



Murdoch
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Selection for muscling increases dressing percentage in lambs

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Outline

- **Dressing Percentage**
- **Sire breeding values for carcass traits**
 - **Sire PWWT ASBV**
 - **Sire PFAT ASBV**
 - **Sire PEMD ASBV**
- **Carcass traits increase carcass weight via dressing percentage**

Dressing %



45%

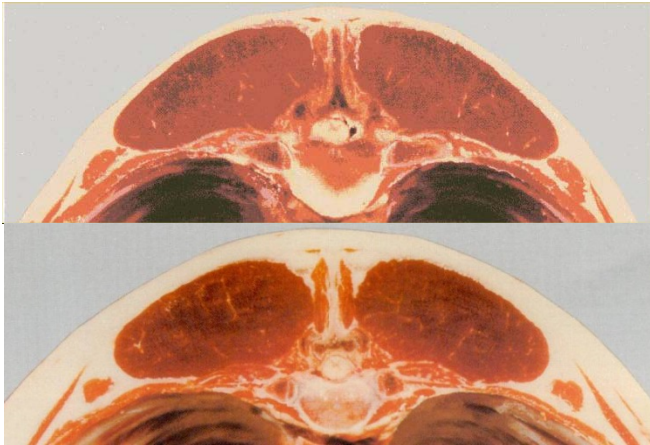


- **Viscera early maturing** (Dressing% worse in younger/smaller lambs)
- **Leaner lambs have higher dressing %**

Breeding Values

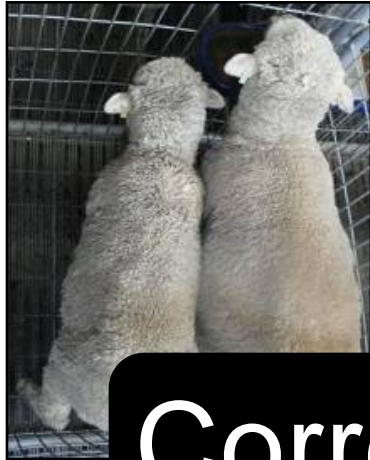


- **Growth (PWWT)**



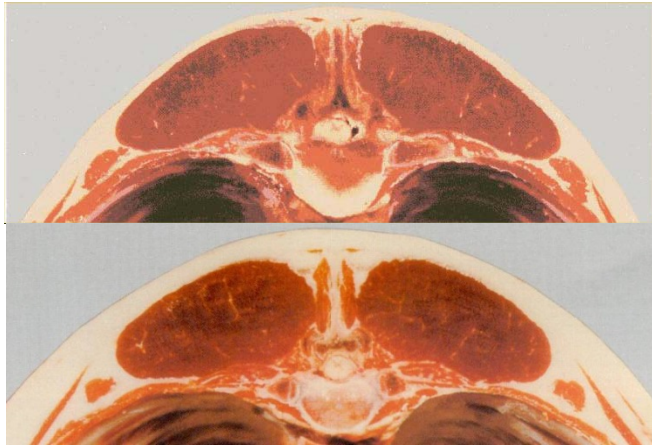
- **Fat depth (PFAT)**
- **Eye muscle depth (PEMD)**

Breeding Values



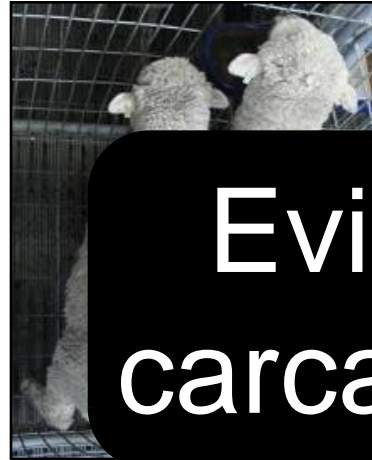
- **Growth (PWWT)**

Corrected to constant weight

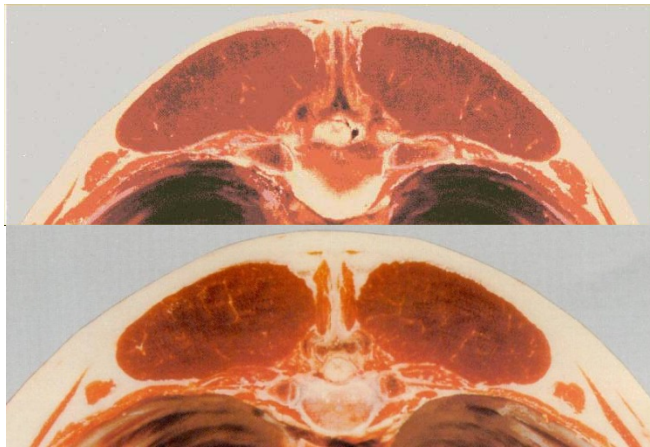


- **Fat depth (PFAT)**
- **Eye muscle depth (PEMD)**

Breeding Values



Evidence that lean carcasses dress higher



- Fat depth (PFAT)
- Eye muscle depth (PEMD)

