

## **STABILITY ANALYSIS: PROS AND CONS**

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### **Abstract**

There are nearly a dozen methods to measure stability. Most cannot be combined with mean yield to produce one number. The majority of stability measures are dependent on the entries in the trials. Studies have shown that most stability measures are not repeatable or heritable; mean yield normally is more repeatable. Based on several studies, it appears that one would need at least 20 environments before stability measures become repeatable. Two measures that combine a stability estimate with mean yield are the superiority measure and the lower confidence limit. The superiority measure identifies entries that consistently yield the highest in all environments. The lower confidence limit is familiar to most scientists and is easily calculated. The alpha level chosen is critical. I advocate choosing 0.20 to 0.40, preferably the latter. Both superiority measure and lower confidence limit are heritable given sufficient number of environments, i.e. over 20. One should only examine mean yield if the data set includes less than 20 environments.