

Prediction of Breeding Values

Recap: Simple scenario: Own Performance records
(Eigenleistung)

- Every animal i has one observation (y_i) of a phenotypic value of a trait of interest
↳ (birth weight, mastitis resistance, fertility, ...)

Animals	Observations y_i (numbers)
1	$y_1 = 52$
2	$y_2 = 48$
...	...
N	...

- Predicted breeding value \hat{u}_i of animal i

$$\hat{u}_i = h^2(y_i - \mu)$$

where h^2 : heritability of trait

μ : population mean

- Predictions (\hat{u}_i) are associated with errors:

Quantification of prediction error: accuracy $r_{u,y}$

Reliability $r_{u,y}^2 \rightarrow B\%$ (Bestimmtheitsmass)