Hypotheses

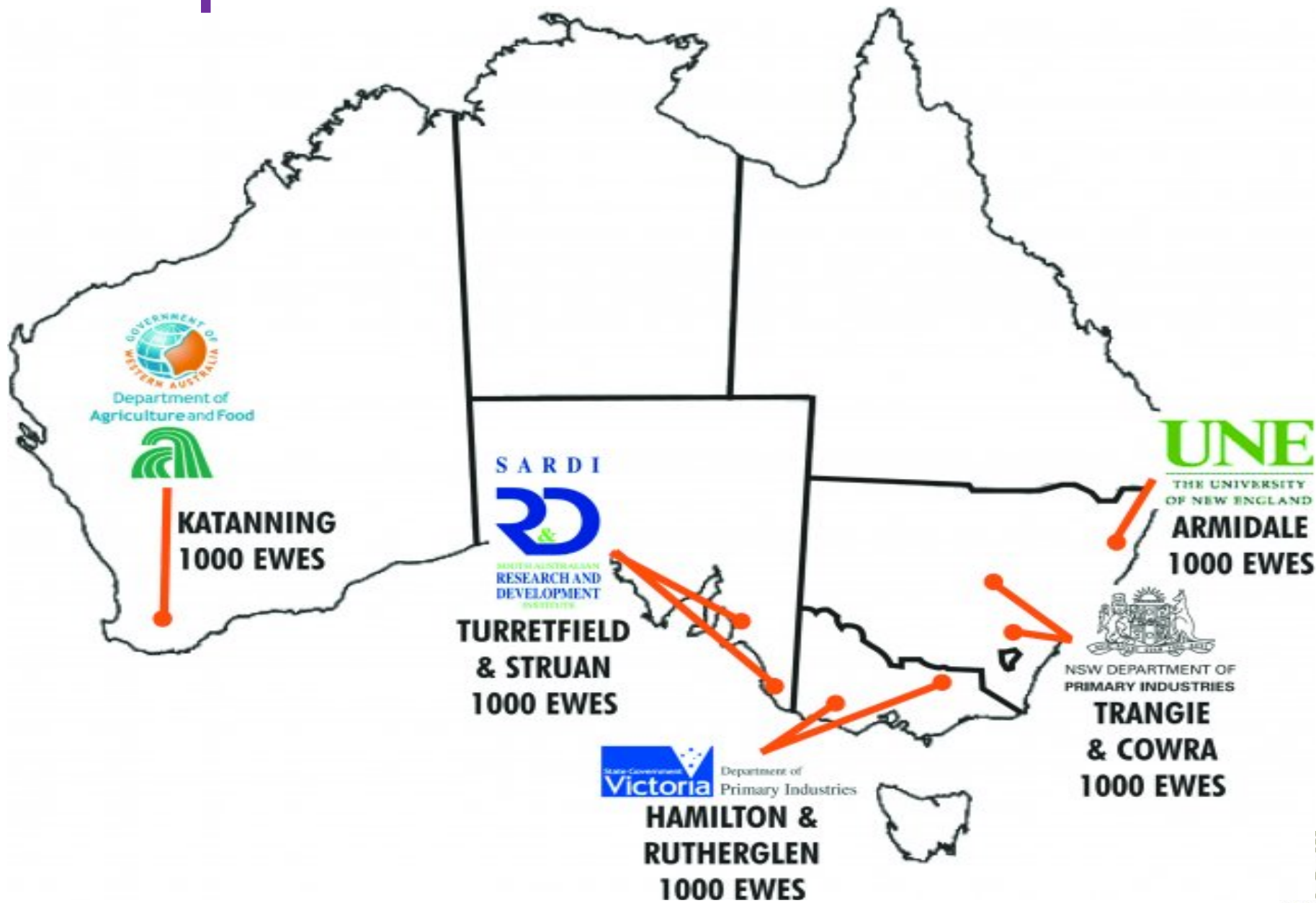
Increased dressing% = bigger carcass

- Reduced fat depth (PFAT)
- Eye muscle depth (PEMD)

No effect on carcass wt

Methods

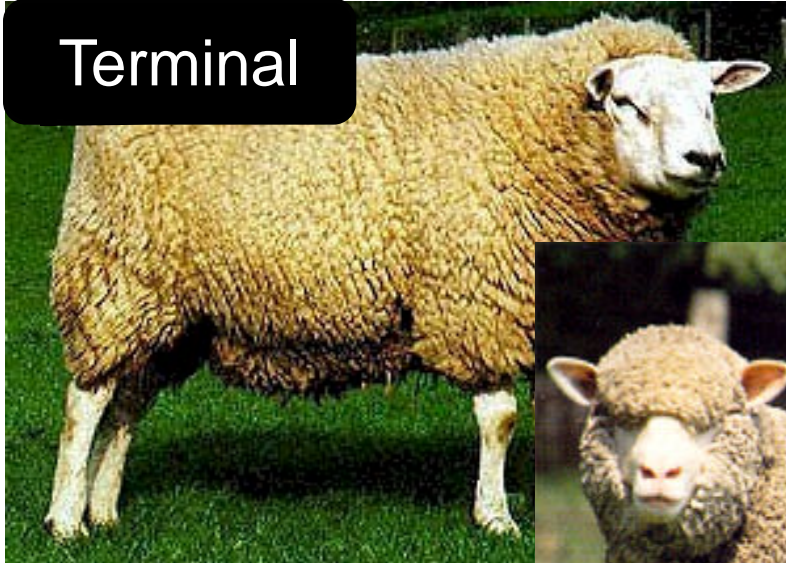
Sheep CRC Information Nucleus Flock



Sire Types

100 sires used each year, representing...

Terminal



Maternal



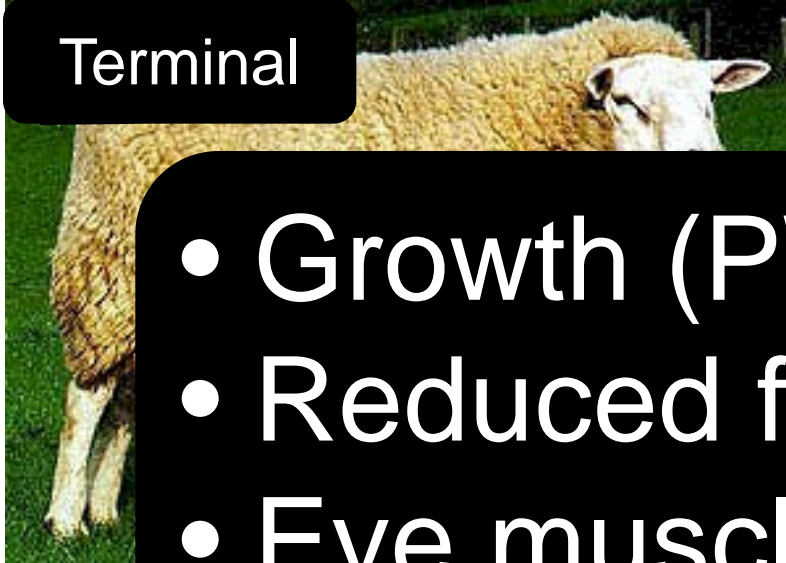
Merino



Sire Types

100 sires used each year, representing...

