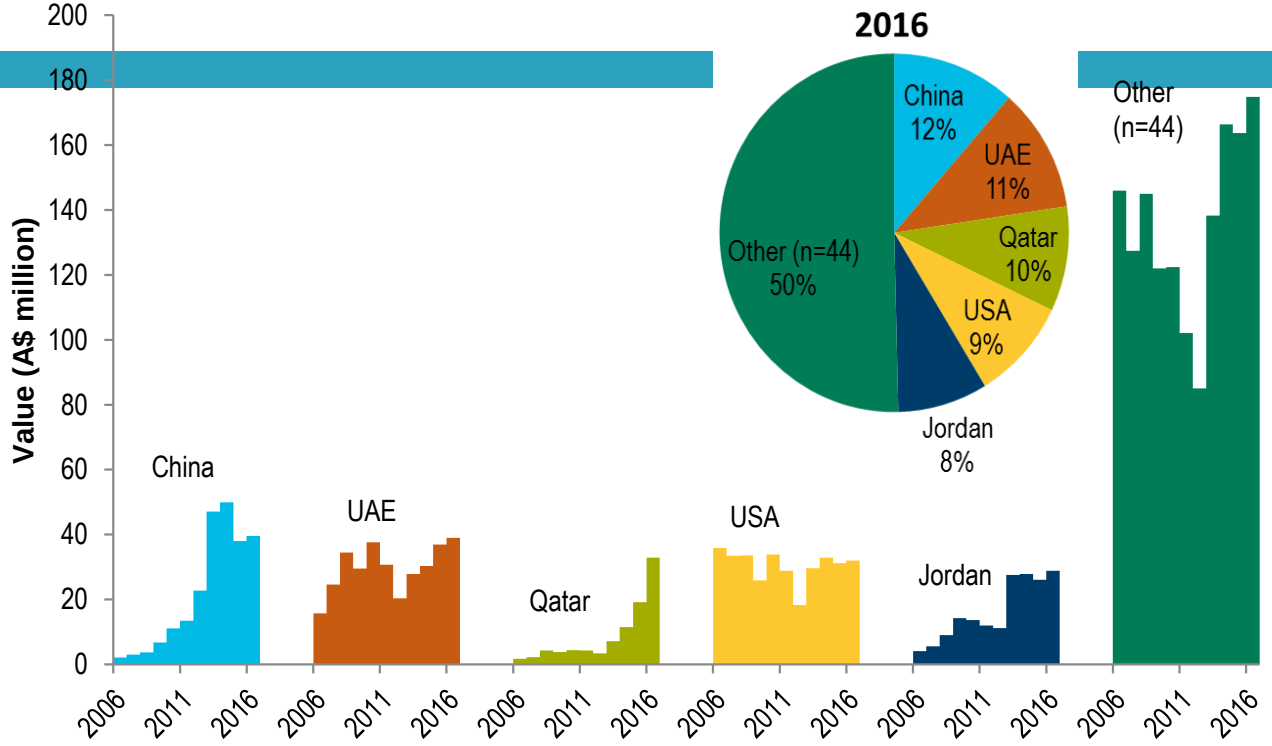
Sheepmeat in China



Source: FAO

* Estimated Consumption = (Production + Imports) - Exports

In WA = Middle east, China and USA are the biggest



Market outlook – note of caution in the short term

- There has been a near on 40% decrease in processing capacity on Eastern sea board
- The timing of lamb turn off is very season dependent
- Seasons in Southern Australia have been tight in many regions
- Given all this, at some point killing space will be at a premium in the eastern states
- MESSAGE: This might have a flow on effect to WA ?????

Lean Meat Yield

LMY is <u>especially</u> important in lamb:

$30/kg (44% fat trim) → $54/kg (36% bone)

$84/kg for lean !!

