

混合家系遗传参数估计方法研究

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摘要 针对混合家系遗传参数估计, 本文在假定公畜方差组分和母畜方差组分相等这一理论基础上, 通过对方差分析的期望均方组成分析, 提出了新的遗传力的估计方法, 以及某些特殊情况下的近似估计方法。通过一个估计实例比较了几种遗传力估计方法, 结果表明, 本文方法与全同胞组分估计最为接近, 而且遗传力标准误最小, 本文近似估计方法的效果也较好。对各种方法而言, 资料越不平衡其差异越大。本文方法可以在一定程度上弥补全同胞分析时, 因实际资料的公母畜方差组分差异过大的缺陷, 具有实际可行性。此外, 由于本文方法是用单因方差分析解决二因方差分析问题, 计算更为简便, 并可免于计算混合家系平均亲缘相关系数。

关键词 [混合家系,方差分析,遗传参数估计](#)

分类号

Study on the Estimation Methods of Genetic Parameters with Mixed Family

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Abstract

By theoretically supposing the male variance component be equal to the female variance component,a new method and an approximate estimation method of heritability are suggested on the basis of decomposing the expected mean squares in variance analysis with mixed families.Seven estimation methods of heritability are compared by an actual estimation example.The results indicate that the difference of the estimation value between full-sib analysis method and the method suggested in this paper is the smallest and the standard error of estimated heritability by the latter method is the smallest among the seven methods.Also the approximate method is effective.For all methods,the more disequilibrium of the data,the bigger difference of the estimate value by those methods.The new method can be used when the difference of variance components between male and female is relatively large with full-sib analysis in actual estimation.Moreover,the new method is easily calculated because the two-way classification data was analyzed by one-way classification variance analysis and the average relationship coefficient among mixed families may not need to be calculated.

Key words [Mixed family](#) [Estimation of genetic parameters](#) [Variance analysis](#)

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