BLUP AND REML

Problems

4-1. Formulate the equations of five data from two cows with a mixed model with effects of farm and season for milk production, and three lactations per cow at most. Include a male, father of the two cows. Heritability of milk production, 0.4.

4-2. State the equations of the mixed model in the previous problem.

Self-assessment questions (True or False)

1. The true value of a fixed effect does not change in the conceptual repetitions of an experiment, but the true value of a random effect is different in each repetition.

2. BLUP predictions are not affected by using data under a selection process, but only if they are calculated with all the data used in the selection and with the complete relationship matrix.

3. The maximum likelihood method is the one that maximizes the probability of obtaining the sample.

4. The maximum likelihood method is the one that obtains a value that, if it were the true value, would result in the sample being the most probable.

5. A genetic trend estimates the response to selection.

6. To calculate genetic trends and estimate responses to selection, a control population is required.

7. BLUP is the best of all selection methods.

8. BLUP is the best among the linear unbiased predictions.

9. To apply BLUP, the data must be Normally distributed.

10. BLUP maximizes the response to selection, but only if the genetic parameters used are the true ones.