



CRC

for

Premium

Quality

Wool

Merino Breeding and Genetics Research: Past to Present

Produced for the CRC for Premium Quality Wool undergraduate program by;
Dr. Brad Crook, The University of New England.



1930's and 1940's

- Skin wrinkles
- Crimp frequency
- Accuracy of visual selection

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1950's and 1960's

- Sheep breed comparisons
- Merino strain and bloodline comparisons
- Stud industry structure
- Parameter estimates & selection experiments
- Inheritance of horns in Merinos
 - development of Poll Merino
- Genetic basis of pigmentation patterns

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Source: Ponzoni (1995)



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1970's

- **Survey of stud breeding practices**
 - rates of adoption of objective measurement
 - ~15% of studs using measurements and only on a small proportion of rams
- **Measurements of skin follicle traits**
 - early-age criteria for wool production potential?
 - not strong enough to be of practical use
- **Nucleus (group) breeding schemes**

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Source: Ponzoni (1995)



1980's

- **Genetic improvement in reproductive rate**
 - discovery of major (Booroola) gene
- **Genetic improvement in disease resistance**
 - fleece rot, flystrike and internal parasites
- **Formal definition of breeding objectives and index-based selection**
- **Establishment of large research (resource) flocks**

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1990's

- **Integration of visual assessment and index selection**
- **Selection experiments**
 - validation of alternative selection strategies / breeding systems
- **Across-flock comparisons:**
 - combined wether trials
 - sire evaluation schemes
- **Personalised breeding services**
 - RAMPOWER Wool Breeding Services
 - Advanced Breeding Services (NSW Ag.)
 - SELECT Breeding Services (CSIRO)

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Source: Ponzoni (1995)