THE UNIVERSITY OF MELBOURNE

FACULTY OF VETERINARY SCIENCE

MLA – Making more from sheep

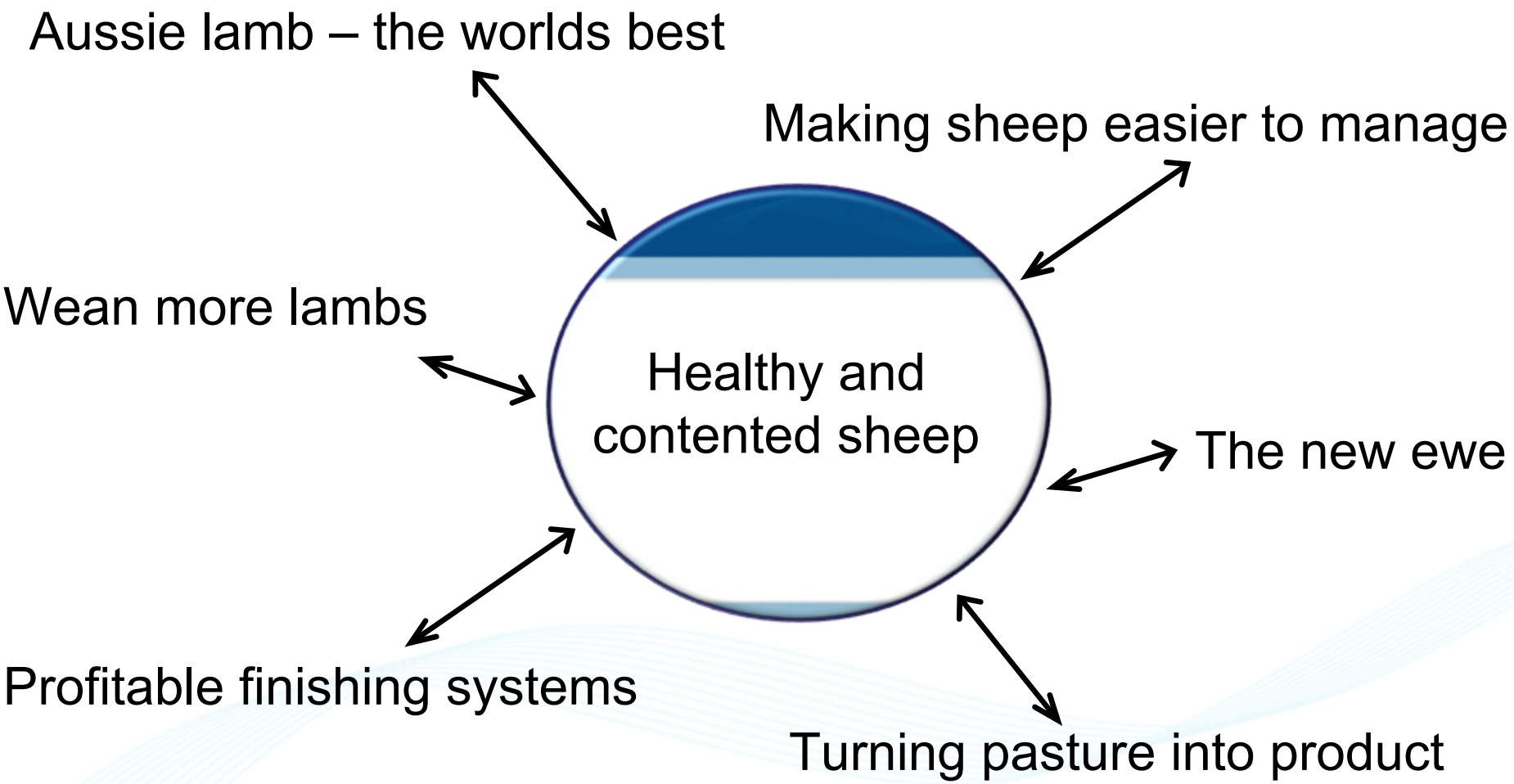
Healthy and Contented Sheep

Dr Stuart Barber

Animal Health, Management and Welfare

Plan for success – overall picture

Dr Stuart Barber
Animal Health, Management and Welfare



What goes wrong with a healthy or contented sheep…..

Dr Stuart Barber

Common things happen frequently

What are the most common, and important, diseases of sheep in your area?

- Internal parasites
- External parasites
  - Flies
  - Lice
- Post weaning mortality (mostly Merino)
- Perinatal mortality (death at or near time of birth)

What goes wrong with a healthy or contented sheep…..

