

MINTRAC CONFERENCE 2016

Dr David Rutley

6th April 2016



GRASS SEEDS

Risks and Management

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Introduction

- Thomas Foods International
- Grass Seeds Contaminate Lamb Carcasses
- The Cost of Grass Seeds
- Grass Seeds in the Paddock
- Controlling Grass Seeds



Thomas Foods International

Process 15-20% Australia's
Sheep & Lambs

BUY NATIONALLY



TFI

–

Sell Globally



A young boy with light brown hair, wearing a white cable-knit sweater, is crouching in a forest. He is looking down at the ground. Behind him, a young girl with long dark hair, wearing a dark blue jacket, is also crouching and looking down. The ground is covered with fallen brown and yellow leaves. The background is a soft-focus forest scene with trees and more leaves.

Supply Chain Video (5 mins)
Available at www.ThomasFoods.com.au
In the Media Tab

Value Chain

Consumption

Customers

Preparation

Distribution

Processing

Finishing

Production

Genetics

Consumer Feedback

Conception



What Is Important?

- For Who?



What Is Important?

Consumer

1. Food Safety
2. Degree of Doneness
3. Size
4. Juiciness
5. Tenderness
6. Flavour

Eating Quality



What Is Important?

Consumer

Chef

Consumer Feedback

1. Thickness
2. pH
3. Connective tissue (Cut)
Plus Consumer



What Is Important?

Consumer

Chef

Distribution

Consumer Feedback

1. Storage & Shelf Life

— Temperature, Oxygen
& Packaging
Plus Preparation
Plus Consumer



What Is Important?



Consumer

Chef

Distribution

Processing

1. Lean Meat Yield
2. Etc.
plus all above

Consumer Feedback



What Is Important?



Consumer

Chef

Distribution

Processing

Finishing

Consumer Feedback

1. Growth Rate
 2. Feed Conversion
- plus all above



What Is Important?



Consumer

Chef

Distribution

Processing

Finishing

1. Fertility

2. Survival

3. Growth

plus all above

Production

Consumer Feedback



Managing What is Important

Attribute	Trait	Chain Member	Management System
Food Safety	Bacterial counts	Chef/Cook Retailer/Distributor Processor Finisher/Producer	QA (HACCP)
Degree of Doneness	Subjective	Chef/Cook	N/A
Portion Size	Weight (gm)	Processor	Process Control
Juiciness, Tenderness, Flavour	Subjective, predicted by sensory tests		
Thickness	mm part of size		Process Control
Connective Tissue	Function of cut Ultimate pH	Finisher/Producer	MSA
Storage Shelf Life	days/weeks	Retailer/Distributor Processor Finisher/Producer	QA (HACCP) MSA Process Control
Saleable Yield	%	Processor	QA (HACCP)
Meat, Trim, Fat, Bone, Skin		Finisher/Producer	Process Control
Fertility, Survival, Growth	No Lambs Weaned Weight Gain (gm)/day	Finisher/Producer	Process Control