Terminal



Maternal



- Growth (PWWT)
- Reduced fat depth (PFAT)
- Eye muscle depth (PEMD)

Merino



Phenotypic Analysis

Carcase Trait

4yrs Data

- Pre-slaughter weight after 6h curfew
- Carcase weight
- Dressing %

Data analysed

- 8 sites
- 4 years data
- 363 sires
- 7325 lambs analysed

Phenotypic Analysis

Carcase Trait

4yrs Data

Data analysed

- 8 sites
- 4 years data
- 363 sires
- 7325 lambs analysed

Fixed Effects

Site

BTRT

Sex

Sire Type

Dam Breed (ST)

Kill Group (Site)

Covariates

PWWT

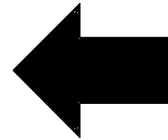
PFAT

PEMD

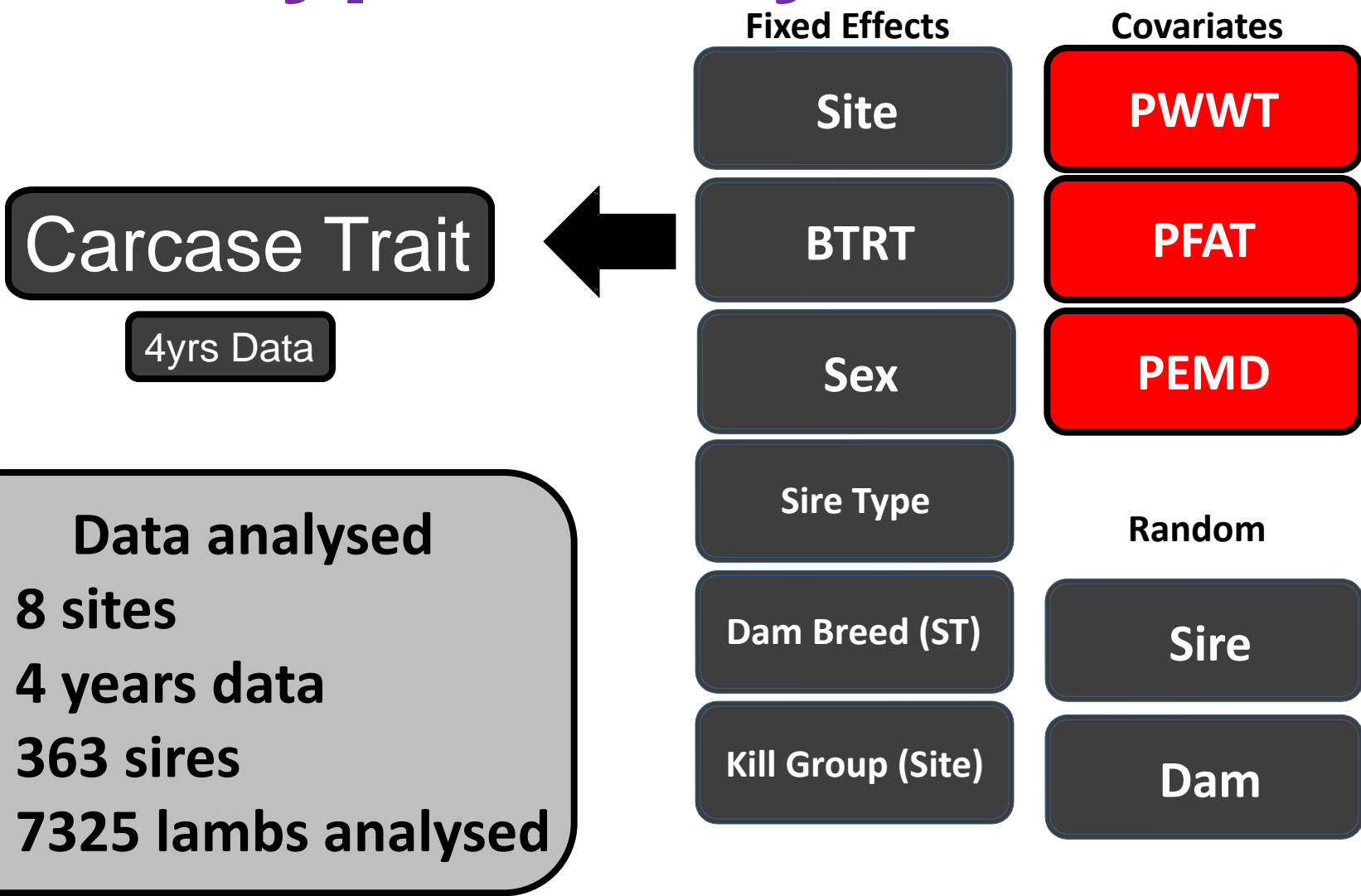
Random

Sire

Dam

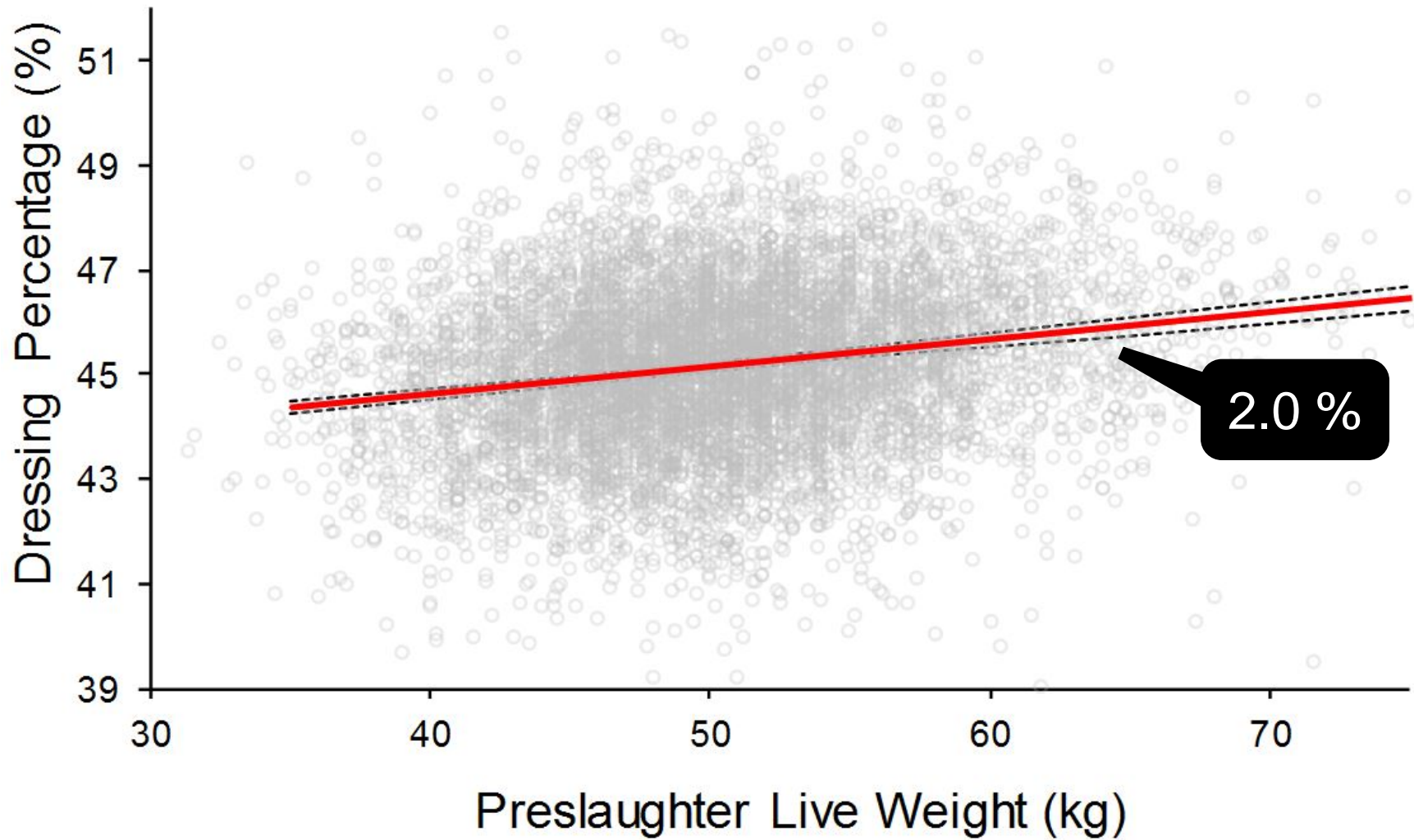


Phenotypic Analysis



Results

Higher dressing% in heavier lambs!