Value lean meat yield - Lamb example

Score 5

Carcase Wt 23.0 kg

GR 22.0 mm

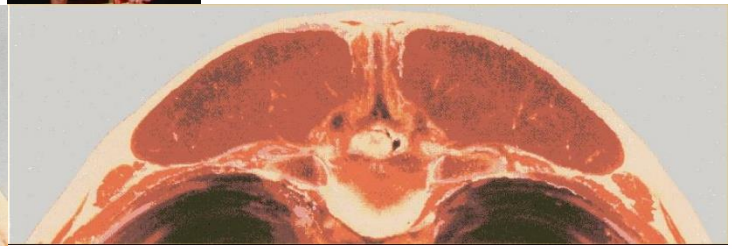
CT lean 55%

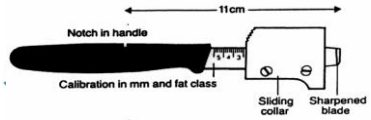
Score 2

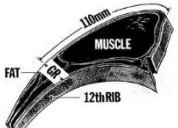
Carcase Wt 23.0 kg

GR 8.0 mm

CT lean 63%







Lean and fat weights

Score 4
Fat: 7.36kg
Lean: 12.65kg

Retail Value: $316

Score 2
Fat: 5.06kg
Lean: 14.49kg

Retail Value: $362

Simplistically – difference is extra $46

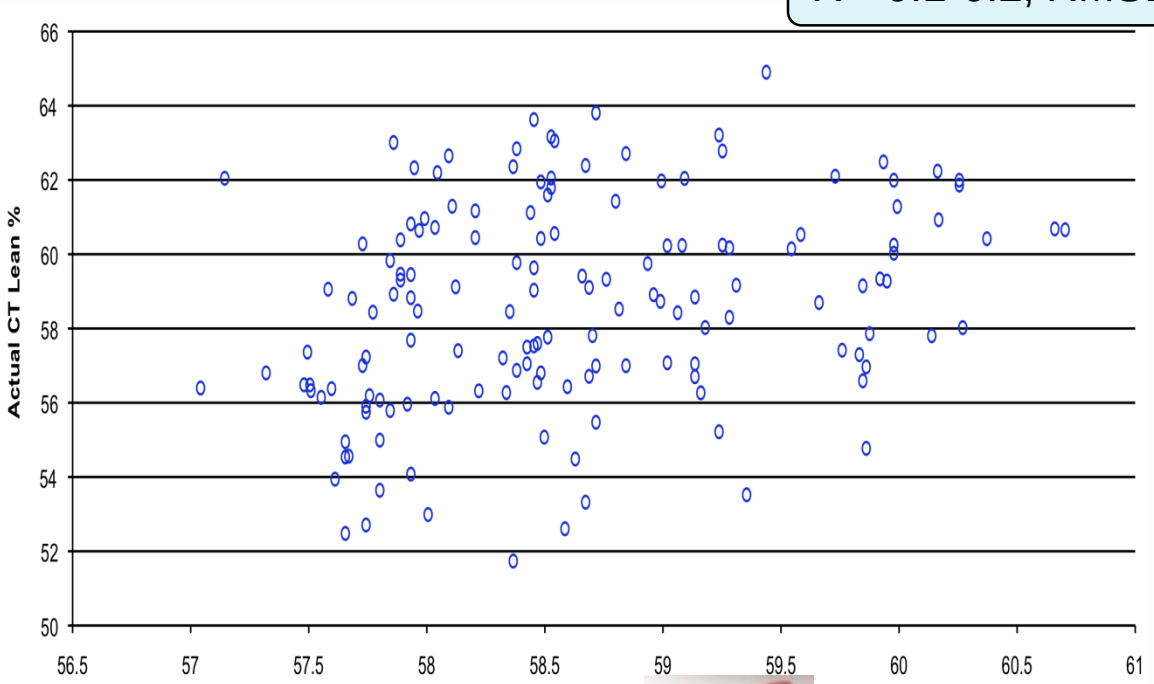
- 8% units of CT lean difference
- = 1.84kg of meat
- = $46 of extra value (lean @ $25/kg)
- This is too simple ! boning costs ….

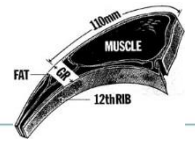
Lean Meat Yield

- Genetic gain
- Efficiency
  - On farm/feedlot – lean or muscle cheaper to grow than fat
  - Processing – too much fat = trim
- Consumers
  - Little fat in retail cabinets these days
  - 80%+ consumers remove fat before or after cooking
  - 'Fatty' still a significant complaint for lamb

