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Biogeosciences Discussions

Interactive comment on "Effect of ocean acidification on marine fish sperm (Baltic cod: *Gadus morhua*)" *by* A. Y. Frommel et al.

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Page 5863, line 8. The wording here is a bit awkward. Perhaps "no difference among treatments" would be clearer.

Was changed as suggested.

Page 5863, line 18. "in controls" is repeated in this sentence.

Thank you, changed as suggested.

Page 5863, line 20. You mention 20 males here, but N=18 males at line 4.

There were only 18 males and in the word version there is no 20 before males. I think the line number slipped over into the text. It will be removed.

Results: Because replicate sperm samples from each male are not entirely independent it would be better to analyse this as a repeated measures ANOVA, or with males as a blocking factor, if possible. This is simply a technical issue and I have no doubt that the results are entirely robust.

Males were used as a blocking factor in the ANOVA.

Results: Was there a relationship between male size and sperm swimming speed or mortality? If so, ANCOVA or analysis of regression residuals in ANOVA could be used to account for some of the variation.

The effect of length and weight of the males on both sperm swimming speed and motility were tested and yielded no difference. A sentence regarding this result was added to the manuscript.

Discussion: You argue that the effects size analysis presented in the Discussion is the appropriate statistical test. If so, you should simply present that as the main analysis in the Results.

We do not argue that analysis of effect sizes is the appropriate statistical test, but rather that such analysis yields valuable insight on the likelihood of the null-hypothesis (Page 5864, lines 7-10). Presenting both classical ANOVA analysis and effect size analysis maximises comparability with older studies, and potential for inclusion in future meta-analyses.

Interactive comment on Biogeosciences Discuss., 7, 5859, 2010.