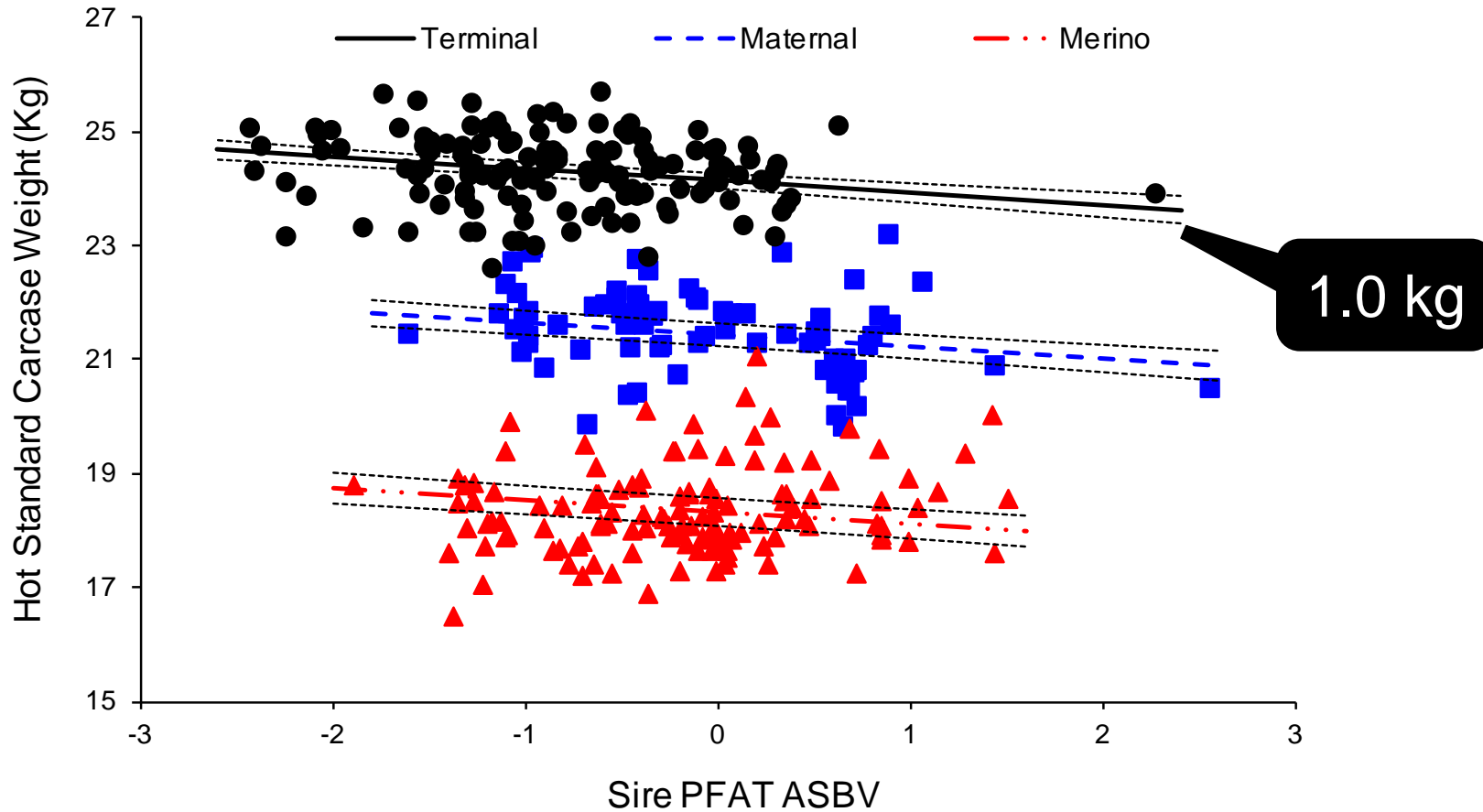


PFAT

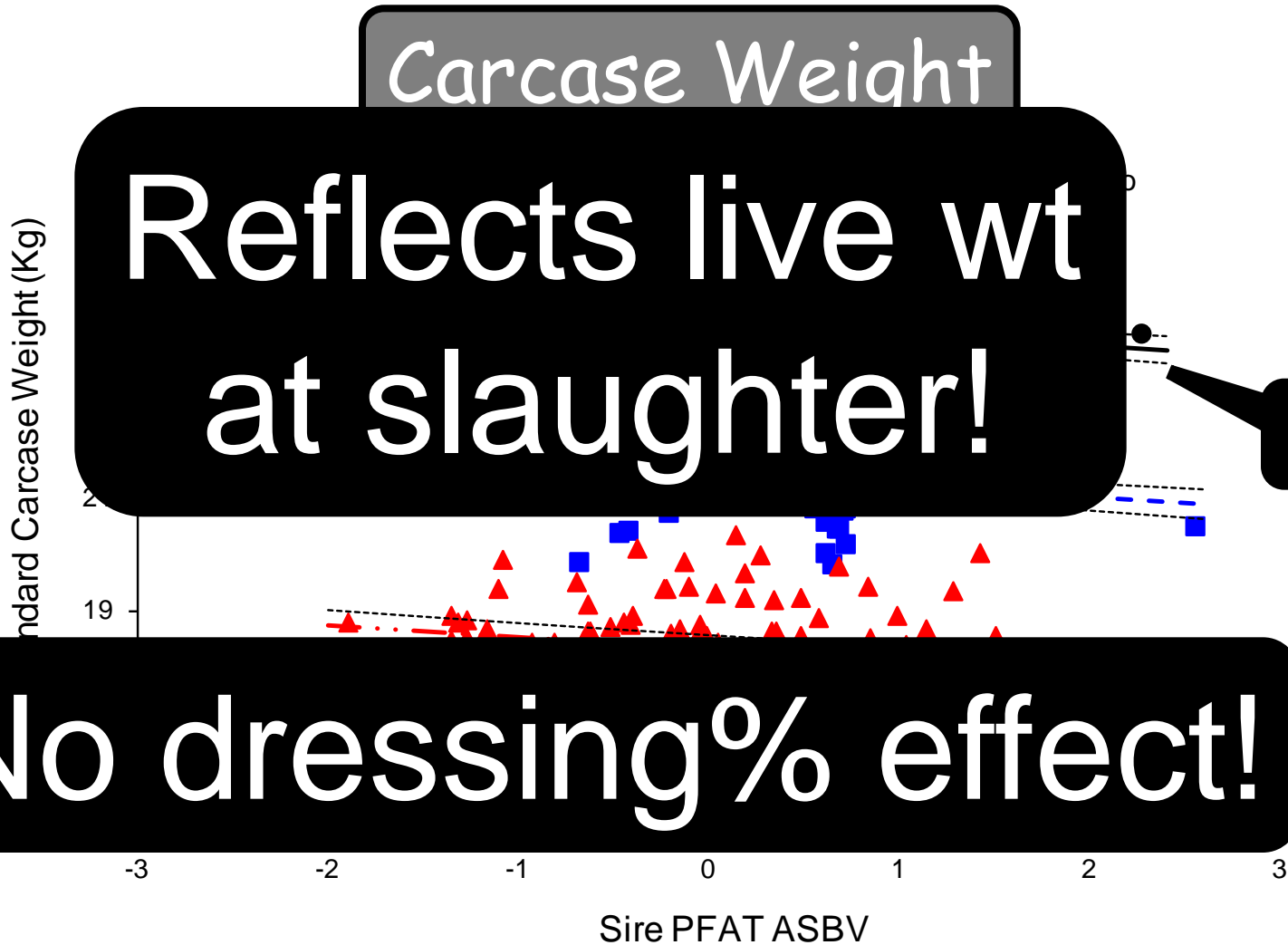
Carcase Effects

PFAT - They're Heavier!

Carcase Weight



PFAT - They're Heavier!

