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Confidence Intervals for the Common Variance of Correlated Normal Random Variables.

The commonly used formulas for the pooling of variance estimates are based on the assumption that the samples are independent. Many practical problems do not fit this model. For example, corn seed planted by a farmer in the Midwest may be assumed to yield bushels of corn according to Normal Distribution. If we example samples taken from a variety of farms which use the same seed, then there would be correlations among the yields. Estimation of the variance based upon all of the samples taken is complicated by these nuisance parameters; especially in small sample cases. My talk will focus on methods for estimating the common variance among "Correlated Normal Random Variables" in small sample cases. Further, we will examine confidence intervals for the variance which are efficient in terms of length and coverage probability. (Received October 02, 2000)