

NZ Sheep of the Future

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AICLST
18-20th October 2021

The Plan

- Upgrade? Productive Romney with:-
 - Merino = Fine wool
 - Hair/shedding = No-wool
- Aims:
 - Retain productivity of Romney
 - Improve low input and disease
 - Improve fineness of the fleece or
 - Hair or Shedding
 - Heat tolerance / climate adaptation



No-Wool Why?

- Climate adaptation
 - Sub-tropical environment extending south from Northland
 - Heat stress
 - Increase disease risk
 - Facial eczema
 - Internal parasites/diseases
 - External parasites
- Sheep have smaller environ. footprint
- Health & Welfare of rural communities



The Breeds

Goudies Romney

- SIL recorded
- 180% scanning (2tth and MA)
- 120% Hgt ewe scanning
- WWT 27 kg



Shedding/Hair genetics

- Recorded & unrecorded
- Wiltshire, Shire
- Damara
- Dorpers
- Aussie White
- Ultra White
- Exlana
- International breeds
- Shedding sires - Texel
- ...

The Breeds



- Dorper
 - S.A. Arid
 - Now temperate



- Wiltshire
 - UK temperate
 - Also Shire- hair



- Damara
 - Eastern Asia-African - arid
 - Fat-tailed
 - Multi-colour



- Texel
 - UK/Dutch
 - Some shed
 - Temperate

The Breeds



- Exlana
 - UK temperate



- UltraWhite
 - Aussie temperate/arid

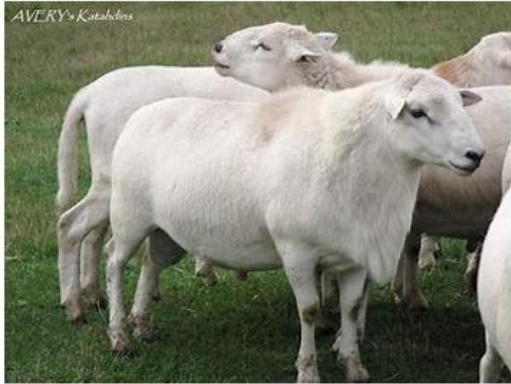


- AusWhite
 - Aussie temperate/arid



- Low Footprint
 - Aussie temperate/arid

The Breeds - new



- Katadhin
 - Subtropical – temperate
 - US/Canada
 - Multi coloured
 - Parasite resistance

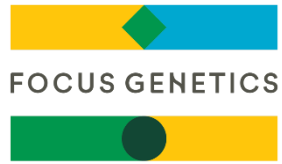


- Barbados black belly
 - Subtropical
 - Caribbean



- St Croix
 - Tropical
 - U.S. Virgin Islands
 - Multi coloured
 - Parasite resistance

- Fiji Fantastic
 - Barbados Blackbelly x Wiltshire/Polish orset
- Mamoe Samoa
 - Fiji Fantastic x black Dorper