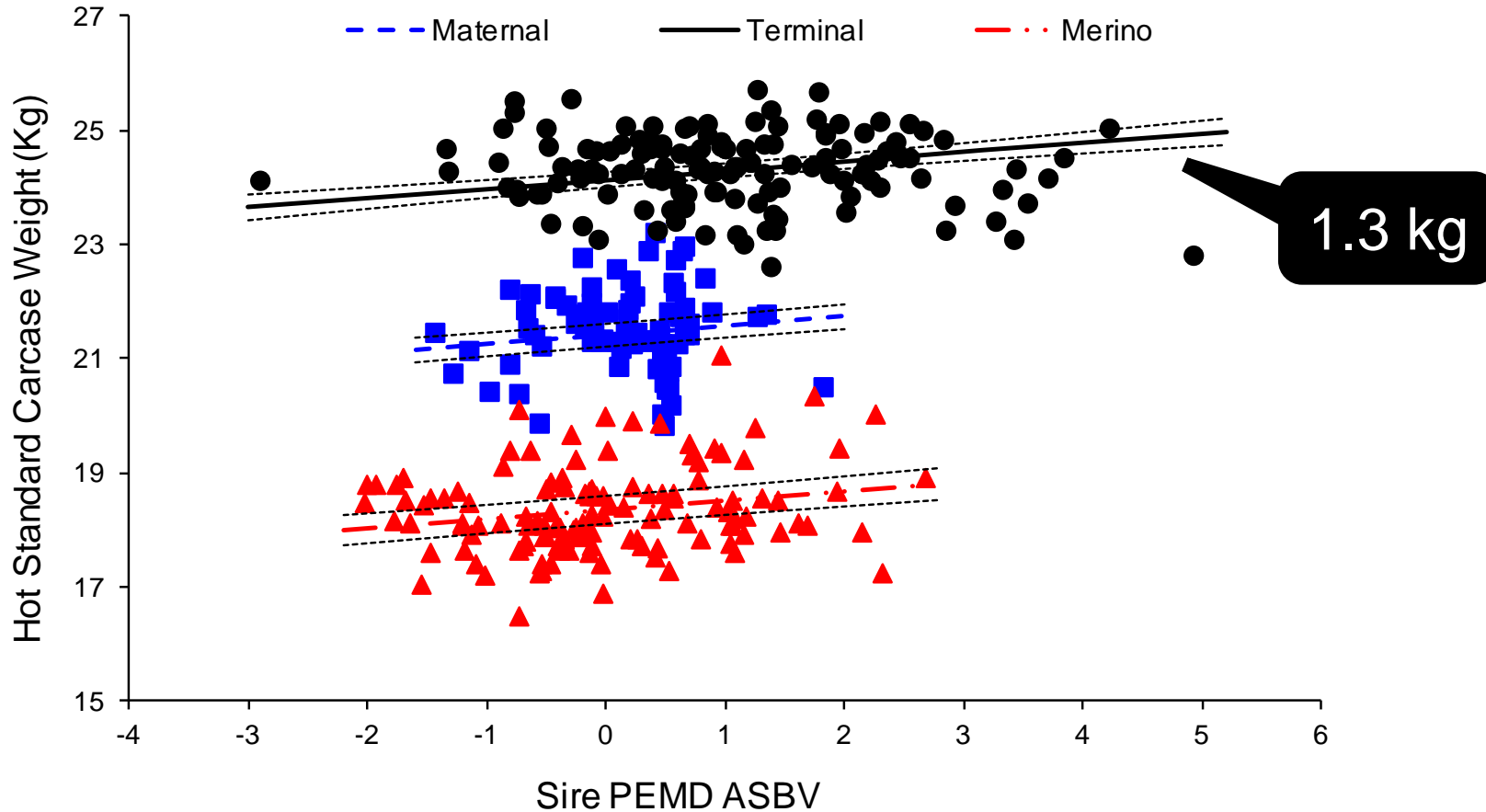


PEMD

Carcase Effects

PEMD - They're Heavier!

Carcase Weight

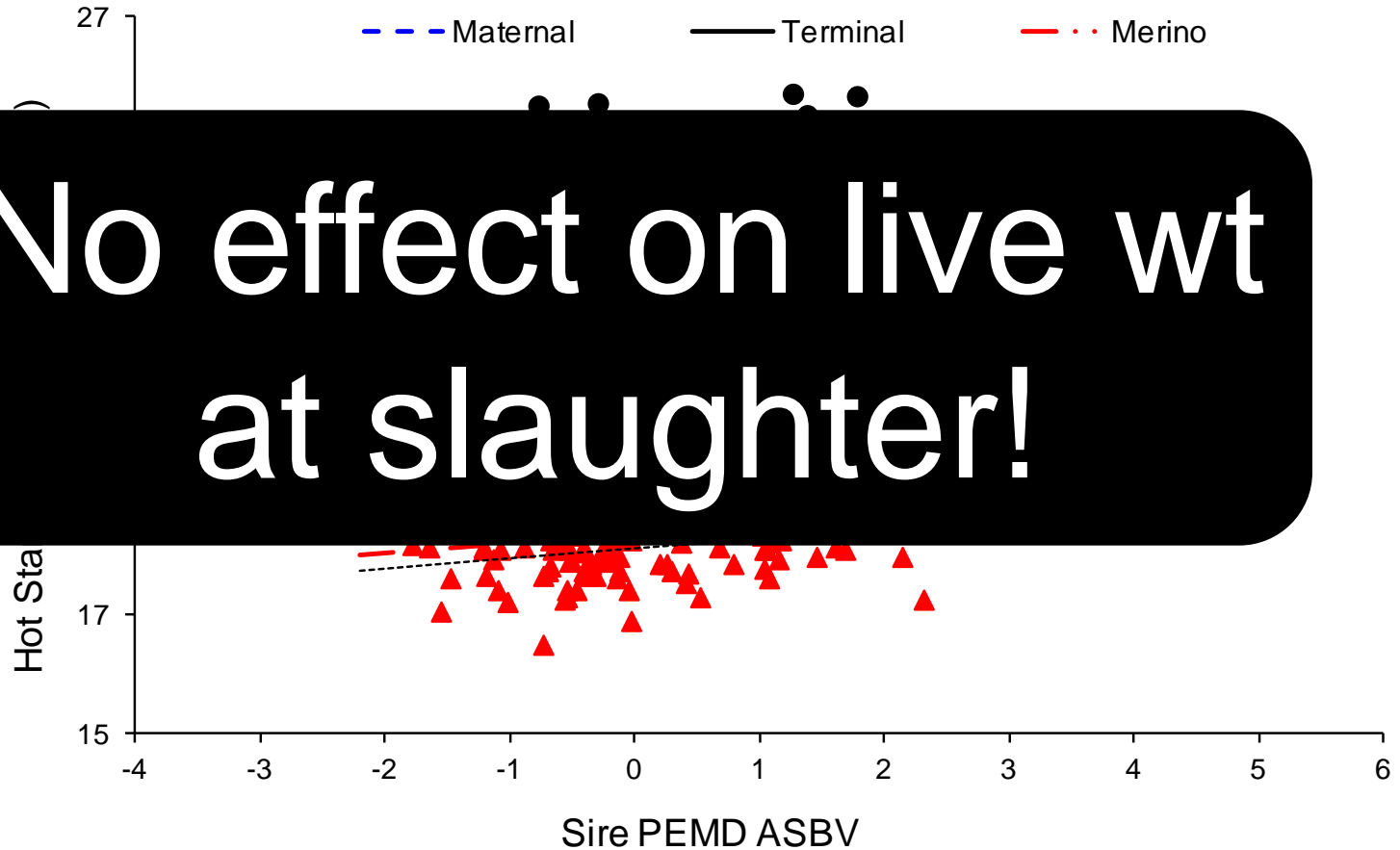


PEMD - They're Heavier!

