

Accuracy of predicted breeding values is also important when quantifying the response to selection (R)

$$R = i \cdot r_{uy} \cdot \bar{y}_y = i \cdot h^2 \cdot \bar{y}_y \rightarrow \text{phenotypic standard deviation}$$

i : selection intensity
 r_{uy} : selection response per generation
 \bar{y}_y : own performance

Breeders Equation

Repeated Records

□ More than one observation per animal

Animal i	Observation 1	Observation 2	...	Observation k	Mean
1	$y_{11} = 152$	$y_{12} = 181$...	$y_{1k} = 515$	$\frac{\sum_{j=1}^k y_{ij}}{k}$
2					
...					
N					

$$\bar{y}_i = \frac{1}{k} \sum_{j=1}^k y_{ij} \quad \text{mean}$$

Animal i	\bar{y}_i
1	$y_{11}, y_{12}, \dots, y_{1k}$
2	
...	
N	