

AN INITIATIVE OF

*Making More From Sheep*



# Lamb – Meating Consumer Expectations

## Hamish Chandler – Genetics Program Manager MLA



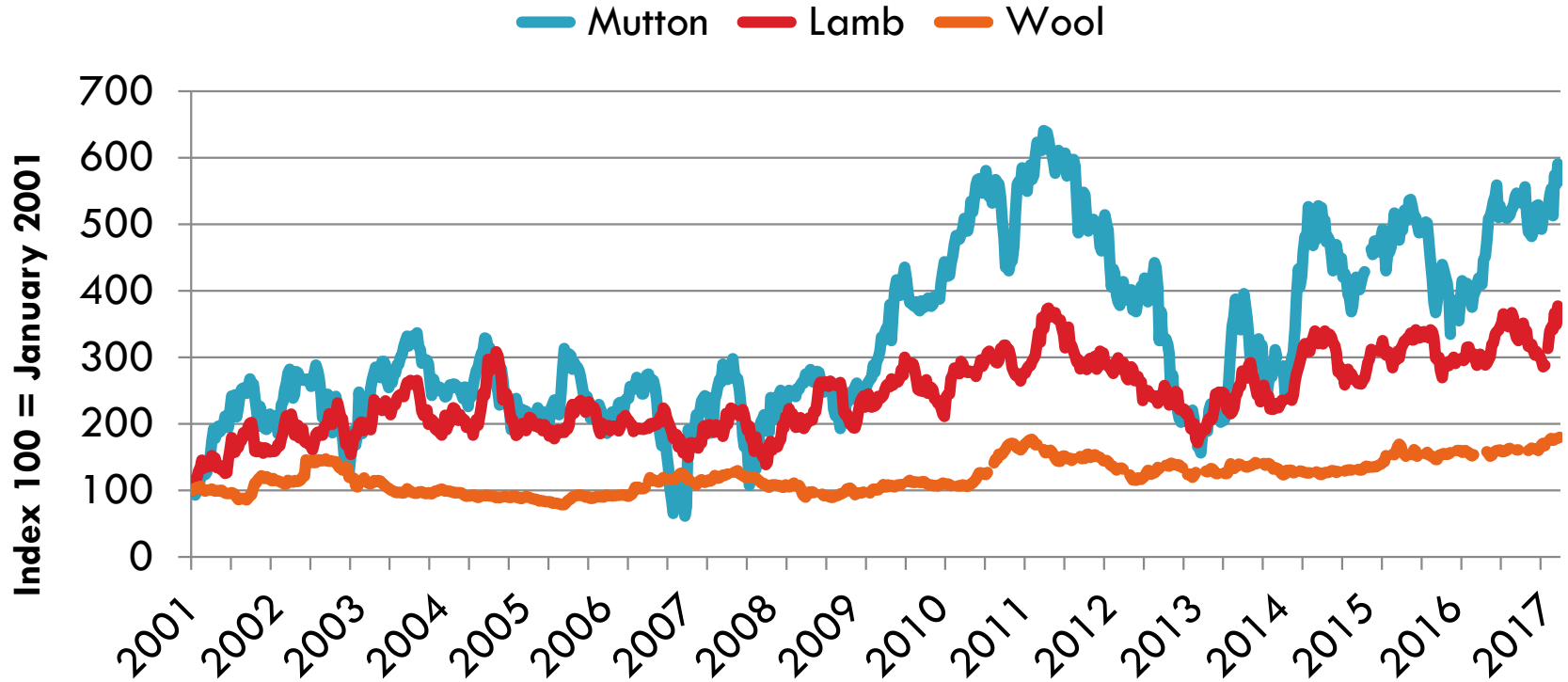
EVENT SUPPORTERS:



