CRC for Premium Quality Wool

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

Produced for the CRC for Premium Quality Wool undergraduate program by;
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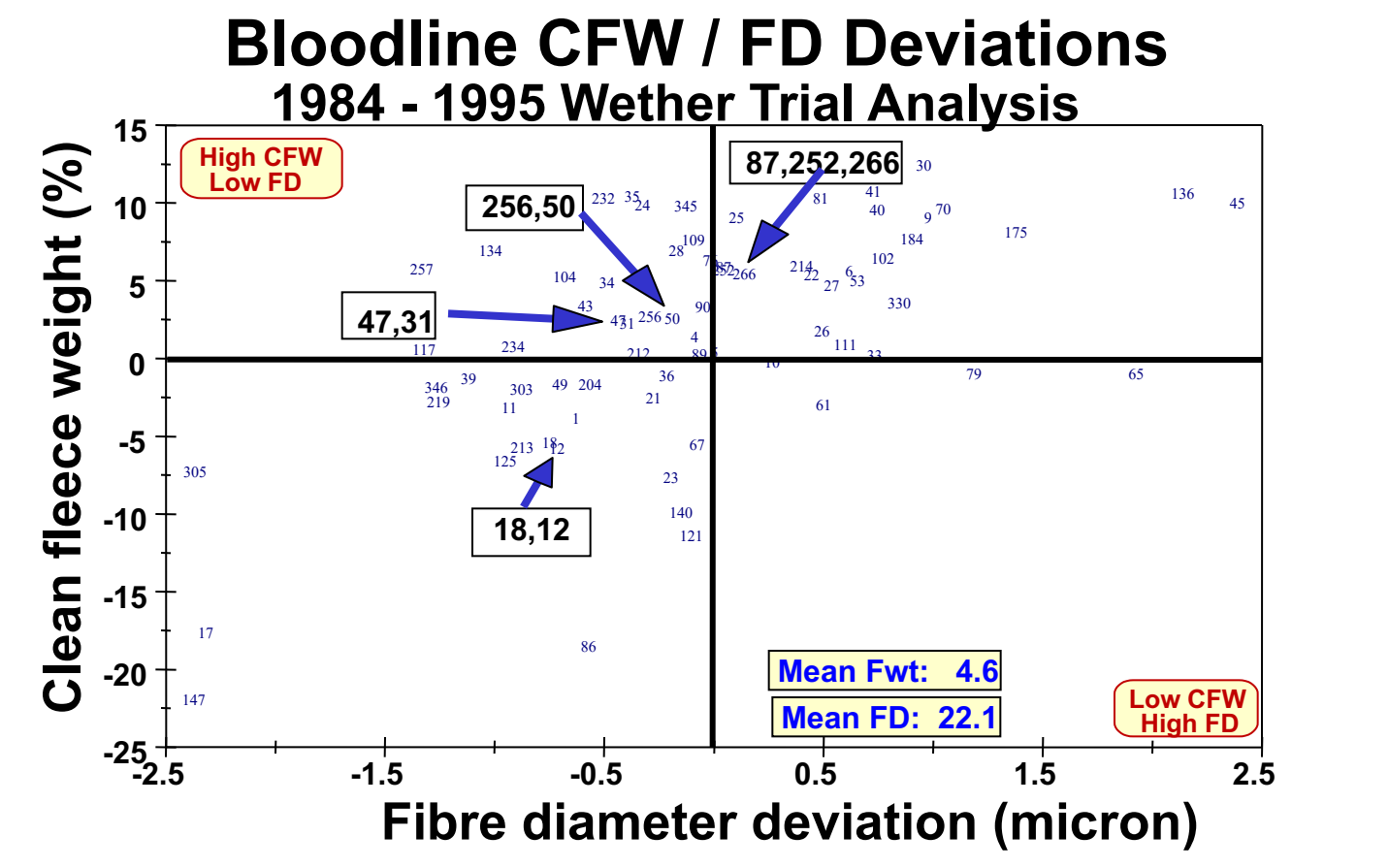
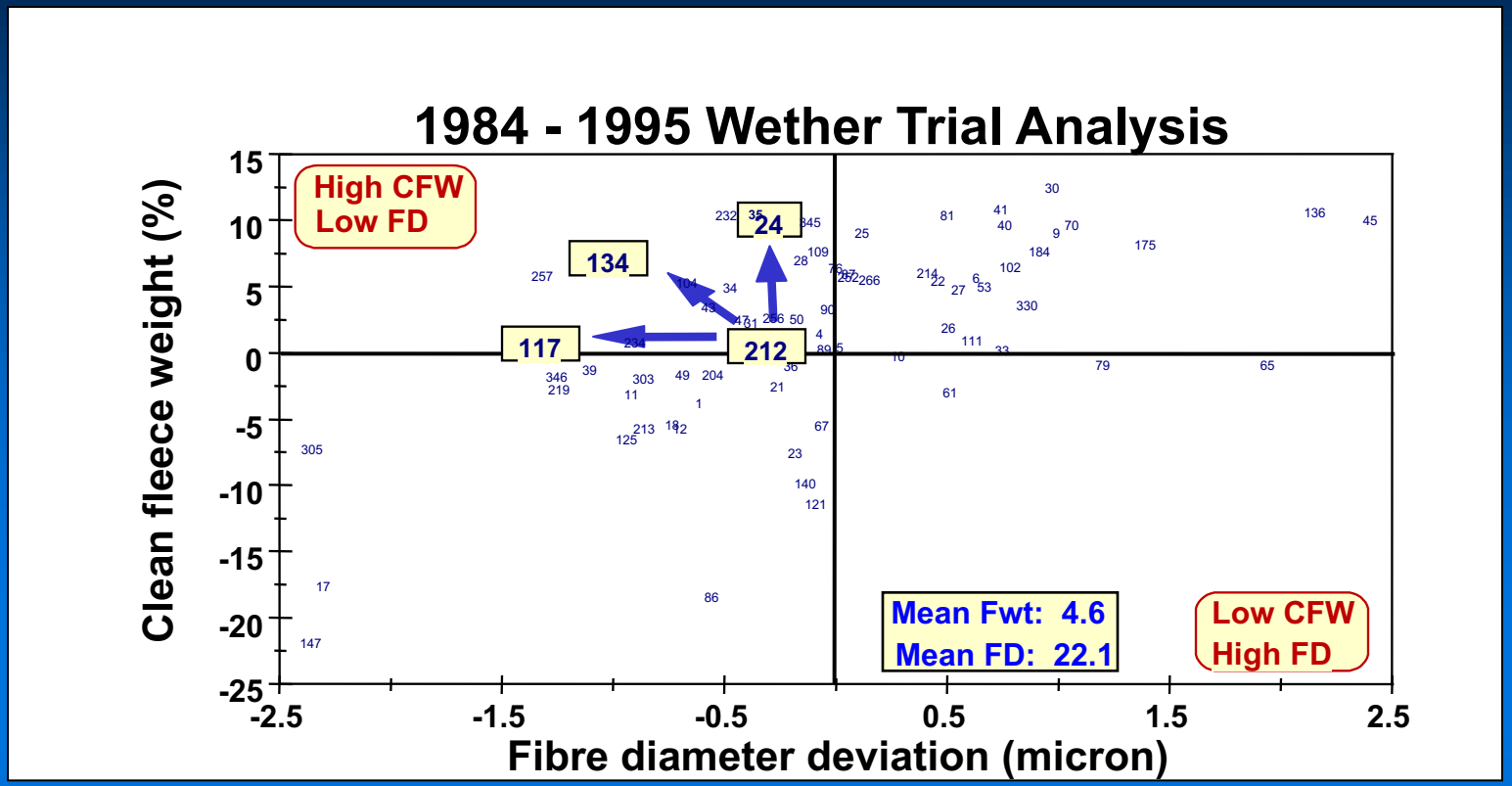
Selecting Between Bloodlines



- 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.