Dr Stuart Barber
Animal Health, Management and Welfare

Uncommon things happen infrequently

- But can still be really important in individual situations

Relative disease importance

Dr Stuart Barber

2006 Review

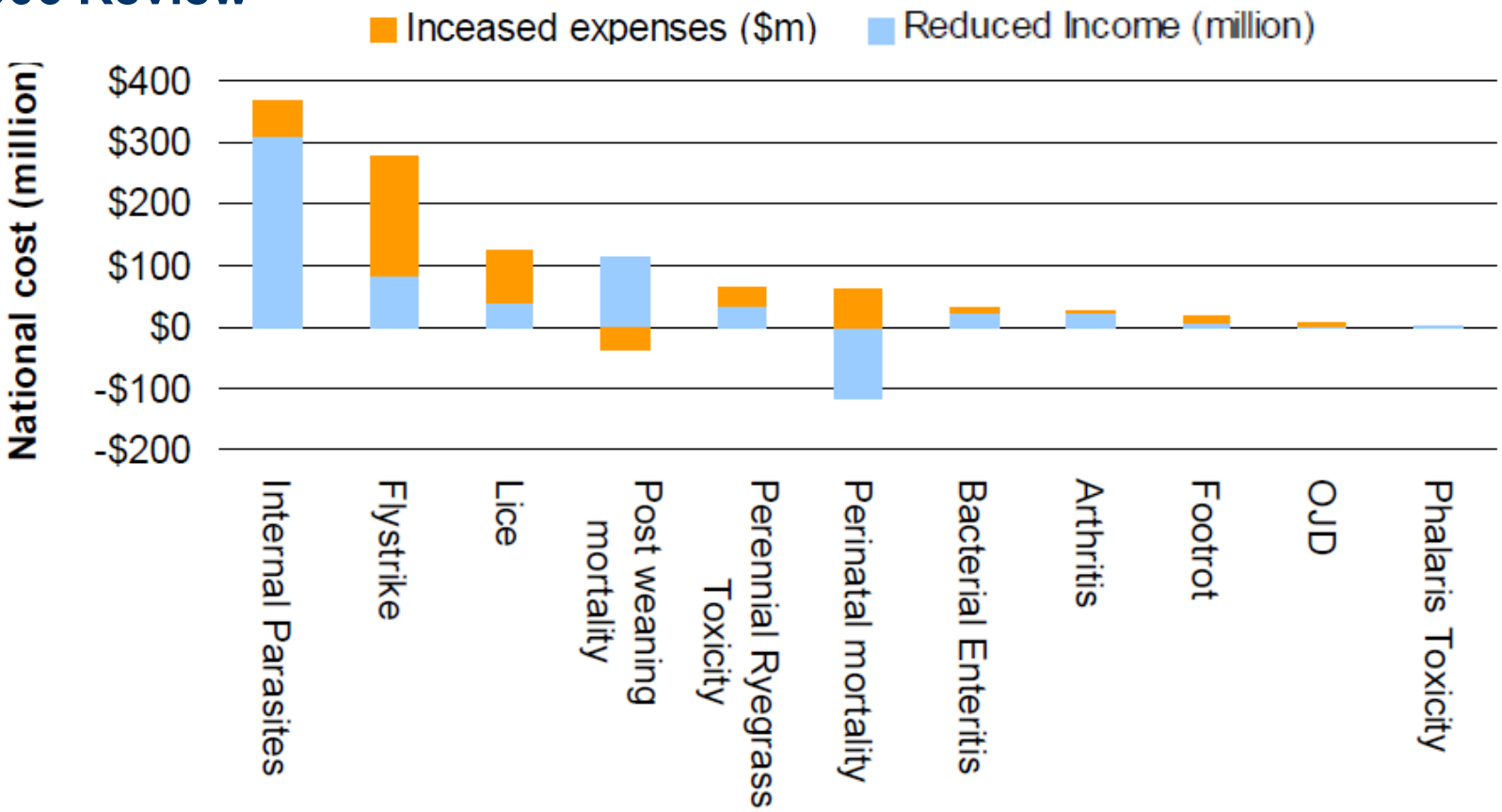


Figure 2 National cost of diseases to the sheep industry

Internal Parasites

Dr Stuart Barber

- **Worms**
  - **Primary internal parasite concern for most producers, mostly parasites of abomasum and intestines**
- **Fluke**
  - **Liver fluke (don't forget if gets wet…)**
- **Tapeworms**
  - **Carcass damage (treat your dog), zoonoses (*E. granulosus*)**