Carcase Weight

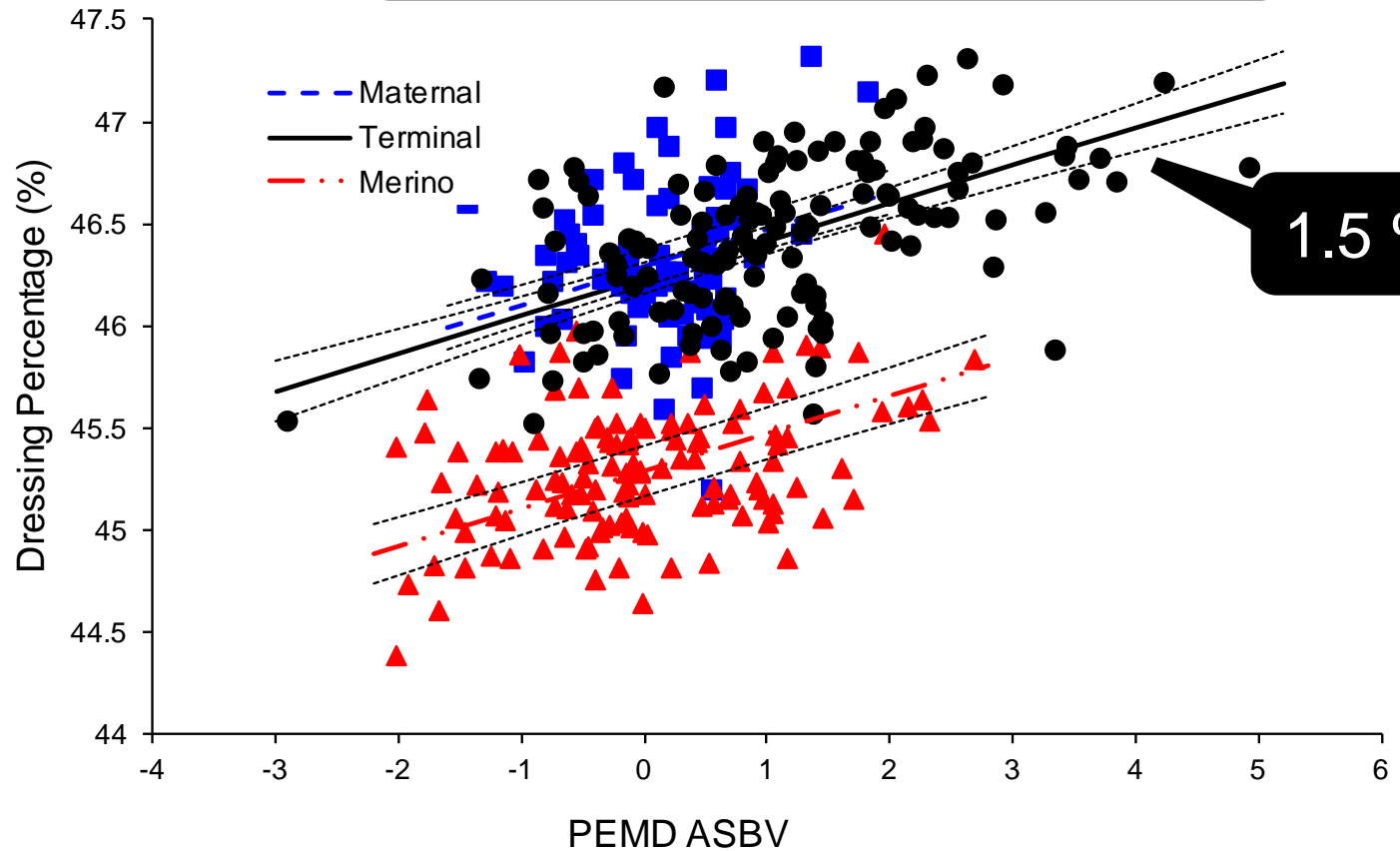


No effect on live wt
at slaughter!