GRASS SEEDS

Seedy Line – 30/03/2016

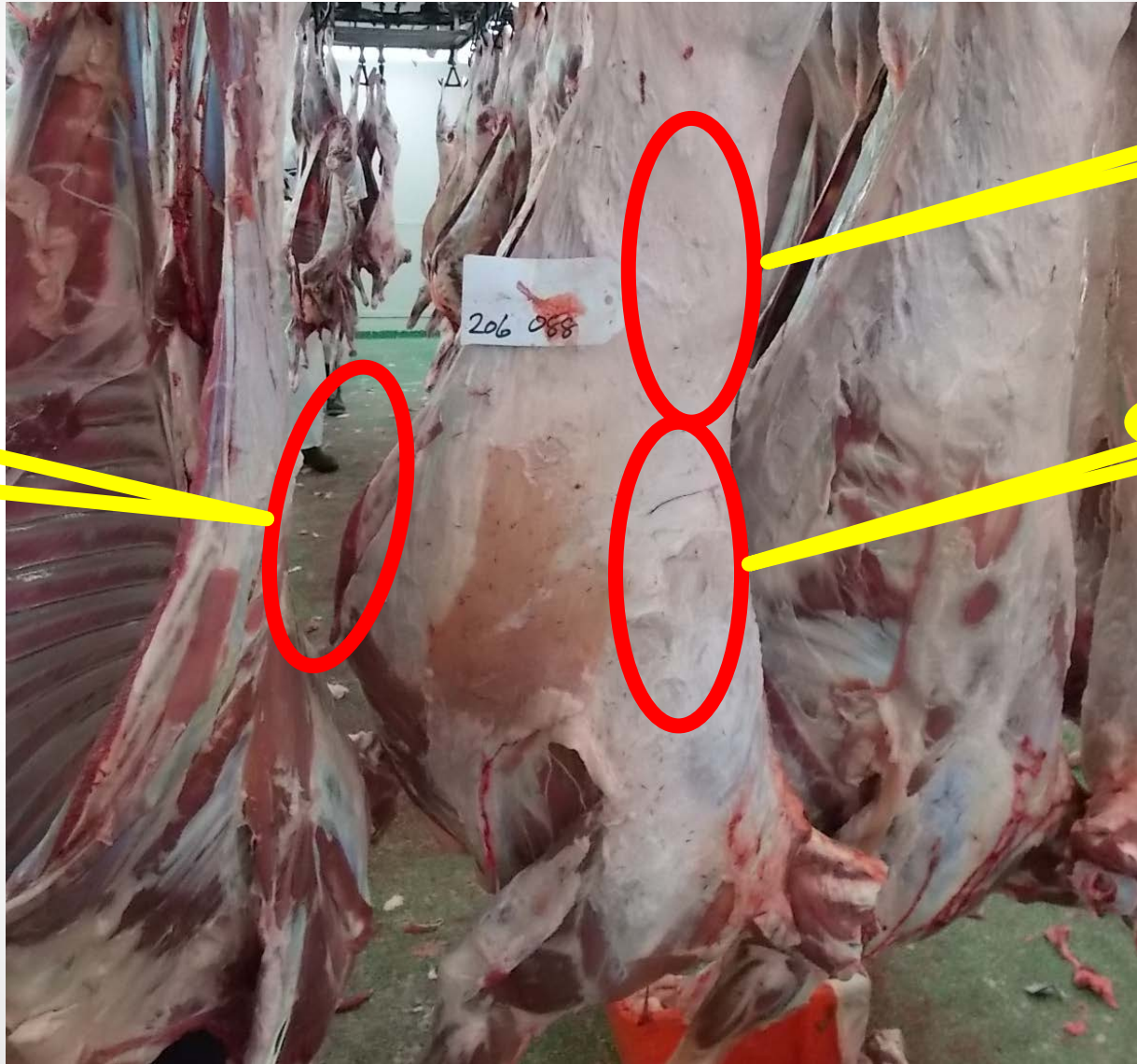
- Lot number 206088 – 130 merinos
- 100 % seedy and infected seeds.
- Heavy, slowed chain down
- Extra trimmers to trim hindquarters, forequarters, flanks and backbone, wool very dirty and poor skins.
- Photos attached
- Placed in chiller 9 and stamped with S



Seedy Line – 30/03/2016



Seedy Line – 30/03/2016



**Note:
Trim on
Floor**

Loin

Rack



Seedy Line – 30/03/2016



How Can We Prevent Grass Seeds?

