Recap.   2023-11-10

☐ Central topic :

    Use linear mixed effects (LME) to
    predict breeding values

☐ Why LME :

    Because breeding values of related individuals
    are correlated, for animals i and j sharing
    some common ancestor, we have

    $cov(u_i, u_j) \neq \emptyset$

☐ LME : In matrix-vector notation

$$y = X\beta + Zu + e$$

→ unknown vector of random residuals

known vector of observations

unknown vector of fixed effects (herd, sex, breed,..) or covariates such as <u>breast circumference</u>

unknown vector of random breeding values

Matrices : X, Z known design matrices