# Key Points

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

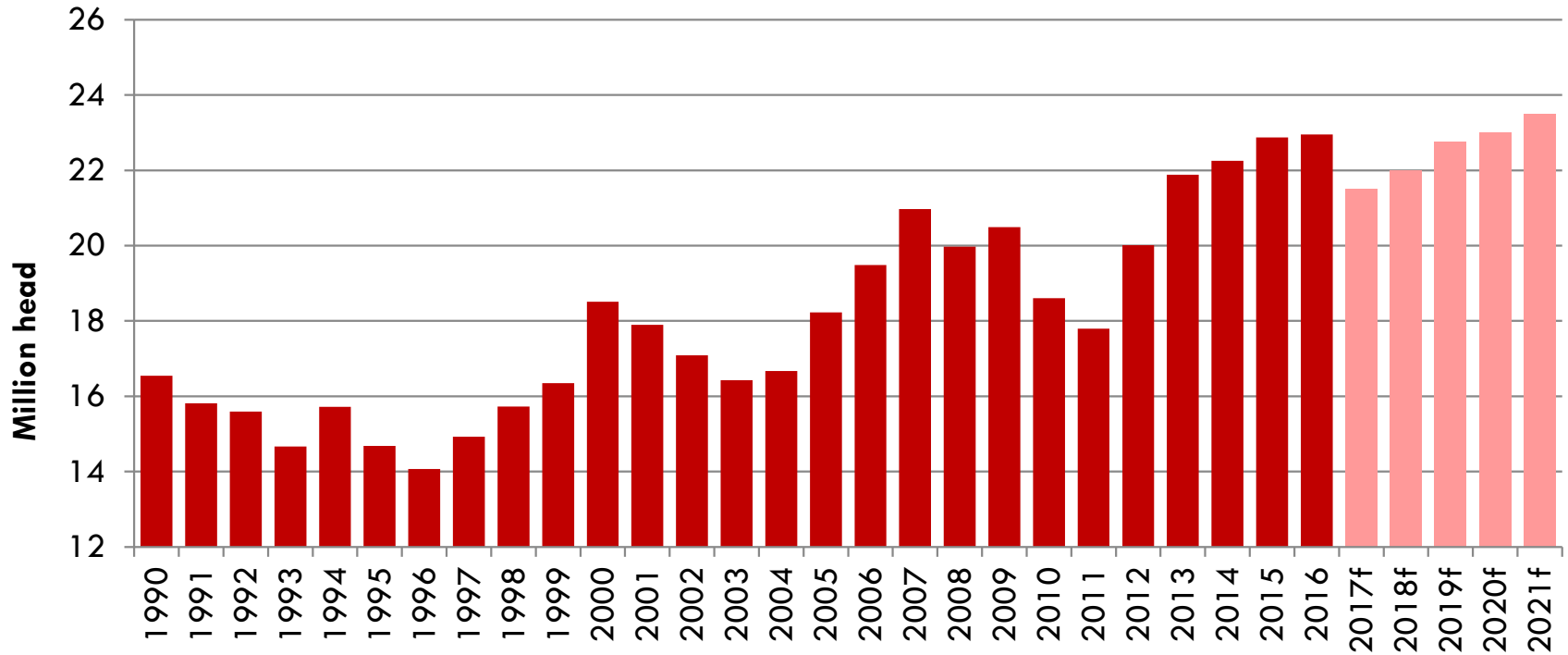
# Australian sheep and wool markets



Source: MLA, AWI

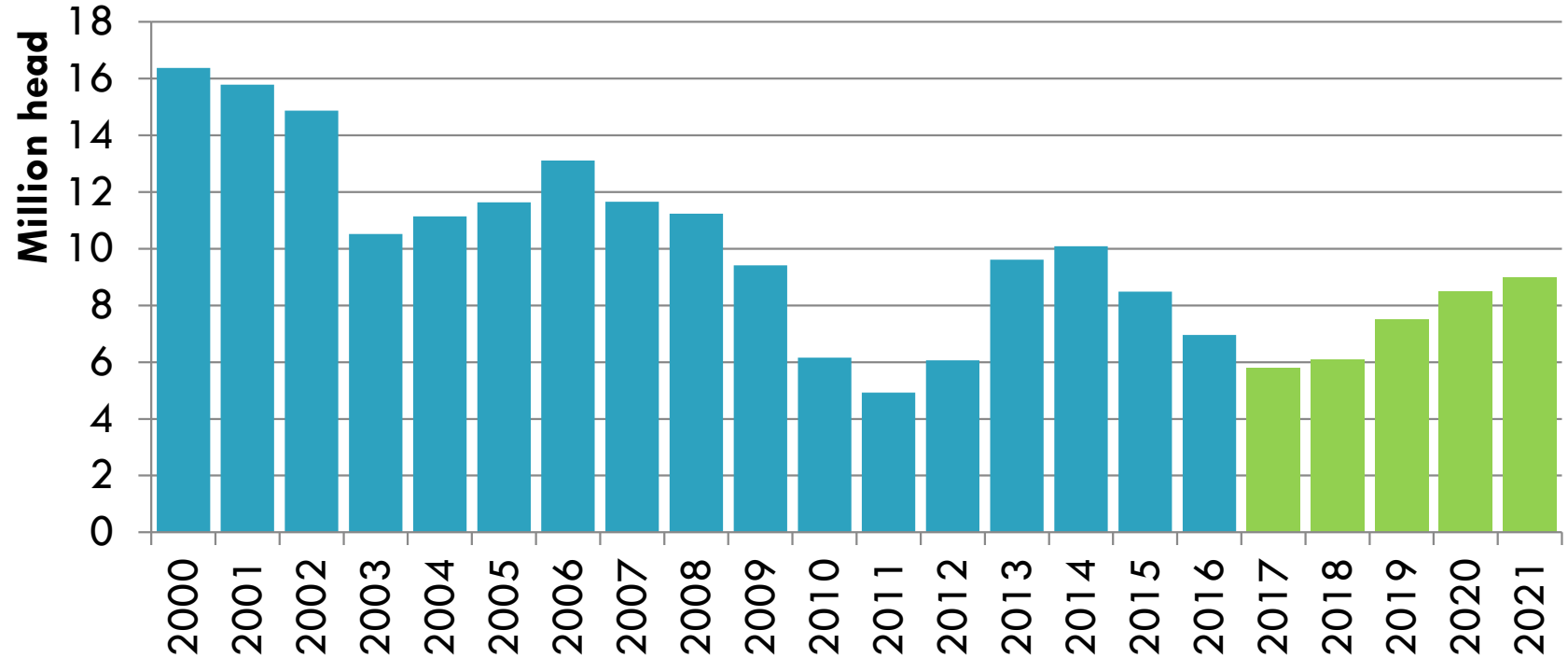
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# 21.5 million lambs to slaughter in 2017