Palpated GR and HCW

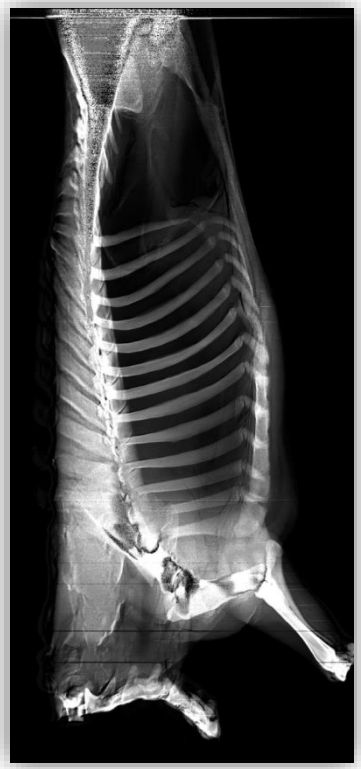
R^2=0.1-0.2; RMSE=3.0



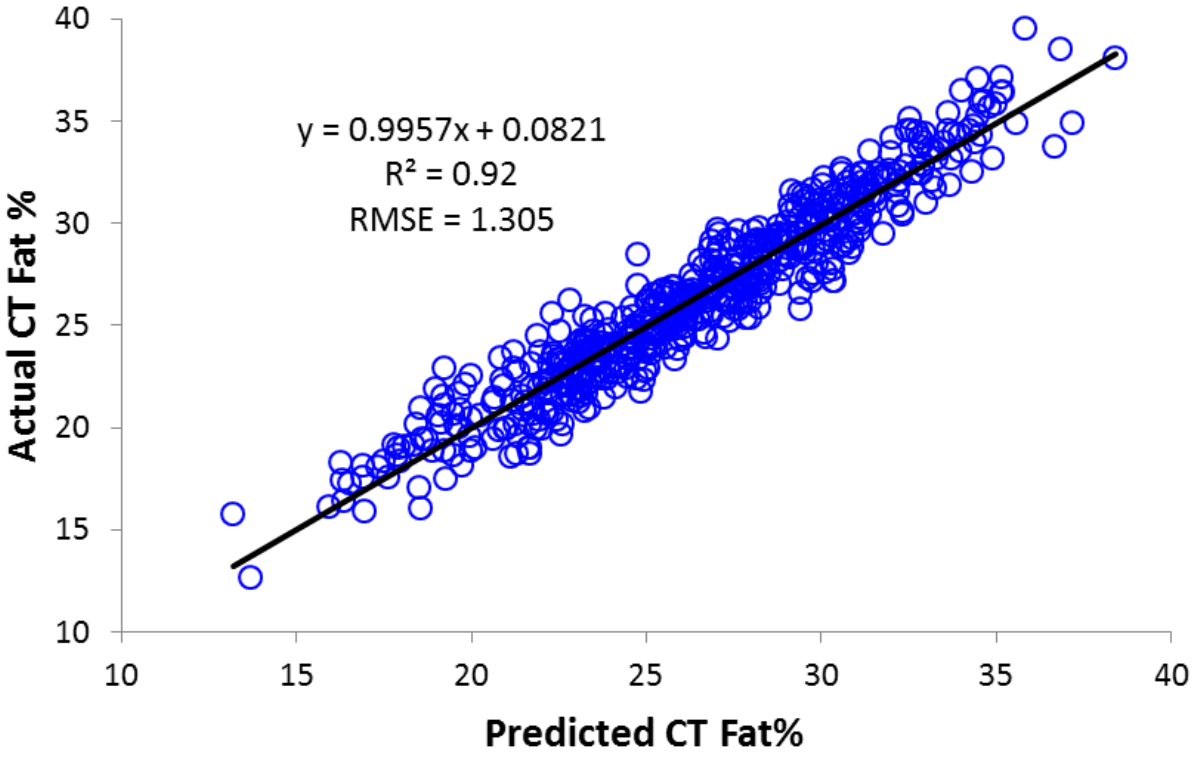


DEXA

- Dual energy x-ray
- Initially to drive robots
- Whole carcase and region yield



DEXA predicting CT Fat%



What market do you produce lambs for?
What carcass spec are you aiming for?

Domestic 45% — **18 – 22 kg, fat 2-3**

- White Tablecloth
- Butcher
- Supermarket

Export 55%

- *Middle East* — **16 – 18 kg, Fat 1-2**
  - Bagger airfreight Lambs
  - Middle East Restaurant
- *American Market* — **18 – 26kg, Fat 2-4**
  - Supermarket
  - White table cloth
- *EU* — **18 – 24kg, Fat 2-3**
  - Supermarket

What market do you produce lambs for?
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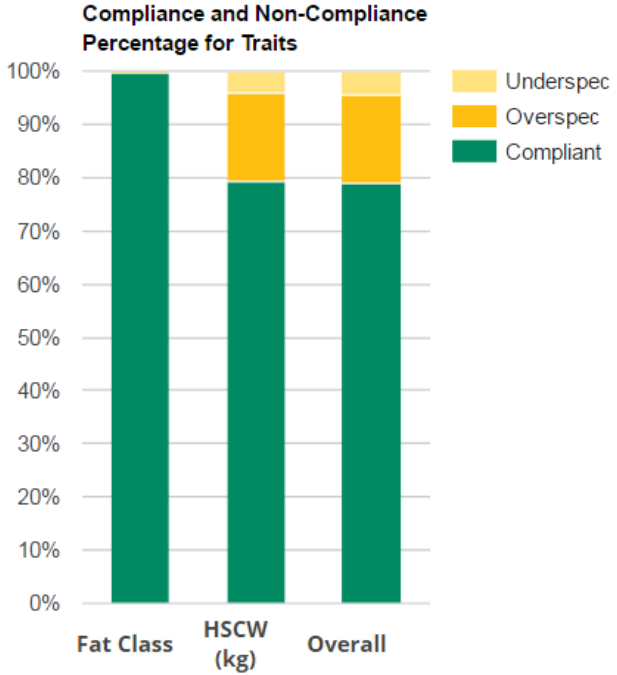
Expor

