Mixed Survival Models applied on Genetic Longevity Studies

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Abstract

Longevity is an important trait often considered in animal breeding programs. Even small changes in the longevity of a population under production might have remarkable economic, welfare and ethics consequences . Since the study of longevity involves several types of incomplete observation (e.g. censoring, truncation, late entry and competing risks), survival and event-history-analysis techniques are typically used. However, the use of those techniques in the context of quantitative genetics of longevity involves several non-trivial challenges. It will presented a class of multivariate mixed survival models for continuous and discrete time with a complex covariance structure introduced in a context of quantitative genetic applications. Some real data problems will be presented to motivate and exemplify the methods.

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