Current local advice - Wormboss

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Animal Health, Management and Welfare

Paul Nilon, Nilon Farm Health, Tasmania, reports on a good season and highlights key management issues:

1.good season
2.good feed reserves and sheep in good condition
3.Contaminated pasture (rapid return to high egg count)
4.Use long acting products for necessity, rather than convenience (body score, pasture availability)
5.Contact animal health advisor to discuss winter worm control in what are now very valuable animals

Summary of wormboss newsletter 27th July, 2009 (Tuesday) www.wormboss.com.au

Worms

Dr Stuart Barber

- What is the cost of worms?
  - Merino enterprise in high rainfall area (good control/poor control)
    - $3.14-$5.24 per sheep
  - Prime lamb enterprise in high rainfall area
    - $4.93-$12.08
- The above costs are based on 2006 prices ($2.90 CWT, 1196c/kg 18 micron)– if we convert to current prices?
- Variation in price due to a range of control from poor to good control (less cost for good control).

Worms

- from 2006 Sackett report

Table 43 Per-head economic effects of internal parasites of sheep

Zone	Reduced income ($)	Increased expenses ($)				Total ($)
		Crutching	Drenching	Shearing	Other	
Prime lamb	7.75	0.12	0.71	–0.06	–0.01	8.51

Worm cost

- What does this cost consist of?
  - Deaths
  - Reduced reproduction
  - Reduced weight gain
  - Reduced wool, increased dag
  - Cost of monitoring/drench
  - Extended turn-off time (not factored into price)
  - Reduced carcass percentage due to increased gut weight (worm damage/immune response)

Worm cost

- **Jacobsen *etal* 2009 (WA)**
  - **Sheep infected with parasites (20,000 per week, 5 wks)**
  - **Sheep euthanased at day 52 after start**
    - **FEC (WEC) of 173 epg (TWC = 30,000)**
    - **Reduced dressing percentage by over 1% (even though this level may not normally trigger a drench)**

Risk factors for worms

Dr Stuart Barber

- **RISK FACTORS FOR WORMS IN A BREEDING SYSTEM**
  - changes in management
    - age
    - general health (dentition)
  - feed availability (quality and quantity) – particularly during pregnancy and early lactation
  - clean worm free pastures at parturition
  - supplementary feeding
  - availability of grazing management options (cattle, wethers, cropping etc)

Current anthelmintic resistance levels

Dr Stuart Barber
Animal Health, Management and Welfare

Group	Level of resistance
Benzimidazole	>90%
Levamisole	>80%
Combination (BZ/LV)	>60%
Macrocyclic lactone	30-80%

<10% of producers know their drench resistance status

Increased deaths, decreased wool weight, decreased body weight

The elephant in the room - Anthelmintic resistance

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Animal Health, Management and Welfare

1. Don't bring in more resistance than you already have on your property (quarantine drench ALL arrivals!)
2. Know your current resistance status (drench resistance trial)
3. Understand the yearly cycle on your property and monitor, monitor, monitor, monitor, monitor (FEC, LC)

Benzimidazole (white)	Levamisole (clear)	Organophosphate
Macrocyclic lactones (Mectins eg. Ivomec)	NEW GROUP – AADs – monepantel - Zolvix (soon)	Combinations

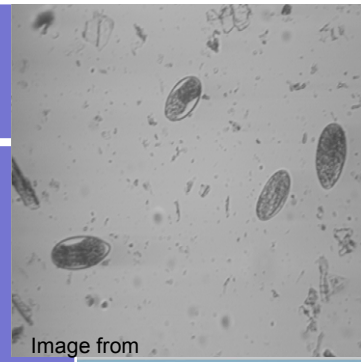

Image from http://homepages.inf.ed.ac.uk/rbf/HIPR2/images/egg1.gif

Reducing resistance

Dr Stuart Barber

- The only way to reduce resistance is to reduce the number of resistant parasites pass their genes onto the next generation
  - Correct amount of drench (weigh animal, measure drench)
  - Only drench when needed (FEC – all mobs where possible as not uniform depending on grazing history, condition score, genetics etc)
  - Possibly leaving some sheep undrenched ("refugia" concept – but remember primary objective is control of parasites!)
  - Consider split grazing with cattle to extend time between drenching

Flystrike

Dr Stuart Barber

Management without mulesing

- Additional crutching & jetting

- Intradermals research continuing for wrinkle reduction/bare area

The Australian blowfly (*Lucilia cuprina*)