Source: ABS, MLA forecasts

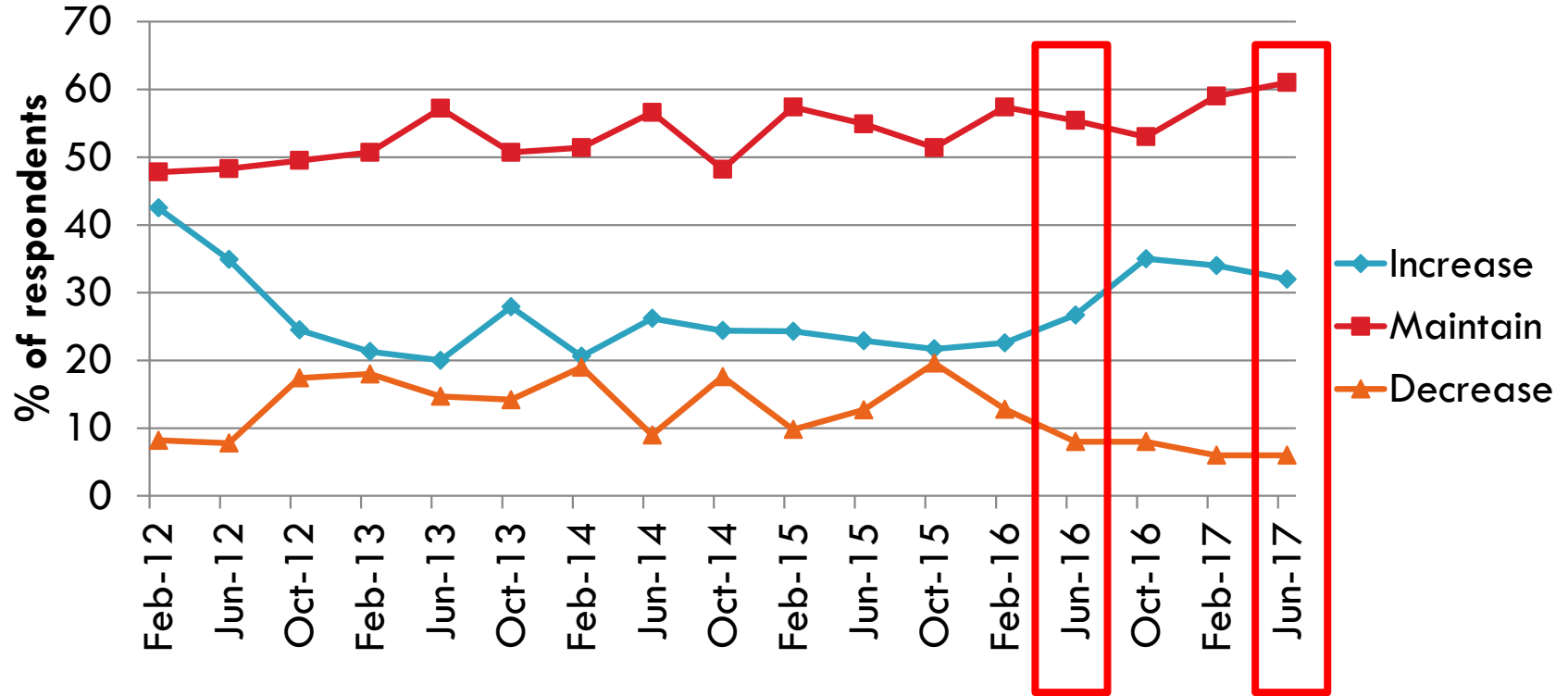
# Annual sheep slaughter – 5.8 million



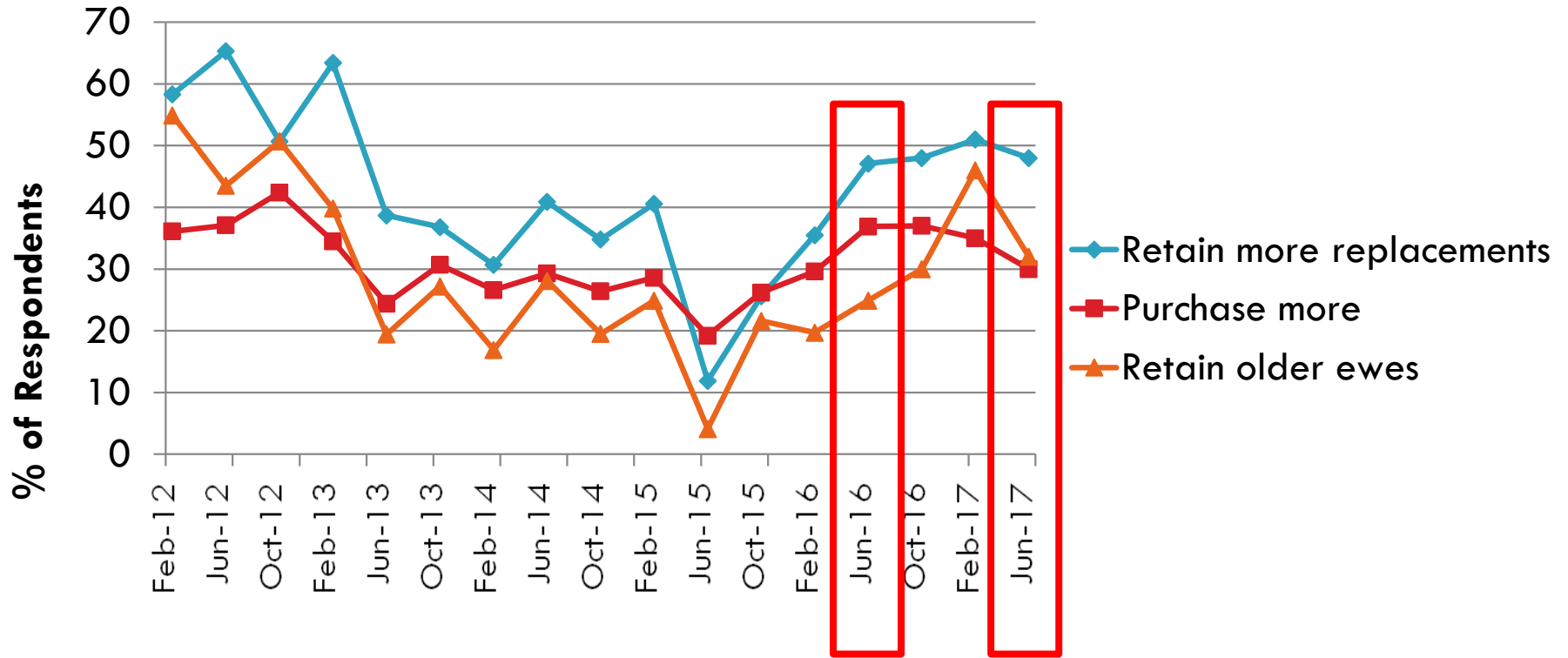
Source: ABS, MLA forecasts



# Enticing time to retain ewes



# How they intend to increase?

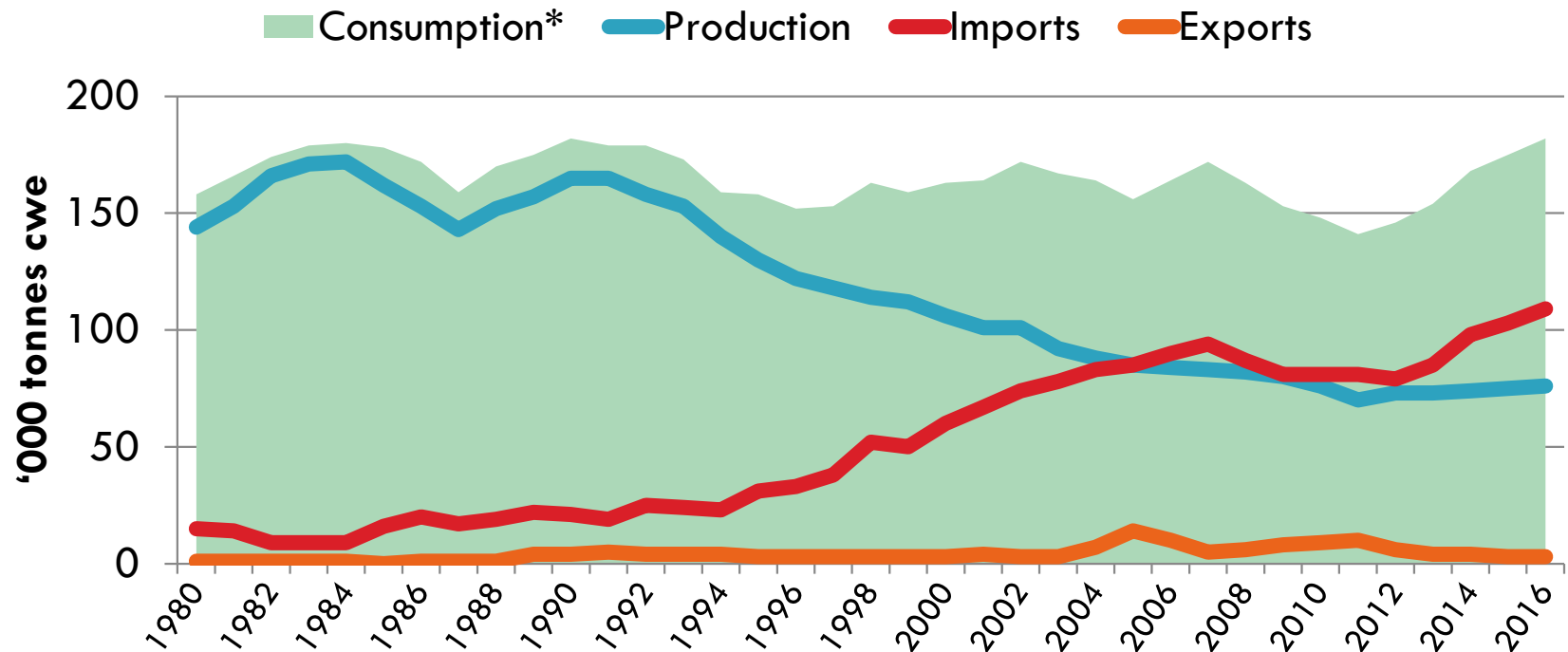


# Major Markets

- ❑ 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

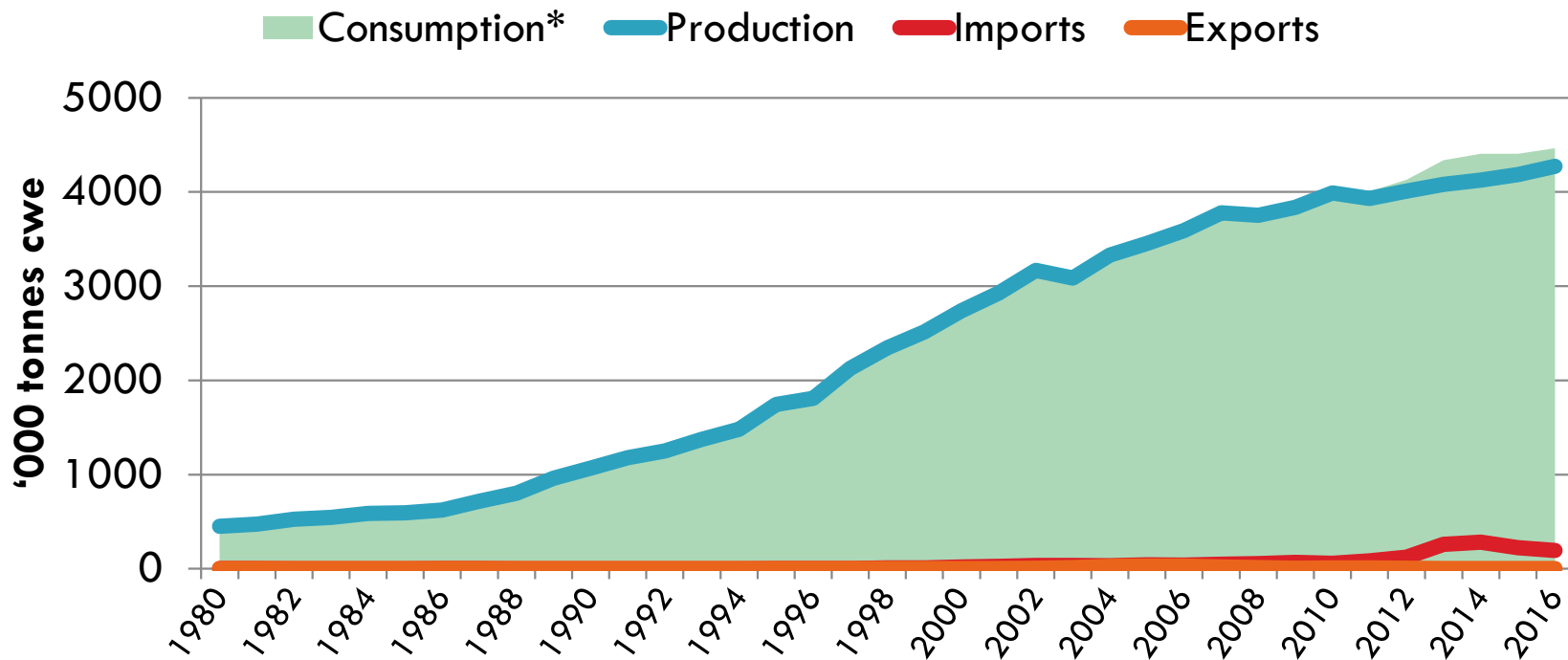
\* Estimated Consumption = (Production + Imports) - Exports

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# 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