- Feedback
- Price Signals
- Farm Management



Feedback

	Impact on Carcase Value		
	Low (minimal seed)	Moderate (flank, brisket)	High (shoulder, rack/loin, leg)
Percentage of Mob	%	%	%
Discount (\$/kg HSCW)	X.XX \$/kg		

MLA – Lamb Value Calculator

Lamb Value Calculator

Gross Margin Analysis

Grass Seed Module

MAIN MENU



Carcase Data

Retail Analysis

Retail Charts

Cost Analysis

Gross Margin Analysis

Gross Margin Charts

GSEED Analysis

Carcase
Description

Cut Value
Input

Primal Retail
Value

Purchase -
Slaughter
Expenses

Estimated
Gross
Margin

Cost
Proportions

Operational
Costs

Cut
Specification

Estimate
Primal Wts

Primal % of
Retail Value

OTH Grid
Design

Target Gross
Margin %

Retail Value
vs. GM \$

Primal
Downgrades

Primal Retail
Value

Primal Yields

Total Costs
Pre-Boning

Actual GM%
Calculations

Actual vs.
Target GM %

Cost Analysis

Primal
Weight Grid

Boning Costs

Target GM%
Calculations

Actual vs.
Target GM \$

Entire Day
Average

Gross
Margin Grid

PRINTING TOOLBOX

Print all Work sheets

Generate PDF File

Lamb Value Calculator v6.22

Built/Designed by: Chris Smith

Email: ChrisSmith.agbiz@gmail.com

Cost of Grass Seeds – Heavy

MOB ANALYSIS

130 hd.

COSTS (\$/hd)

REVENUE (\$/hd)

Trim Wastage Revenue

\$0.29

OTH Price Difference

\$6.41

Extra S/F Costs

\$10.57

Extra Boning Room Costs

\$9.56

Reduction in Primal Cut weight Costs

\$8.08

Primal Cut Downgrade Costs

\$38.10

\$66.32

\$6.70

GSEED COST (\$/hd):

\$59.62

GSEED COST (\$/kg HSCW):

\$2.98

Cost of Grass Seeds – Light

MOB ANALYSIS

130 hd.

	COSTS (\$/hd)	REVENUE (\$/hd)
Trim Wastage Revenue		\$0.05
OTH Price Difference		\$0.96
Extra S/F Costs	\$10.57	
Extra Boning Room Costs	\$9.56	
Reduction in Primal Cut weight Costs	\$0.87	
Primal Cut Downgrade Costs	\$0.00	
	\$21.00	\$1.01

GSEED COST (\$/hd): \$19.99

GSEED COST (\$/kg HSCW): \$1.00

National Grass Seed
Action Program

**Management
on-farm**

Geoff Duddy

National Grass Seeds Action Plan

Grass Seed Implications - Reduced growth rates

- as few as 25 seeds in a carcass can reduce growth rates by 50% and
- compensatory growth does not make up for seed induced growth rate loss