PEMD – effect delivered by dressing%

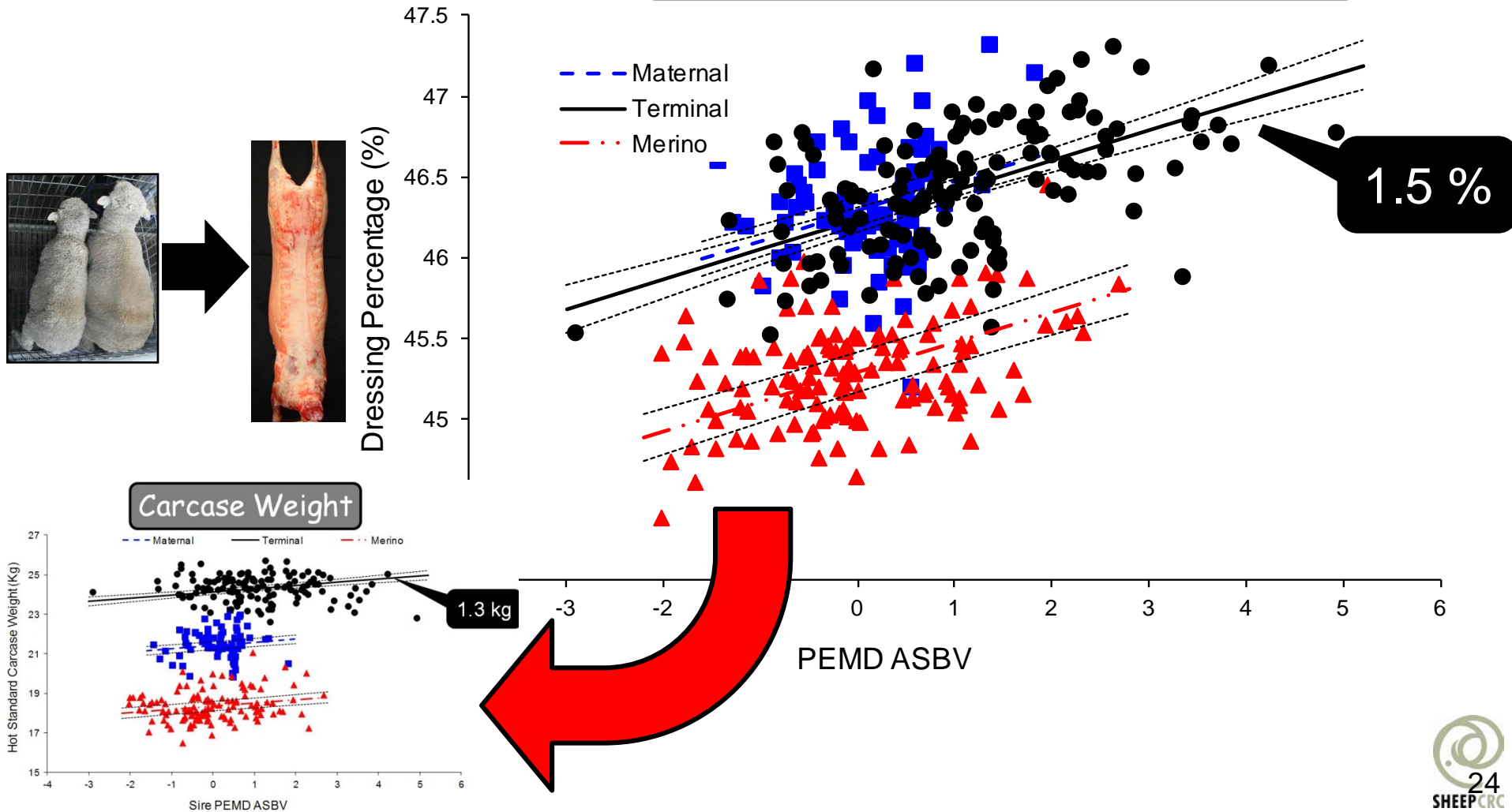
Dressing Percentage



1.5 %

PEMD – effect delivered by dressing%

Dressing Percentage



Hypotheses

Increased dressing% = bigger carcass

- Reduced fat depth (PFAT)
- Eye muscle depth (PEMD)

No effect on carcass wt

Hypotheses

Increased dressing% = bigger carcass

- Reduced fat depth (PFAT)



- ~~Ev~~ muscle depth (PEMD)



No effect on carcass wt

Feed Efficiency

- **Feed efficiency tested in 3 studies**
- **Sire breeding values for carcass traits**
 - **Sire PEMD ASBV -0.5 → +2.2**
- **One negative response**
- **One positive response**
- **One non-response**

Feed Efficiency

- Feed efficiency tested in 3 studies

- **No consistent feed efficiency effect**

- One positive response
- One non-response

Feed Efficiency

But heavier carcass
for same liveweight

=

More feed efficient!

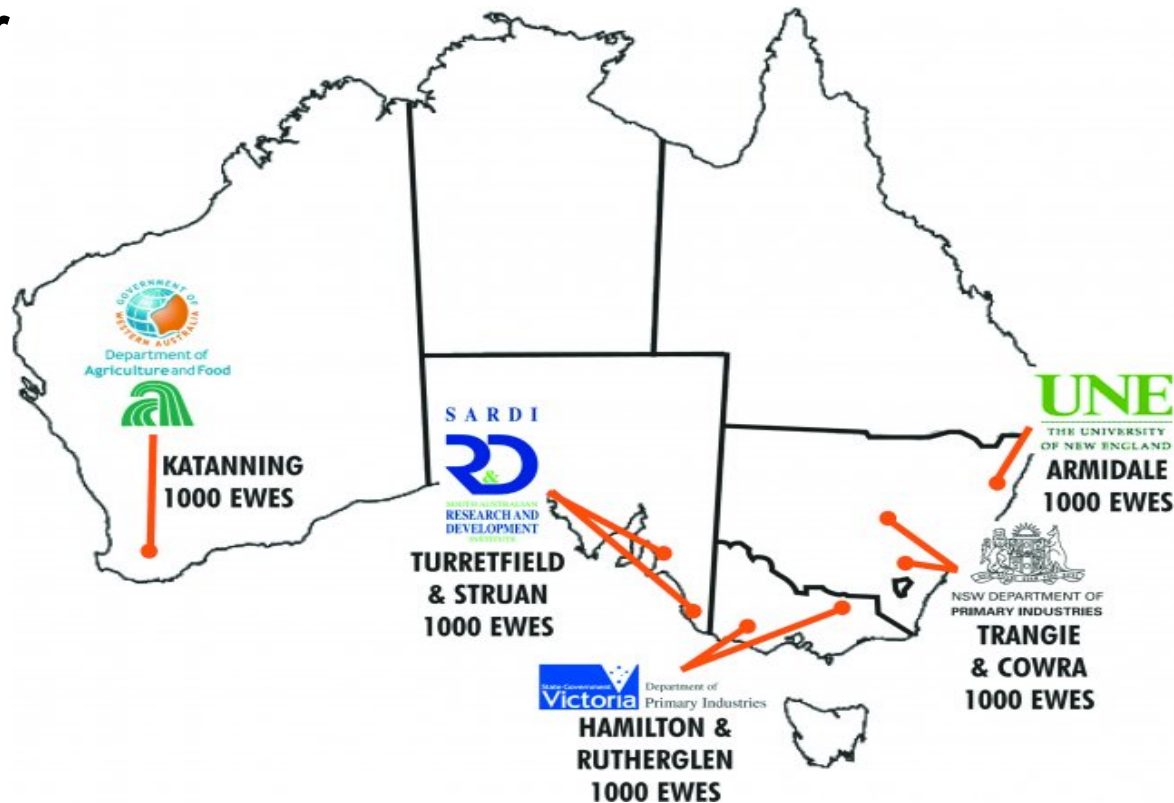
One non-response

Conclusion

- **PFAT = heavier carcass due to impact on liveweight**
- **PEMD = heavier carcass due to impact on dressing percentage**
- **PEMD effect represents efficiency advantage!**

Collaborators

- Andrew Williams
- Liselotte Pannier
- Jason Siddell
- David Pethick
- Alex Ball
- Sue Mortimer
- Kelly Pearce
- Robin Jacob
- James Rowe



PWWT

Carcase Effects

PWWT - They're Heavier!

Carcase Weight