Image from making more from sheep – module 11

Flystrike – genetics

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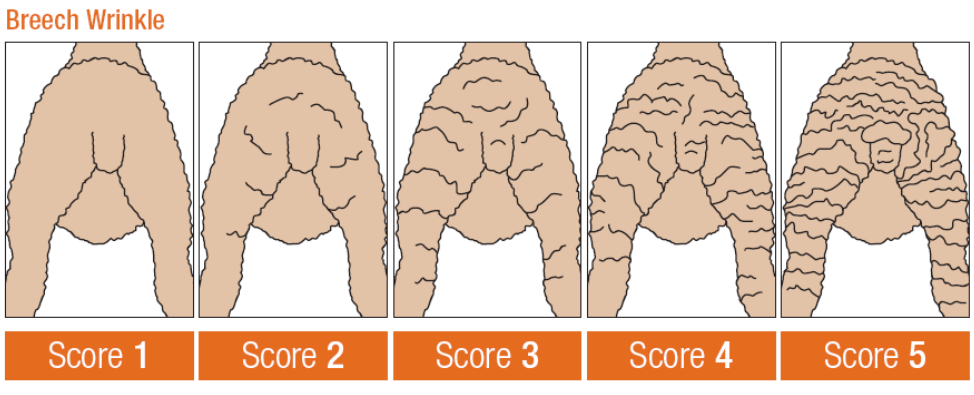
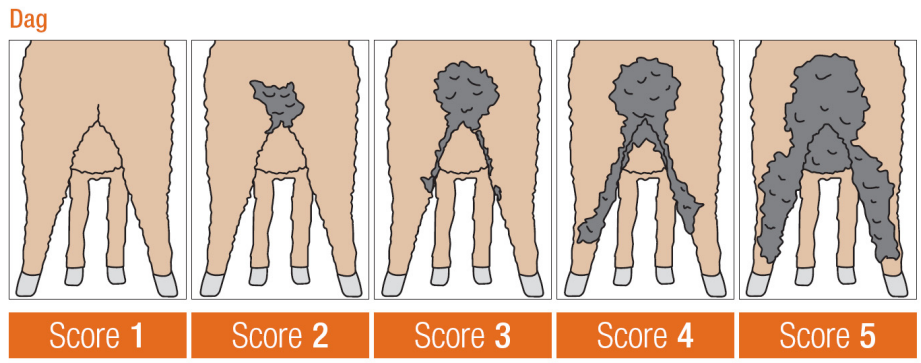
Management without mulesing

- Genetic reduction = longer term, incremental improvement
  - breech wrinkle score 2 or less (ASBVs now available)
    - reduced requirement for crutching/jetting
    - increased reproductive rate

Review balance of meat versus wool traits? (index)

- Also review dag score





Lice

Dr Stuart Barber

Mode of action and reported first usage of some common sheep lousicides (extract from http://www.avenge.com.au/New_chemistry.htm)			
Chemical class	**Chemicals**	**Australian use commenced**	Resistance
Neonicotinoids	Imidacloprid	2009	
Spinosyns	Spinosad	2003[ƒ]	
Macrocyclic lactones (avermectins)	Ivermectin	1995[*]	
Insect growth regulators	Diflubenzuron Triflumuron	1993[^]	Some field reports
Synthetic pyrethroids	Cypermethrin Deltamethrin	1978[Δ]	Yes
Organophosphates	Diazinon Temephos	1957[†]	Rare

Lice

Dr Stuart Barber

Resistance

Increased levels in most areas?

Application of chemical

Biosecurity

Lice detection test

A sheep louse

Image from making more from sheep – module 11

Post weaning mortality

Dr Stuart Barber

How many lambs do you have at weaning?

How many lambs do you have for sale or for re-introduction to the sheep flock?

- Need to measure
- <6% should be your goal (for Merinos, <3% crossbred)
- Indicators for weaned lambs (Merino lambs)
  - Grow at a minimum of 1 kg per lamb per month
  - Wean at a minimum of 20 kg as this dramatically reduces the mortality rate (irrespective of growth rate afterwards)
- Review feeding and monitoring programs to improve

