

DAIRY SCIENCE 2007

Meeting the challenges for pasture-based dairying

A model for simulating environmental sensitivity differences between dairy cattle breeds in New Zealand

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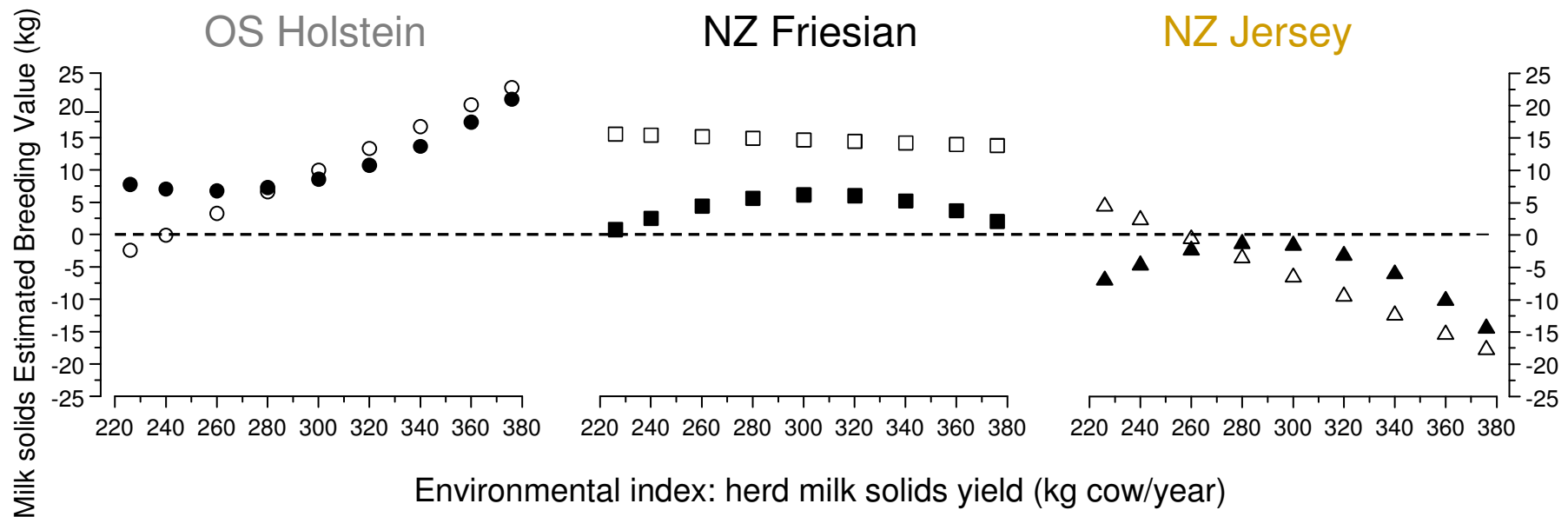


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Environmental sensitivity: *“the degree to which the phenotypic expression of a genotype varies under different environmental conditions”*

Reaction norm: *“phenotype or genotype as a function of an environmental parameter”*





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MOG SIM
Input Output

Animal

Age: 4 yrs

Days in milk: 60

Liveweight: 500 kg

Breed: NZ Friesia

BCS (now): 4.5

Pregnant: No

Estimated Breeding Values

Milk: 750 kg

Fat: 28 kg

Protein: 28 kg

Liveweight: 60 kg

BCS: -0.08

Environment

Pasture

Area grazed: 2 ha/day

Number of cows: 200

Pre-grazing mass: 2800 kg DM/ha

Allowance: 28 kg DM/cow/day

MJME: 11.0 MJME/kg DM

Digestibility: 80 %/kg DM

NDF: 40 %/kg DM

Terrain: Flat-Rolling

Supplement

Allowance: 1 kg DM/cow/day

MJME: 12 MJME/kg DM

Digestibility: 85 %/kg DM

NDF: 40 %/kg DM

Cost: 20 cents/kg DM

Weather

Temperature: 20 deg C Humidity: 70 %

Rainfall: 0 mm/day Wind: 0 km/hr

Predict Performance

Developed by Jeremy Bryant and Nicolas Lopez-Villalobos