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## Market outlook – note of caution in the short term

- ❑ There has been a near on 40% decrease in processing capacity on Eastern seaboard
- ❑ 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
- ❑ MESSAGE: Engage/talk with your processor/markets

# 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

LMY is especially important in lamb:



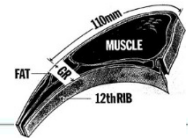
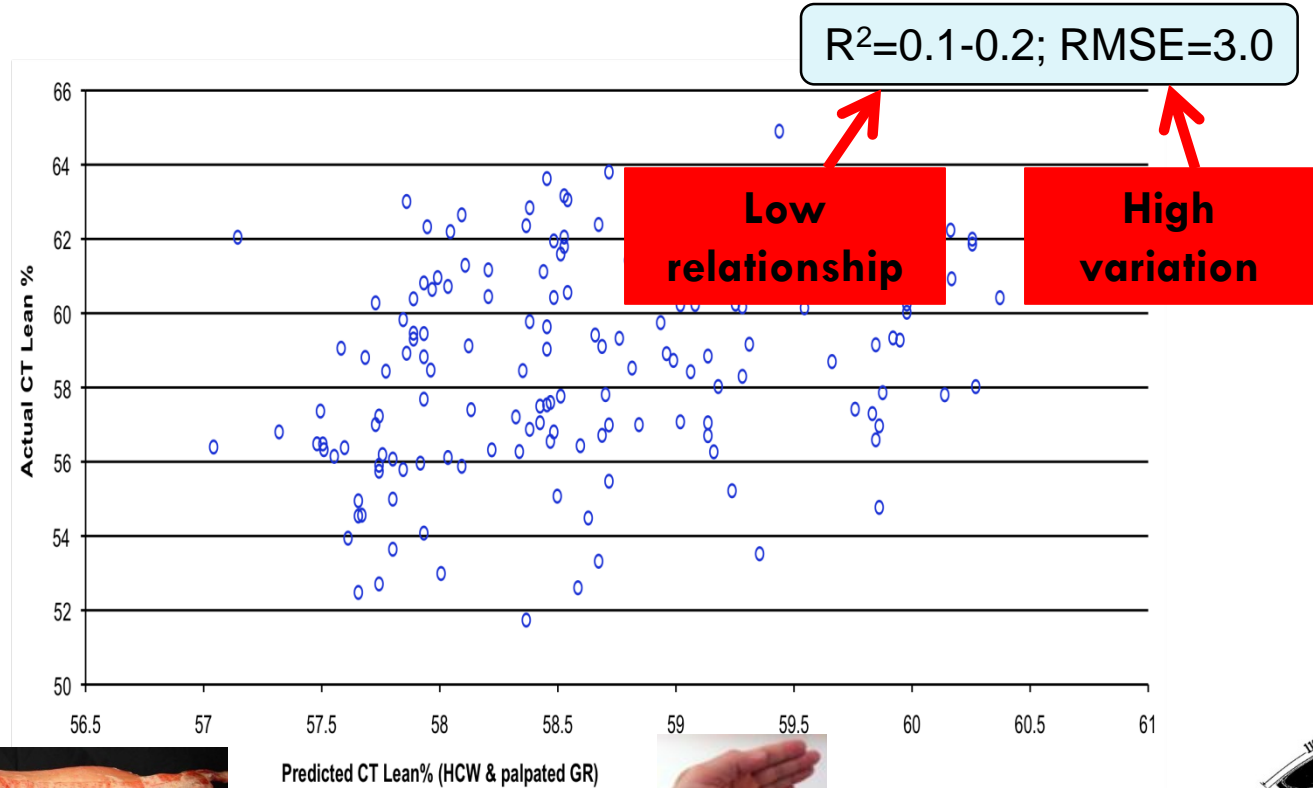
\$30/kg (44% fat trim)