- *EU* — **18 – 24kg, Fat 2-3**
  - Supermarket

Do you know your market destination or just let the saleyards decide ?

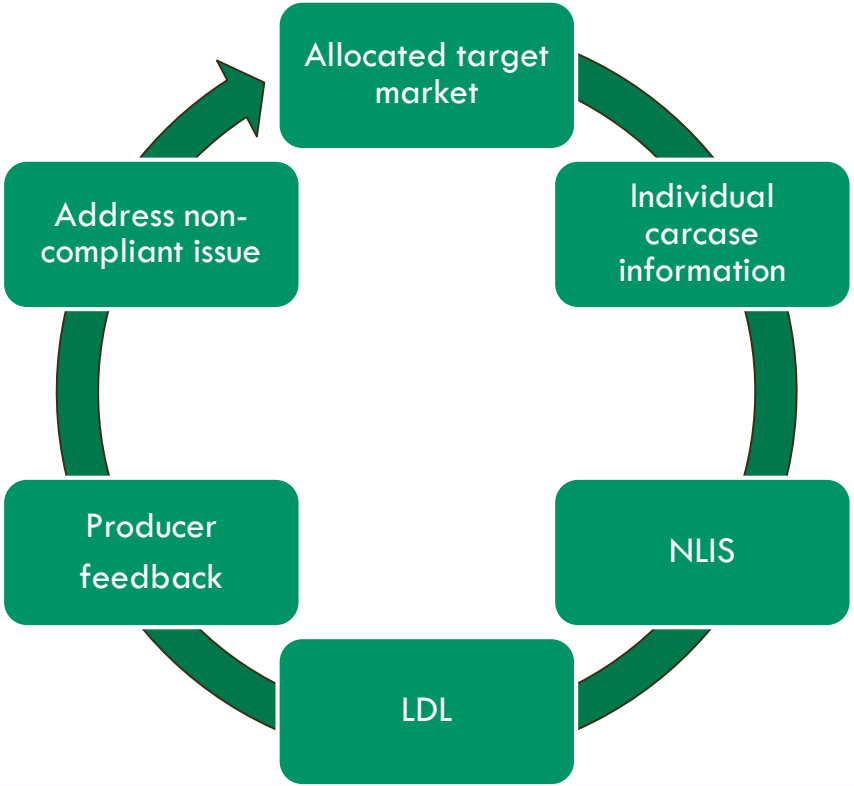
What is Livestock Data Link (LDL)

- Centralised on-line feedback system
- Identifies compliance rates of carcases and animal health issues
- Allows performance benchmarking
- Includes NLIS and MSA information
- Allows complex information to be used for simple decision making



	Fat Class	HSCW (kg)	Overall
Number of head	972	972	972
Number compliant	970	770	768
Percent compliant	99.8 %	79.2 %	79.0 %
Number non-compliant	2	202	204
Percent non-compliant	0.2 %	20.8 %	21.0 %

How does LDL Work?

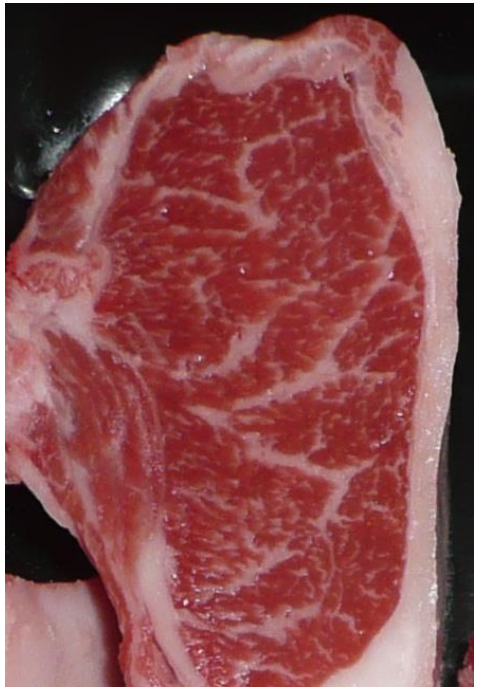


Eating quality

- Key to consumers
- Unfavourable association with Lean Meat Yield
- Important for willingness to pay – especially long term
- Across country comparisons
- Vision for a new Mark II MSA