Pat Taylor
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

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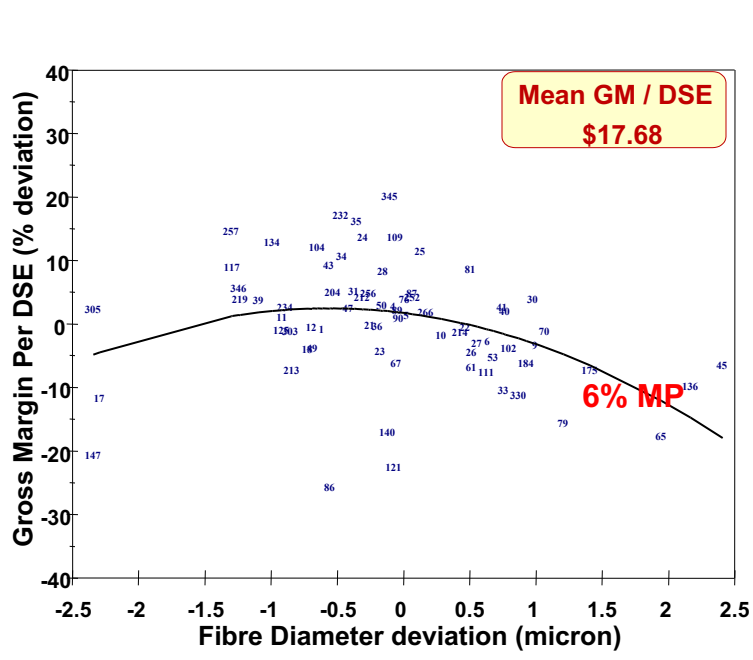
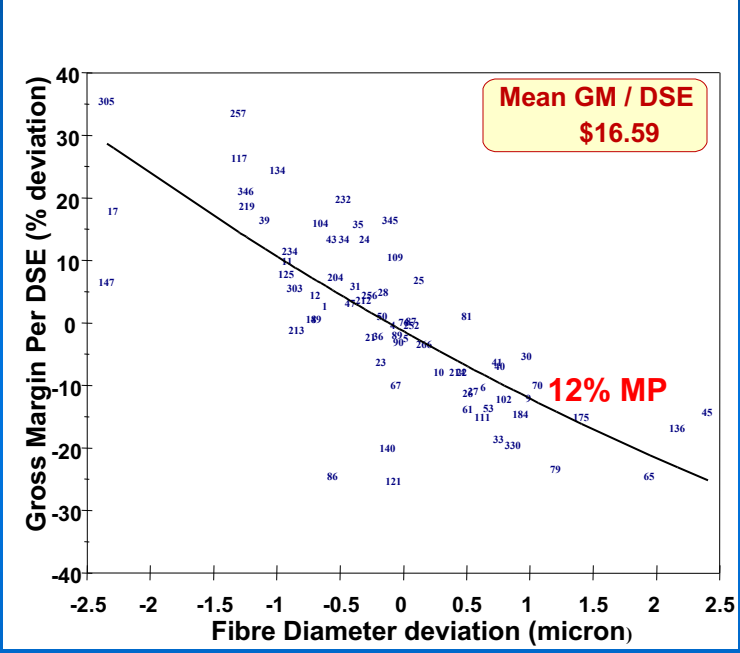
Source: Coelli et al. (1996)

The relative profitability of different bloodlines is very dependent on micron premiums.





- Simultaneous improvement in CFW and MFD moderates the risk associated with setting breeding objectives based on uncertain future micron premiums.

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Source: Coelli et al. (1996)

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

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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

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