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Conference Abstract

How to make a meta-analyst happy – what to report in your studies and how

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Abstract

Meta-analysis represents an approach of synthesizing many independent data sets, and is useful in situations when abundant literature provides no conclusive evidence. Besides the quality of the research itself, the value of an individual study for meta-analysis depends to the large extent also on the quality of data presentation. The literature based on carabid beetles (Coleoptera: Carabidae) as the study is enormous, therefore there is a great potential for the use in meta-analyses. In this paper I put together some notes which arose during my work on meta-analysis focused on the effects of field and crop management on populations of carabid beetles inside the crop fields of Europe and America north of Mexico. The aim of this contribution is to provide a set of recommendations which may potentially improve the use of each individual paper in future meta-analyses, and thus increase the impact of the original paper as well as the generality of conclusions drawn from future meta-analyses, hence based on larger sample size.

1. Be accurate in describing the treatments. For example, “low” and “high intensity of management” is not enough.
2. Mention also details that are constant across treatments, but may still provide useful information. E.g. “practice usual for the area” is not enough.
3. Be precise with describing spatio-temporal structure in the study. Provide redundant information so everyone can check if he/she understood well the hierarchy of the experiment and the number of replications associated with each stratum. A scheme may be useful.

4. Report the grand totals as well as treatment totals for both “abundance” and species richness. Text, tables or supplementary materials is preferred.
5. If using mean values, always make it clear what is the number of replicates and provide standard errors. But, remember that total or treatment species richness cannot be reconstructed from the mean! Be explicit in stating what the means represent, also in figures. Expressions like “Mean abundance” are not enough.
6. Provide species lists with the greatest resolution possible. Most journals allow for supplementary materials where this information can be provided.
7. Remember that data can also be extracted from figures. Provide high resolution and accurate figures. For example, large data points on a line make data extraction difficult.

With little extra effort during the preparation phase, the impact of your paper and the use of your data may considerably increase in the future.

Presenting author

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