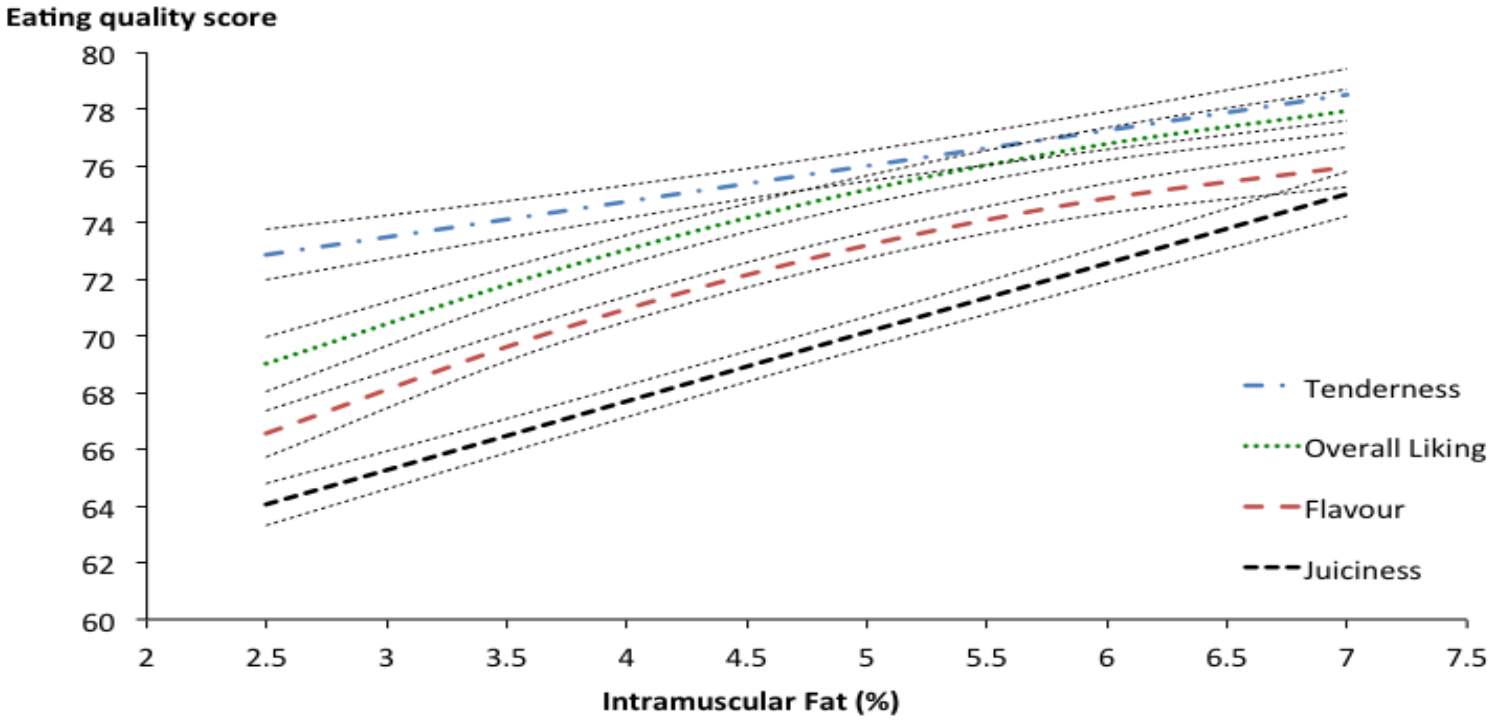
Key trait is intramuscular fat

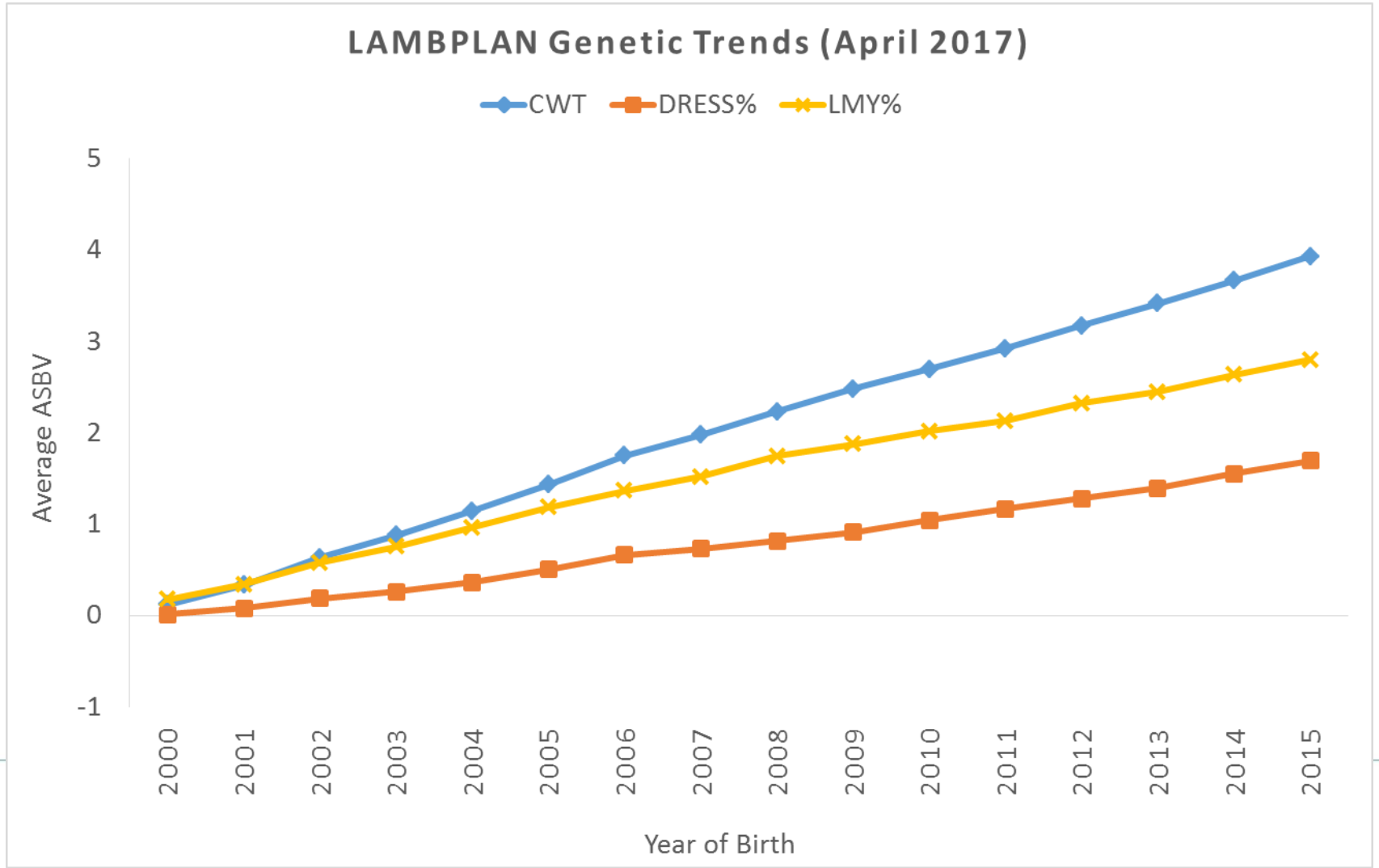
- Juiciness, flavour, tenderness
- 4.2 ± 0.04% (Xbred mean)
- Ideal 5% or more
- Mod/high heritability (0.47)
- Called marbling in beef