\$54/kg (36% bone)

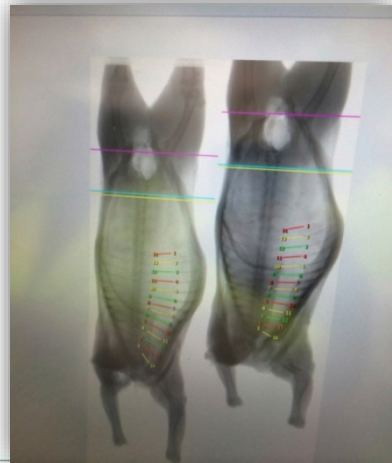
\$84/kg for lean !!

# Palpated GR and HCW



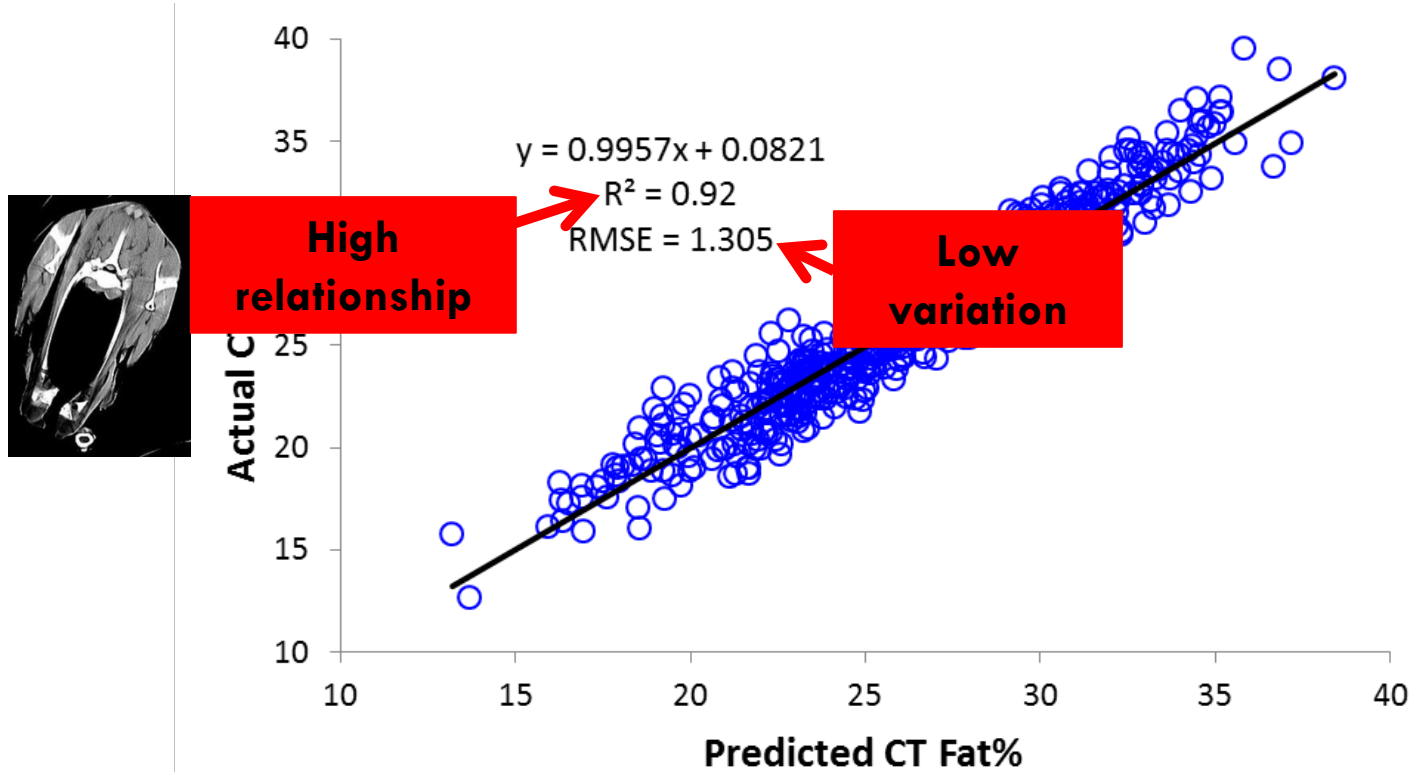
# SEXA, DEXA & MEXA

- ❑ Single, Dual & Multi energy x-ray
- ❑ Initially to drive robots
- ❑ Whole carcass and region yield
- ❑ Potential to measure bone density





# DEXA predicting CT Fat%



# Value lean meat yield - Lamb example



**Score 5**

Carcase Wt 23.0 kg

GR 22.0 mm

CT lean 55%

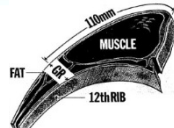
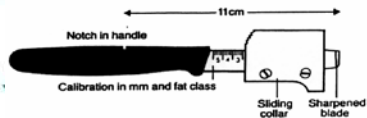
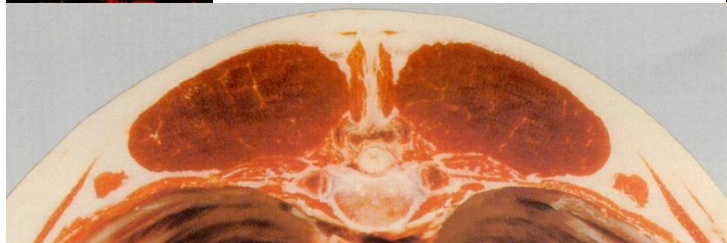


**Score 2**

Carcase Wt 23.0 kg

GR 8.0 mm

CT lean 63%



## 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 ....

# 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?

What carcass spec are you aiming for?