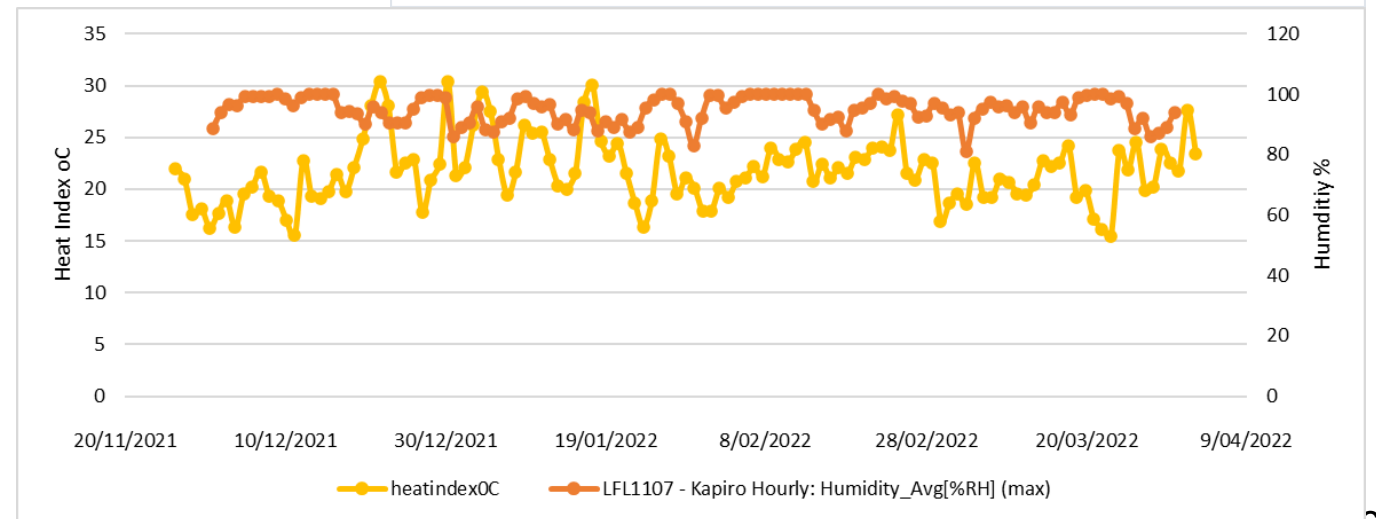
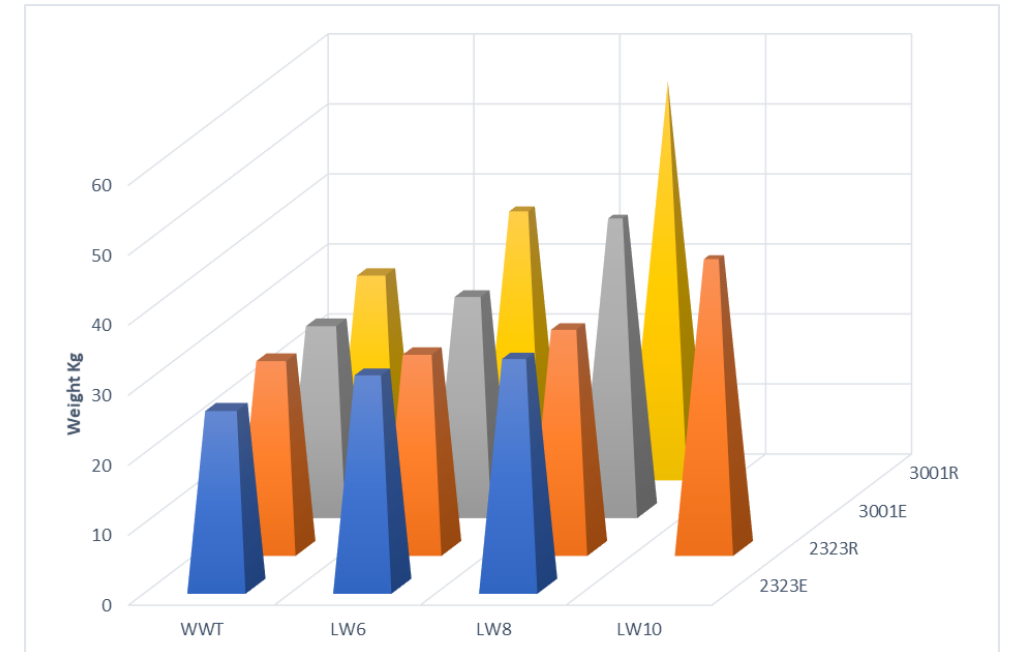
Measurements

Growth traits
Reproduction
Disease
Shedding vs Hair
Low input
Methane
Carcass & Pelts
DNA



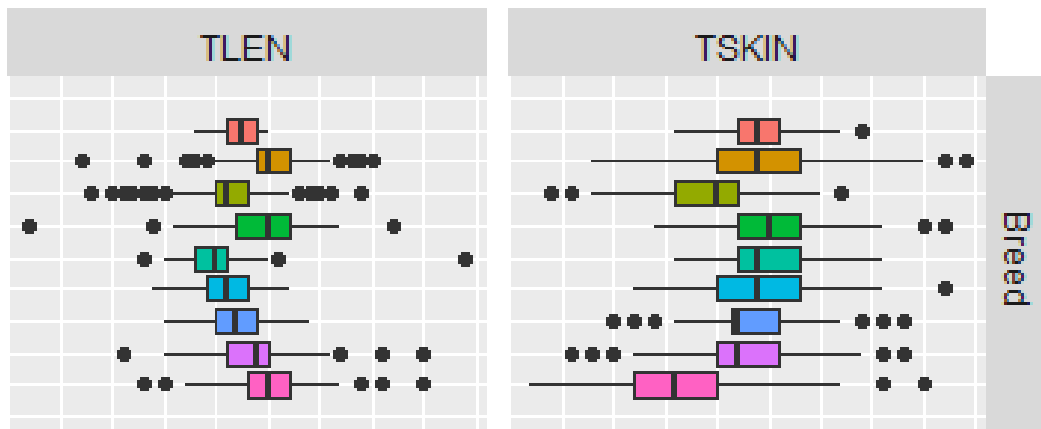
Growth

- Minimal or reduced growth between weaning and early winter
- Due to number of days above ~20oC heat index