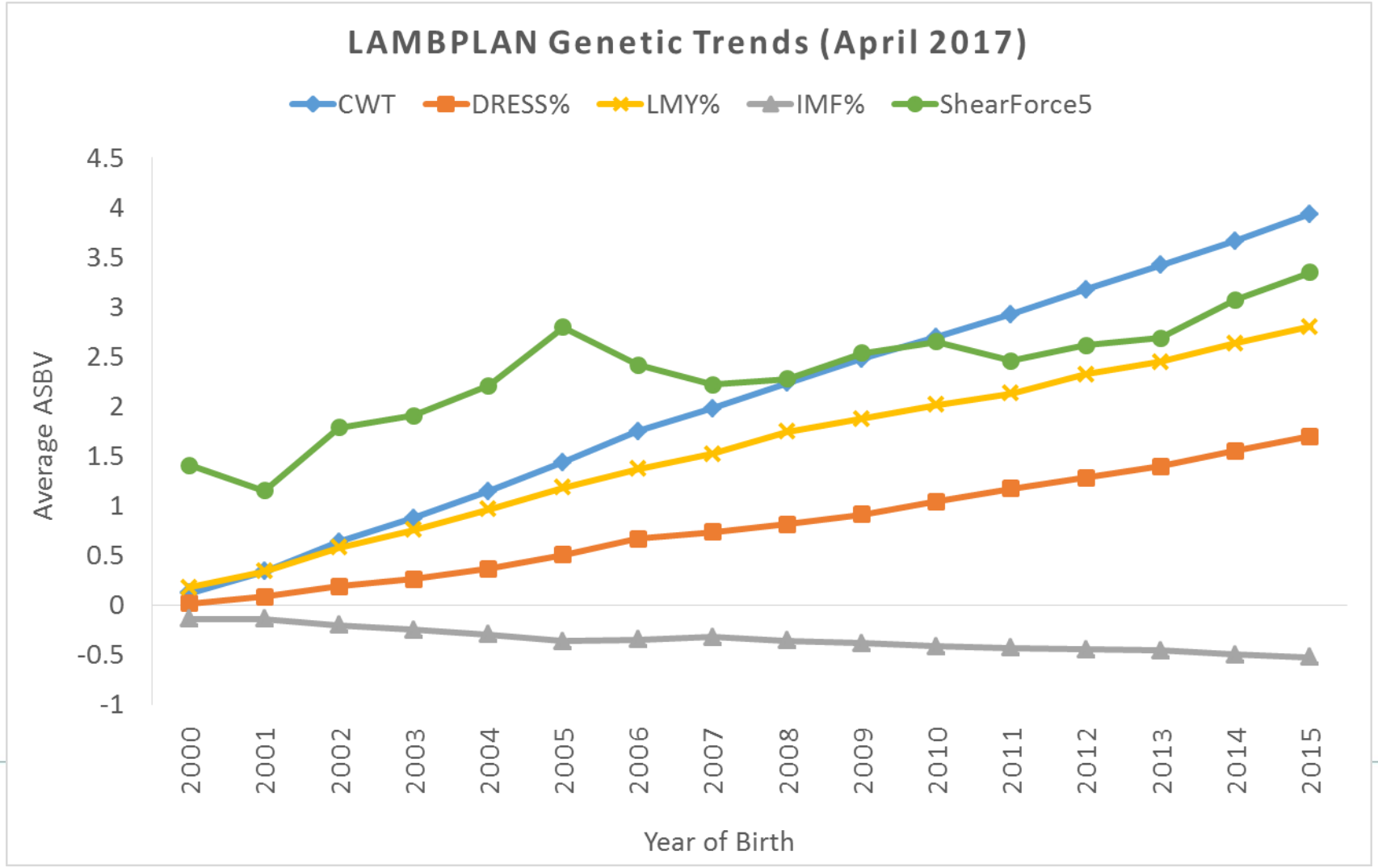


IMF vs MSA consumer score

IMF nails juicy and flavour




LAMBPLAN Genetic Trends (April 2017)
CWT
DRESS%
LMY%
Average ASBV
5
4
3
2
1
0
-1
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Year of Birth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CWT
DRESS%
LMY%
IMF%
ShearForce5
Average ASBV
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Year of Birth

New Yield and Eating Quality ASBVs

		LAMBPLAN Average	Top 10%
Quality			
IMF – Intra-muscular Fat		-0.5	-0.1
SF5 – Shear Force		2.7	0.2
Quantity			
LMY – Lean Meat Yield		2.8	4.1
DP% - Dressing Percentage		1.7	2.4

Trait	IMF %	SF5 kg	LMY %	DP% %
ASBV	-0.1	-0.5	2.4	2.0
Acc	50	45	62	52

Terminal Sire Indexes

- Two new eating quality indexes

Trait	Carcase +	EQ	Lamb 2020	LEQ
bwt	0.15	0.06	0.07	0.07
wwt	2.85	1.55	1.85	1.28
pwt	4.4	3.15	2.8	2.6
pemd	1.46	1.07	1.44	1.17
pfat	0.14	0.04	0.59	0.33
pfec	0.06	0.16	-52.24	-35.83
cemd	1.5	1.15	1.42	1.25
ccfat	-0.5	-0.4	0.07	-0.12
dress	1.31	1.09	1.1	1.03
lmy	1.66	0.91	1.14	0.87
sf5	0.77	-2.41	0.62	-2.06
imf	-0.27	0.09	-0.14	0.1
tlike	-1.21	1.42	-1.12	1.27

Willingness to pay x eating quality

O'Reilly, Pannier et al 2016

	Fail	Pass (3*)	Credit (4*)	Distinction (5*)
USA	46%	100%	150%	209%
China	57%	100%	147%	212%
AUS	53%	100%	141%	189%

Grilled lamb, hot pot in progress right now

MSA model

Use carcase variables to predict Sheepmeat Eating Quality score

- Hot Carcase Weight
- Lean Meat Yield
  - Direct = DEXA
  - Indirect = GR x eye muscle depth
- Intramuscular Fat