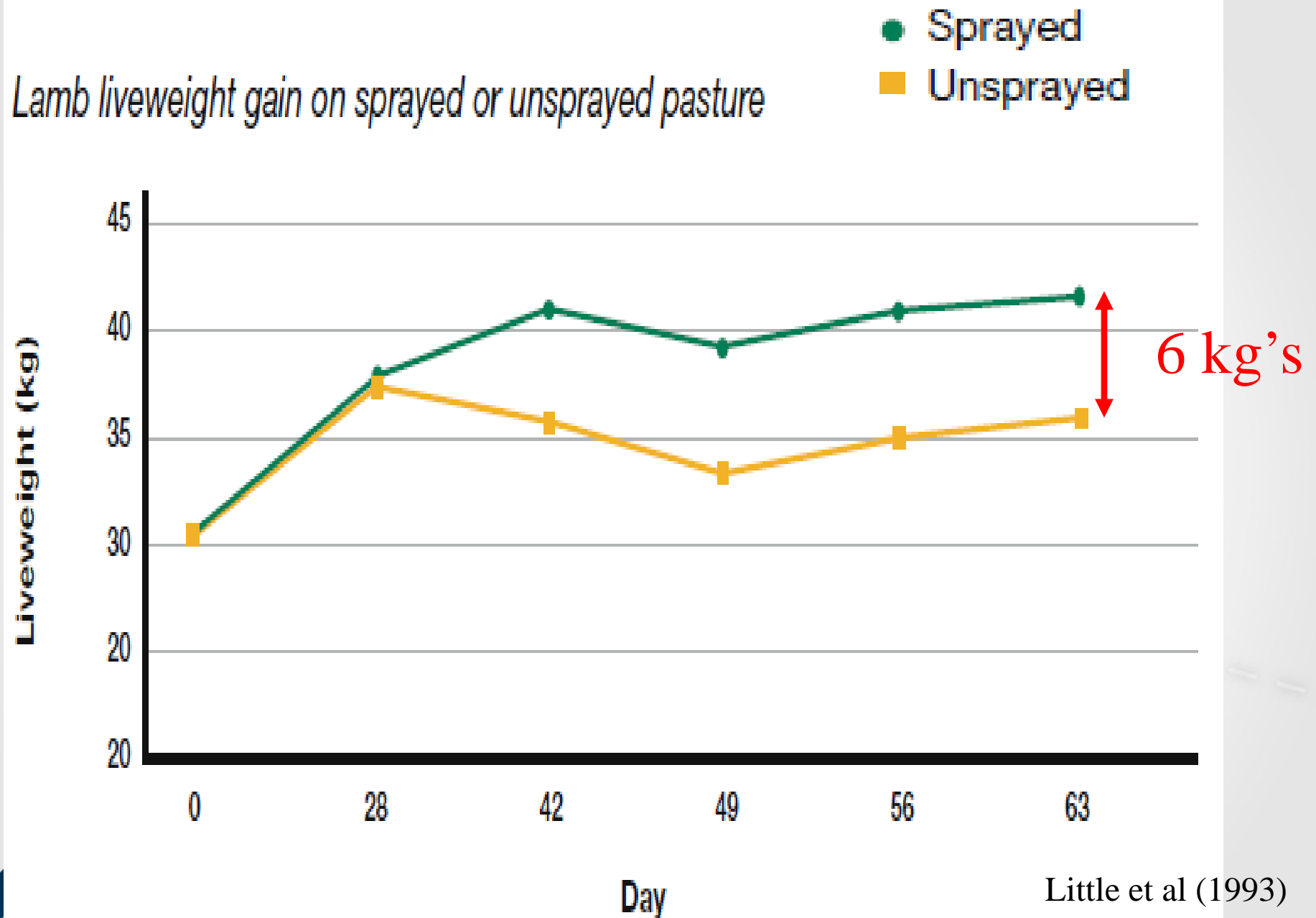
National Grass Seeds Action Plan

Grass Seed Implications - Reduced growth rates

- sudden checks in lamb growth rates coincide with maximum seed shed
- leading to lower carcass weights and values



Lamb liveweight gain on sprayed or unsprayed pasture



National Grass Seeds Action Plan

On Farm Management

- Strategic Grazing
- Genetics
- Targeted marketing
- Feedlotting
- Modifying lambing times
- Shearing prior to seed set

Crash graze or
stock heavily prior

Faster growth rate

Sell as store or

Grain based
finishing during

Need to do sums
!!!

Does it really solve
the problem ??



Effect of Shearing and Winter Cleaning Pastures

Treatment	Sprayed	Unsprayed
Shorn	1.6	3.0
Unshorn	7.2	47.0

**Seed per 100 cm²
on carcass**

Phillips and Campbell (1998)



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Phillips and Campbell (1998)



National Grass Seeds Action Plan

So how long do grass seeds persist in
skins/carcases ??