Post weaning mortality

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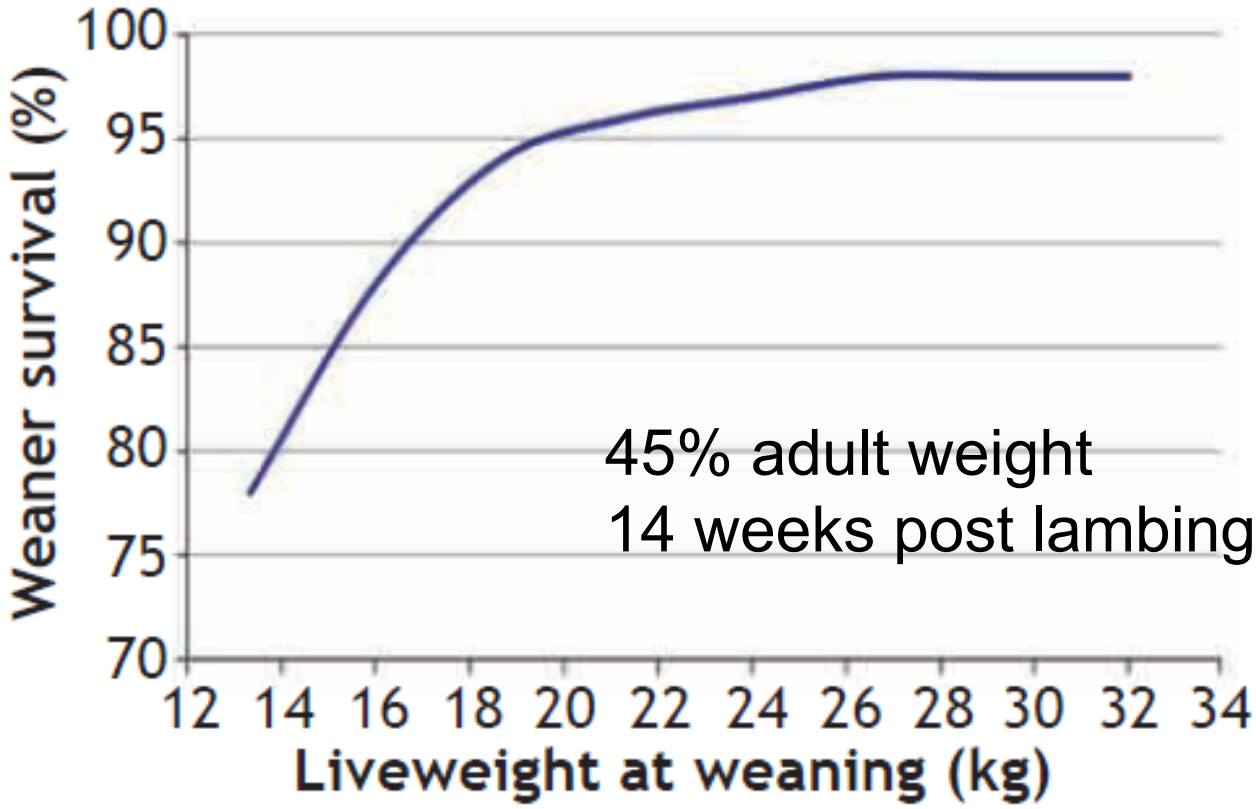
Liveweight at weaning and survival of Merino weaners (45 kg SRW) to 12 months



45% adult weight
14 weeks post lambing start

Peri -natal mortality

Dr Stuart Barber

Identify causes of lamb loss

- What are your main causes of lamb loss?

- Can this be reduced (for appropriate cost)?
  - Range of ASBVs for
    - Birth weight
    - Lambing ease
    - NLB
    - NLW
  - Shelter (especially for twinning sheep), mob size
  - Wet/dry sheep at weaning – check mastitis, shearing cuts

SHEEP GENETICS

mla MEAT & LIVESTOCK AUSTRALIA

awi Australian Wool Innovation Limited

Biosecurity

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Animal Health, Management and Welfare

Know what disease problems you have on your property and understand how to manage/control them

Keep other things out

- Ovine brucellosis
- Drench resistance
- OJD
- Footrot
- Lice

Further information

Dr Stuart Barber
Animal Health, Management and Welfare

- Your local farm network
- Your local veterinarian
- Veterinary consultant
- DPI staff

- Wormboss
- Flyboss
- Liceboss

http://www.wool.com/Grow_LiceBoss.htm

Making more from sheep

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Animal Health, Management and Welfare

Making More From Sheep

MODULE 11

Healthy and Contented Sheep

Take home messages

Dr Stuart Barber
Animal Health, Management and Welfare

Worms

- Monitor FEC (WEC)
- Drench resistance trial
- Quarantine drench ALL arrivals
- Management (not just chemical)

Flies

- Use genetics to reduce wrinkle
- Management

Lice

- Only treat when required

Post weaning mortality

- Weaners weaning weight
- Post weaning gain = 0.75-1 kg per month

Peri natal mortality

- Know your target
- Identify reasons if not achieved

Biosecurity

- Know what you have (& manage)
- Keep the other things out!