The Genetics Of Fleece Weight And Fibre Diameter: Between-flock variation

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Selecting Between Bloodlines

• 20% range in CFW among bloodlines of average diameter
• >3.0 µm range in MFD among bloodline of average fleece weight.
• Although bloodlines of higher CFW tend to have higher MFD there is excellent potential to simultaneously improve both.

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Source: Coelli et al. (1996)
Depending on the breeding objective a breeder may elect to improve CFW or MFD or both. For example:

- from 212 to 24 = +10% CFW
- from 212 to 117 = -1µm MFD
- from 212 to 134 = +7% CFW and -0.7µm

Source: Coelli et al. (1996)
Simultaneous improvement in CFW and MFD moderates the risk associated with setting breeding objectives based on uncertain future micron premiums.
Bloodline replacement

- grading up to a new bloodline can be slow
  - for example, if a commercial breeder replaced all rams in year 1 and culled the original breeding ewes each year as young ewes enter the breeding flock, by year 10, ewes of breeding age will average about 80% of the new bloodline.

- ideally ewes from the new bloodline should be purchased as well
Other considerations

- genetic progress in current bloodline
- genetic progress in new bloodline(s)
- over last 5 years and into the future
- depending on the cross, breeders should expect an extra 5% in CFW and 3% in body weight in the first cross due to heterosis