- merino wether weaners grazing natural pasture (wiregrass, barley grass and corkscrew) for 6 months
- shorn and then grazed Lucerne, oats and seed free pasture for 2 years
- periodically slaughtered to measure seed levels



National Grass Seeds Action Plan

	Grazing Seedy Pastures (6 months)	Grazing Seed Free Pastures (2 years)	Percentage Decline in seed
Skins	86	7	81%
Carcases	3	1	66%



National Grass Seeds Action Plan

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National Grass Seeds Action Plan

The answer?

Grass seed infestation of skins and carcasses can be managed and reduced but

- Shearing is not the 'be all - end all'
- Grass Seeds will persist in skins and carcasses for several years
- A combined approach is best



National Grass Seed Action Program

Managing weed seed contamination

1. Weed Identification
2. Management Strategy

Weeds of importance

Species of importance

- Annual grasses
 - Barley grass
 - Brome grass
 - Silver grass
- Perennial grasses
 - Chilean needle grass
 - Spear grass
 - Wire grass
- Broadleaves
 - Erodium (Storksbill)

Identification is important

- Enables the appropriate approach
- Tailored to each:
 - Species of weed
 - Location
 - Enterprise
 - Individual's preference



Barley grass



Brome grass



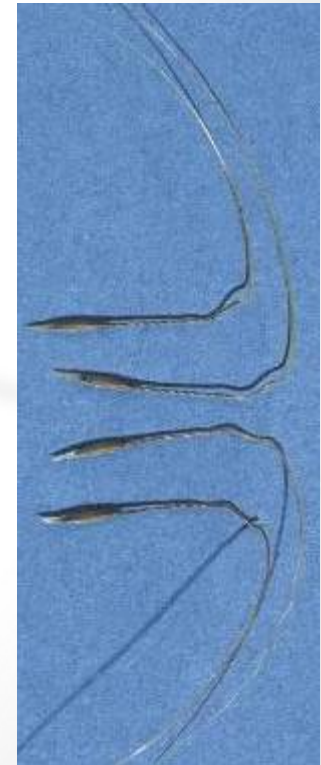
Silver grass



Chilean Needle Grass



Spear grass



Wire grass



Corkscrew, Storksbill – *Erodium* spp.



Strategy	Short Term	Long Term
Winter Cleaning	✓	✓
Spray topping and Spray Grazing	<i>Sometimes</i>	✓
Crop Rotation	✗	✓
Pasture Improvement	✗	✓
Fodder Conservation	✓	<i>Sometimes</i>
Harrowing and Slashing	✓	✗
Forage Cropping	✓	<i>Sometimes</i>

Grazing

- Manipulates pasture composition and seed set
- Most effective in perennial pastures
- The process
 - Heavy Grazing (30 days), mid – late winter
 - Lock up paddocks
 - When annual grasses reach jointing stage, graze down to 800–100kg DM/Ha
 - Restock when pasture reaches 1,500kg DM/Ha



Spray Grazing & Spray Topping

- Spray grazing
 - Selective herbicide to increase weed palatability.
 - High stocking rates graze out the broadleaf weeds over a two week period.
- Spray topping
 - Spraying pastures to prevent viable seed set.
 - Although cheap, success is often low – timing.





Winter Cleaned
~ 5% barley grass



Behrendt (2010)

Untreated
~ 30% barley grass



Spray Topping

- Stops the formation of seed heads,
- Grass remains in a nutritious vegetative stage
 - Little rank, unpalatable growth



Fodder Conservation

- Removes seed heads from the paddock
- Creates a (temporary) seed free environment
- Follow up spray required to prevent re-growth
- Conserved fodder (hay or silage)



Fodder Crops

- Enable lambs to be removed from pasture with potential seeds on to clean fodder
- Usually sown between winter and early spring to get better seed control
- Options
 - Rape
 - Oats and Vetch
 - Peas, Beans, Vetch



Other Comments

- Not JUST Paddocks
 - Lane ways
 - Yards
 - Shelter belts
- Spot Sprayer





David Rutley

THANK YOU