Domestic 45%

- White Table
- Butcher
- Super

22 kg, fat 2-3

Export

- M
- J
- EU

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

# Snap shot of compliance to 18-26kg F234

## Cobram: FAM 18-26kg F234

Number of Compliant Animals					
Compliance%	HSCW&Fat	HSCW	Fat	LMY%	
3101	3101	3234	4327	2952	
Compliance	No.head	HSCW&Fat	HSCW	Fat	LMY%
58.87	5267	58.87	61.39	82.15	56.04



# Snap shot of compliance to 18-26kg F234

<b>Compliance %</b>	<b>HSCW&amp;Fat %</b>	<b>HSCW %</b>	<b>Fat %</b>	<b>Av. HSCW</b>	<b>Av. Fat Score</b>
97.6	97.6	99.2	97.6	21.7	3
94.4	94.4	96.5	97.6	22.1	3
93.8	93.8	93.8	100	22.5	3
91.4	91.4	91.6	99.5	23	3
84.8	84.8	88.6	96.2	23.4	3
70.3	70.3	78.4	86.9	24.7	4
67.5	67.5	68.5	96.1	23.1	3
62.9	62.9	65.4	92.5	25.3	4
37.6	37.6	40.8	69.5	26.6	4
29.2	29.2	30.9	86	27.1	4
19.9	19.9	21	63.1	27.8	4
10.1	10.1	13.3	50.4	28.7	5
5.8	5.8	10.1	32.6	28.7	5



# Snap shot of compliance to 18-26kg F234

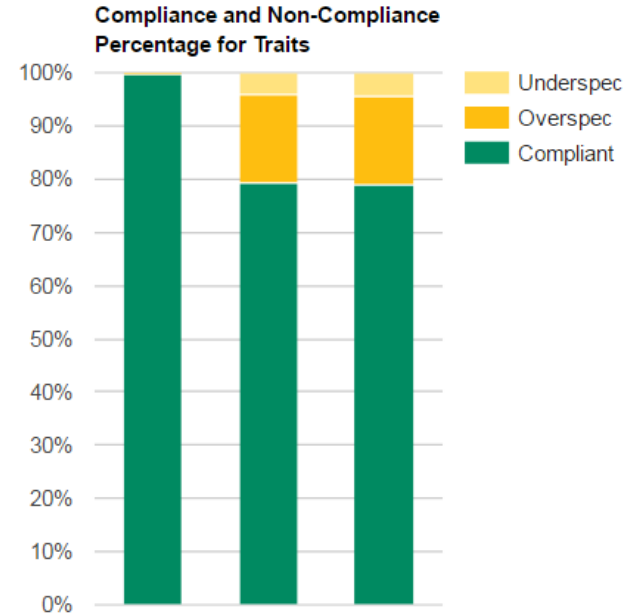
Compliance %	HSCW&Fat %	HSCW %	Fat %	Av. HSCW	Av. Fat Score
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94.4	94.4	96.5	97.6	22.1	3
93.8	93.8	93.8	100	22.5	3
91.4	91.4	91.6	99.5	23	3
84.8	84.8	88.6	96.2	23.4	3
70.3	70.3	78.4	86.9	24.7	4
67.5	67.5	68.5	96.1	23.1	3
62.9	62.9	65.4	92.5	25.3	4
37.6	37.6	40.8	69.5	26.6	4
29.2	29.2	30.9	86	27.1	4
19.9	19.9	21	63.1	27.8	4
10.1	10.1	13.3	50.4	28.7	5
5.8	5.8	10.1	32.6	28.7	5





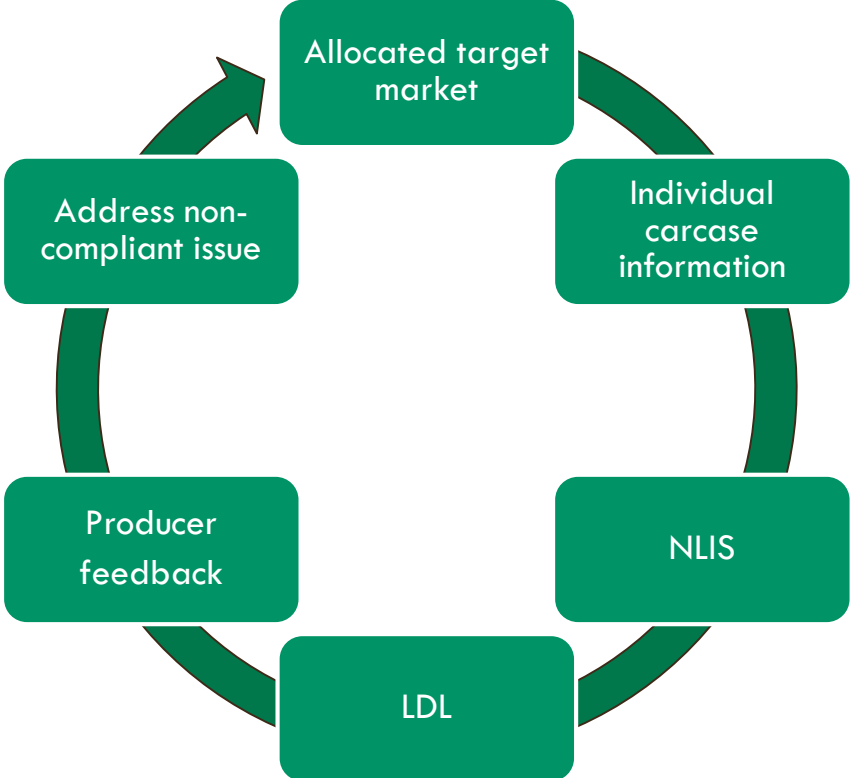
# What is Livestock Data Link (LDL)

- ❑ Centralised on-line feedback system
- ❑ Identifies compliance rates of carcasses 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

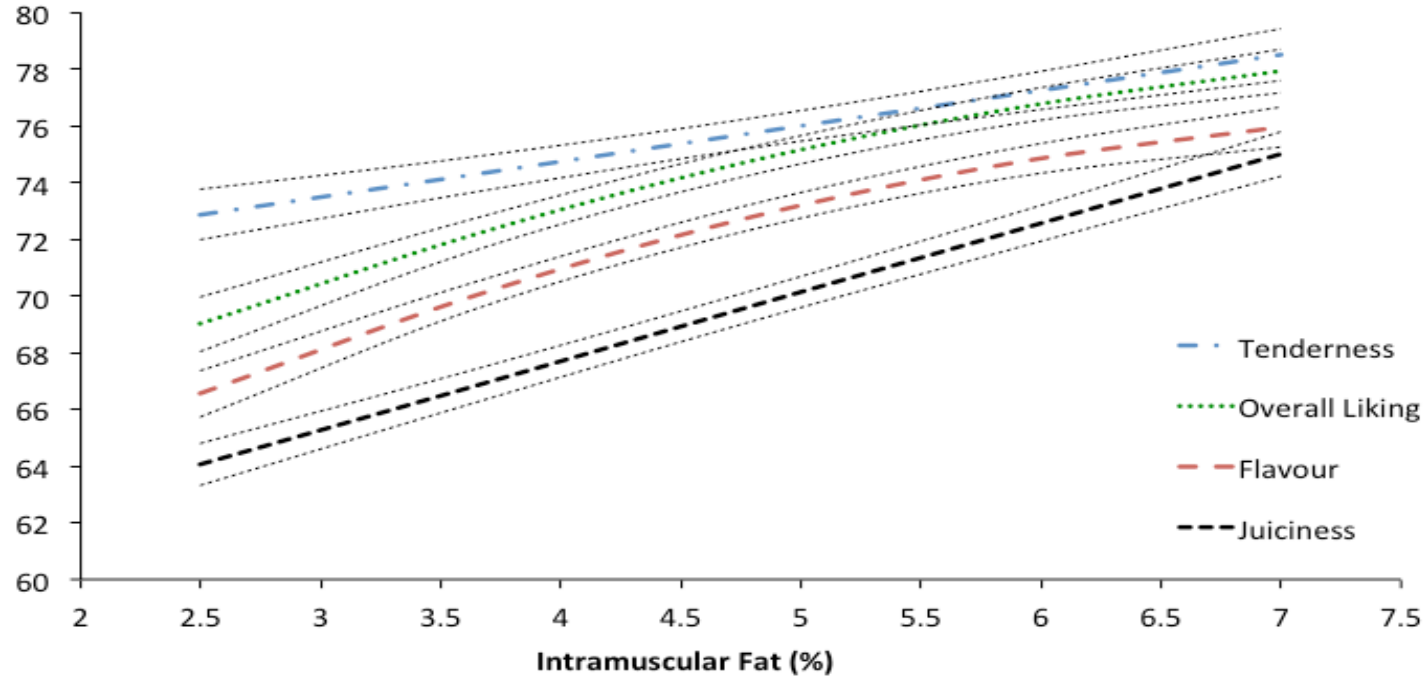
- ❑ Juiciness, flavour, tenderness
- ❑  $4.2 \pm 0.04\%$  (Xbred mean)
- ❑ Ideal 5% or more
- ❑ Mod/high heritability (0.47)
- ❑ Called marbling in beef