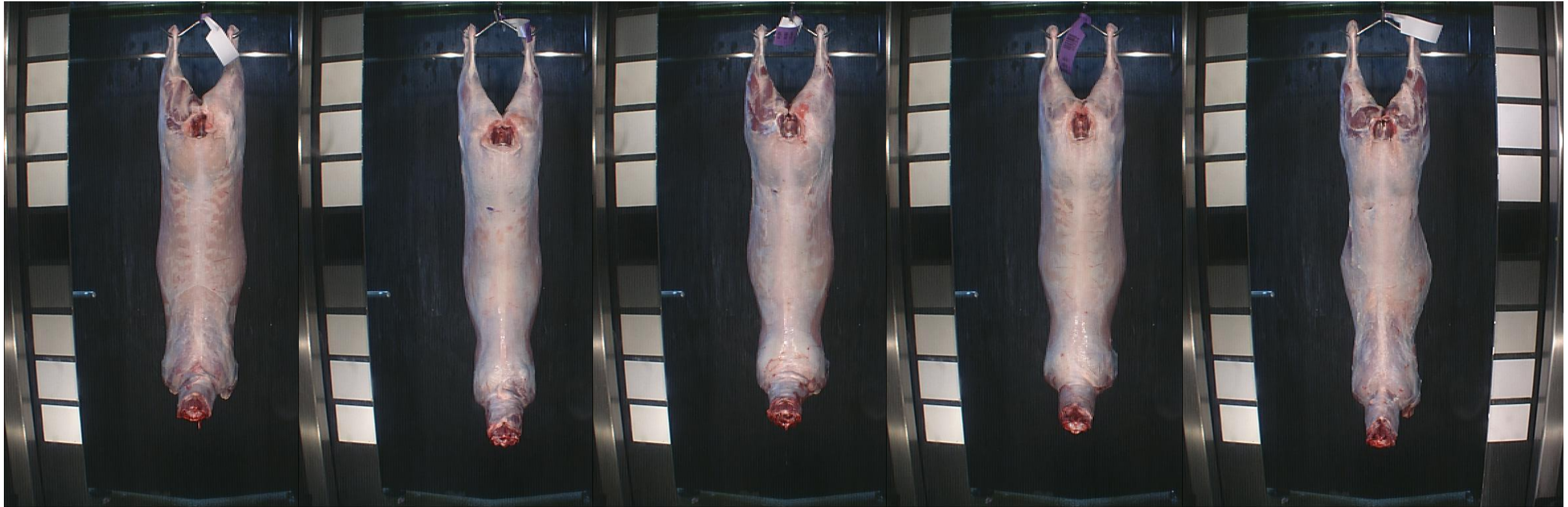
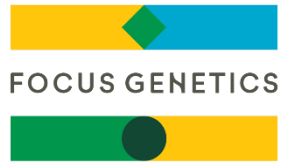
Health Traits

- Dags, fecal accumulation
- Tail length
- Bareness
- WormFEC
- Facial eczema





ViaScan



Dorper,

Damara,

Romney,

Shire,

Wiltshire

5 Sire Breeds - ~18kg

- Fat Tails
- Shorter & Wider
- Longer, narrower & less subcutaneous fat

Residual Feed Intake

- RFI – feed consumed compared to predicted biological requirement
- Heritability of 0.42
- 20% variation between extremes



Methane

- Grazing ruminants are source of 35% of NZ GHG emissions
- Methane also a ~2-10% energy loss to animal
- AgResearch work shows h^2 23% and no significant impact on production traits
- NZ Sheep breeders now able to measure and select for lower methane emissions



Acknowledgements

- AgResearch
 - Tricia Johnson
 - Kathryn McRae
- LASRA
 - Geoff Holmes
 - Sue Cooper
- Alliance Dannevirke
- Craig Foote (Breedtech)
- Pāmu
 - Jim Inglis
 - John Hallgarth (Kaprio)
 - Zoe McCaughan (Kapiro)
 - Jo Triggs (Aratiatia)
 - Angus Irvine
 - Deb Simon
 - Janine Wing
- Focus Genetics
 - Lucy Coleman
 - Suzie Clifford
 - Hine De Clifford
 - Garry Mainland

