

Weighted linear joint regression analysis

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Abstract

The introduction of weights in the phenotypic trait (e.g. yield) for different genotypes in different environments enables us to generalize the joint regression analysis (JRA) [1, 2], for the case when the error variance is not homogeneous across environments. Moreover it is possible to use incomplete blocks, while the environments are "better" represented accordingly to the accuracy in the measurements.

To fit the regressions for the weighted linear JRA, an algorithm is derived to minimize the sum of sums of weighted residuals [3, 4]. An application with data sets from spring barley (*Hordeum vulgare* L.) breeding programme carried out in Czech Republic is presented and the results are compared with the standard JRA.

Keywords

Joint regression analysis, Incomplete blocks, Randomized blocks, Environmental indexes.

References

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