# IMF vs MSA consumer score

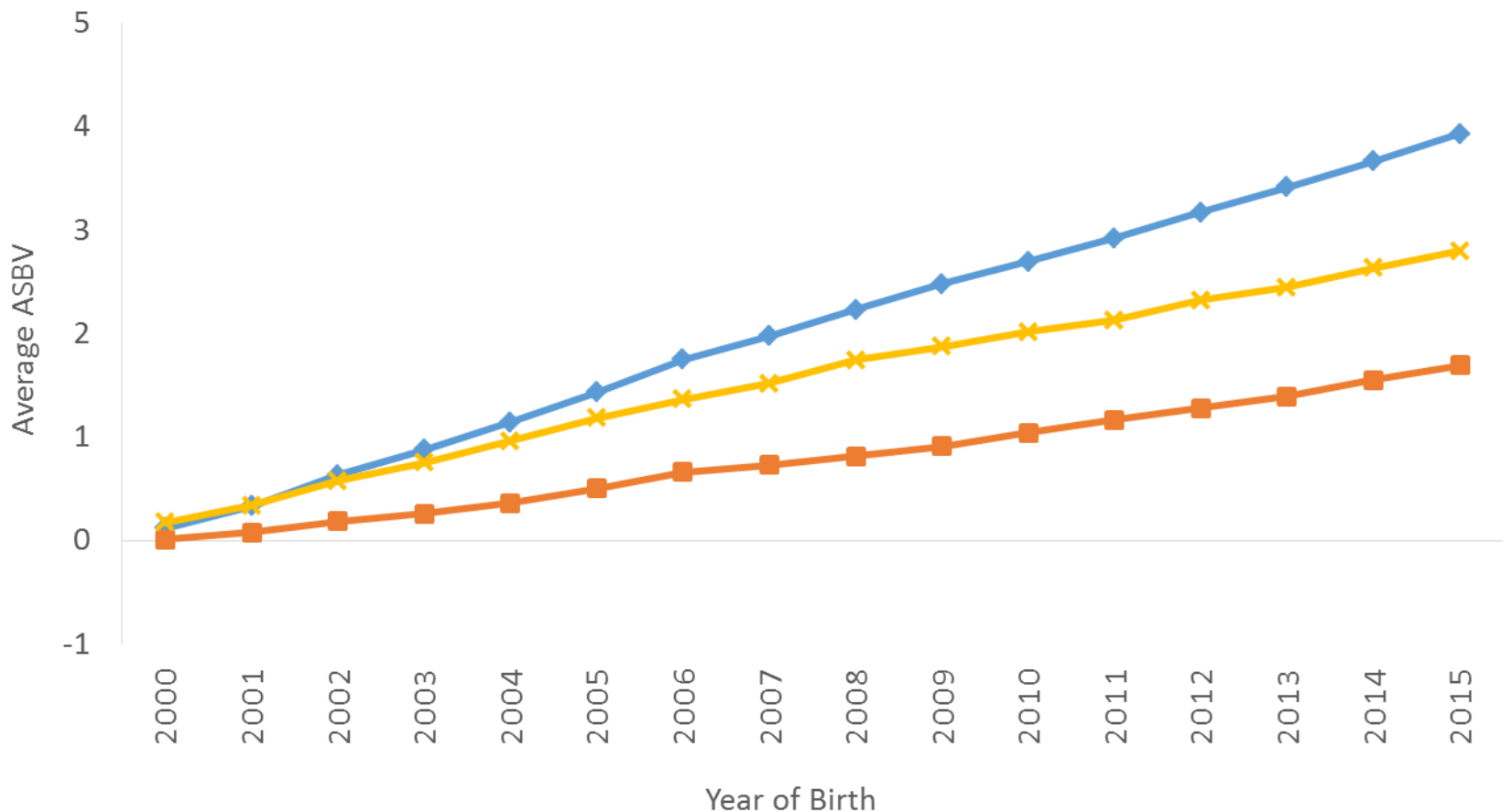
IMF nails juicy and flavour

Eating quality score



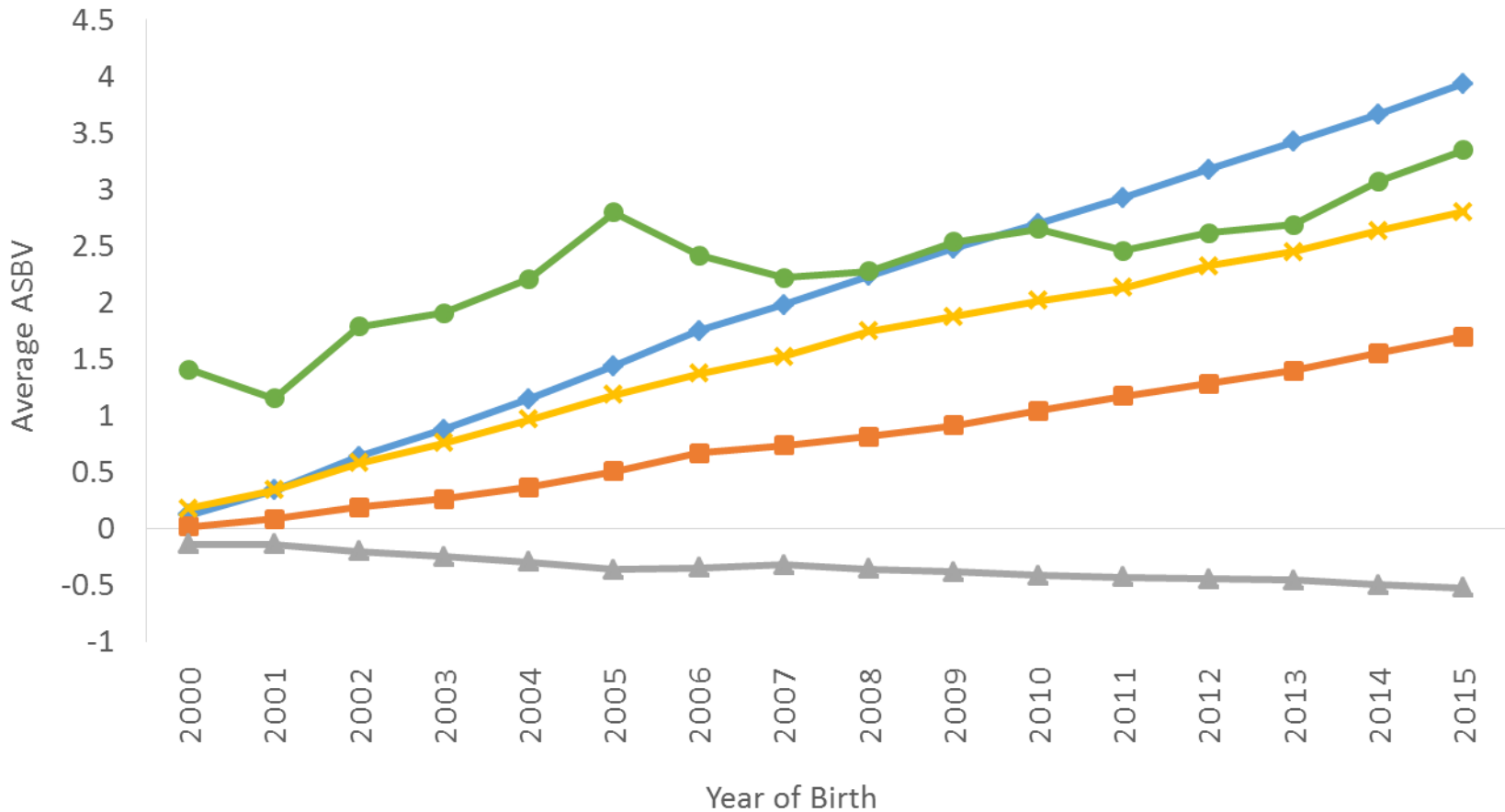
# LAMBPLAN Genetic Trends (April 2017)

◆ CWT   ■ DRESS%   ✕ LMY%



# LAMBPLAN Genetic Trends (April 2017)

—◆— CWT   —■— DRESS%   —×— LMY%   —▲— IMF%   —●— ShearForce5





# 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 data

(Price relative to 3\*, n = number consumers)

	<i>n</i>	Ungrade	3*	4*	5*
<b>Mean</b>	<b>5,843</b>	<b>50%</b>	<b>100%</b>	<b>144%</b>	<b>190%</b>

Australian consumers - lamb



Tighe et al. 2015 Review of Agricultural Economics - submitted

# Willingness to pay x eating quality

O'Reilly, Pannier et al 2016

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

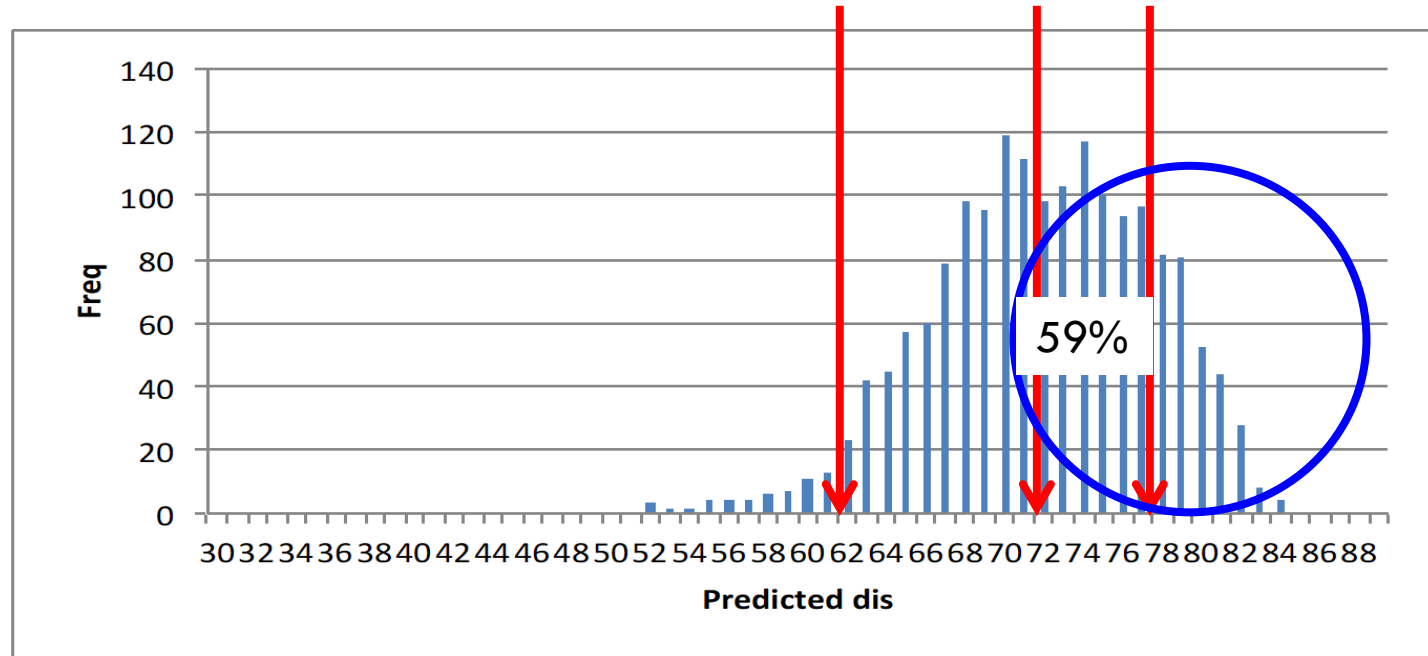
Grilled lamb, hot pot in progress right now

# MSA model

Next use carcass variables to predict the Sheepmeat Eating Quality score

- HCW
- LMY
  - Direct = DEXA
  - Indirect = GR x eye muscle depth
- IMF
  
- All are significant predictors

# MSA loin prediction = MSA index ??



Based on the MLA Genetic Resource flock lambs n = 1,692

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

- They will be more complex
- They will represent objective measures of the carcass
- 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

LMY	FS	Weight (kgs)																																									
		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																																									

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54-56	5												
56-57	4												
57-58	3												
58-60	2												
60+	1												
				MSA loin index= 72									

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



# What might future grids look like?

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Possibly compliance bonus

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

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

# 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 carcass

- Likely to start including LMY and EQ