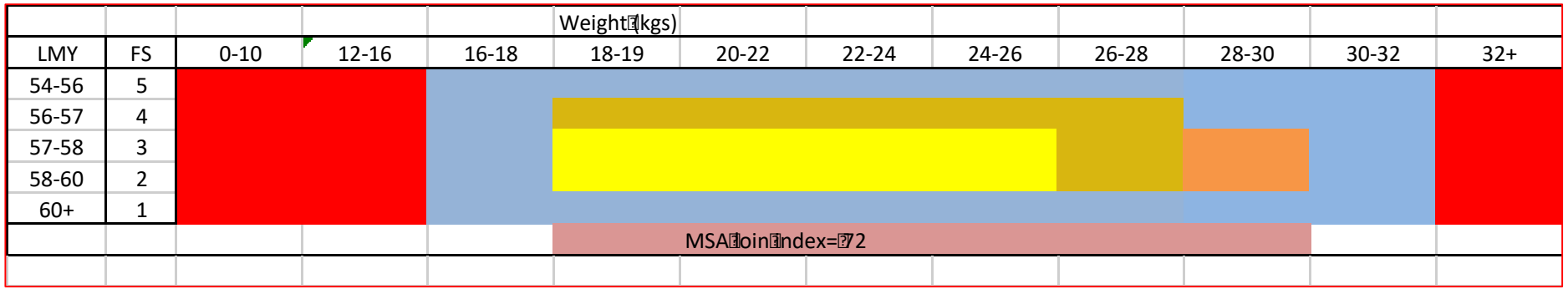
- All are significant predictors

So grids will evolve based on lean meat yield and eating quality

- They will be more complex
- They will represent objective measures of the carcase
- They will include
  - HCW
  - Lean Meat Yield (& fat score)
  - Eating quality index

What might future grids look like?

Will include weight.
Will include LMY (broken up into forequarter middle and hindquarter)
Will include EQ index
Possibly compliance bonus



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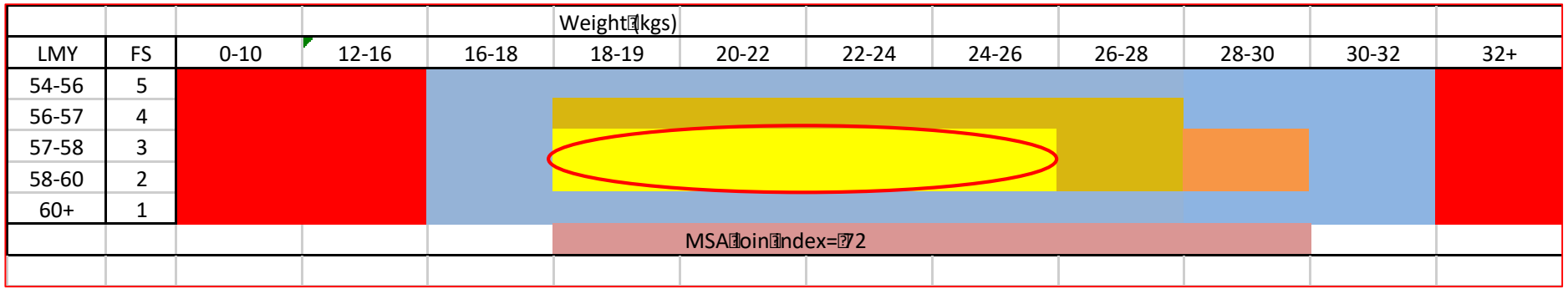

The market sweet spot
(18 – 26kg FS 2,3)

What might future grids look like?

Will include weight.
Will include LMY (broken up into forequarter middle and hindquarter)
Will include EQ index
Possibly compliance bonus

		Weight (kgs)										
LMY	FS	0-10	12-16	16-18	18-19	20-22	22-24	24-26	26-28	28-30	30-32	32+
54-56	5											
56-57	4											
57-58	3											
58-60	2											
60+	1											
					MSA loin index=72							

4* or above loin (0% failure rate !)

True value of the carcase

Carcase value ($)

=

Wt retail cuts (kg)

X

Value of the cuts ($/kg)

Murdoch UNIVERSITY

Key Points

- ❑ Industry Projections
  - Producers retaining more ewes due to high prices
- ❑ Major Markets
  - Markets generally positive, reduction in processing capacity possible risk
- ❑ Lean Meat Yield
  - Important to producers, processors and consumers. Be aware of impact on EQ.
- ❑ Livestock Data Link
  - Delivering better feedback, enables more informed decisions
- ❑ Eating quality
  - Key to consumers. Can now include in ram buying decisions.
- ❑ Future grids – based on objective measurement of the carcase
  - Likely to start including LMY and EQ