Re: Randomized block design

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From: Anon. (*bob.ohara_at_NOSPAM.helsinki.fi*)
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Veronique wrote:
> *Hello,*
> *
> I'm a PhD−student and I have some trouble with the experimental*
> *(cage−experiments) design of my project.*
> *I use a randomized block design with 4 treatments and a control. For*
> *each treatment and the control, I use 3 replicates. The treatments*
> *are:*
> *− Ulva present/predation present*
> *− Ulva present/predation absent*
> *− Ulva absent/predation present*
> *− Ulva absent/predation absent*
> *The experiment is conducted during one year and a sample is taken each*
> *month in every experimental unit.*
> *Now I want to know how I can analyse the results. I want to detect the*
> *effect of Ulva present/absent, the effect of predation present/absent*
> *and the interaction between Ulva present/absent and predation*
> *present/absent. Time is also importent, so I want to know the*
> *interaction between time and Ulva present/absent and the interaction*
> *between time and predation present/absent.*
> *I hope somebody can help me to find a correct statistical analyse*

As nobody has replied, I'll leap in. Firstly, what is the control?
It's not clear to me what it would be.

You have the design set out: a full model will have the interaction between Time, Ulva and Predation. The analysis will be an ANOVA, or something like it.

The precise analysis will depend on what the response is: the one thing you forgot to tell us!

There are a number of good books for biologists on statistical analysis: one book that would be relevant would be "Modern Statistics for Life Scientists" by Alan Grafen and Rosie Hails.

Incidentally, the first thing to do is to plot the data: it usually gives a good indication about the main trends in the data. Plot things

like the response against time for all cages, with the different treatments in different colours.

My other advice would be to see if your university has a statistical consulting service that you could go and see: it's always better if you can have an in−depth discussion, and show your data.

Bob

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