How to Give a Good Scientific Seminar: Does, Don'ts and Strategy

Content:

1) The audience
2) The time limit
3) Type of talk
4) Getting your Point Across
5) Structure of the Talk
6) Title
7) Introduction
8) Materials and Methods
9) Equations
10) Results
    a) Figures: The good, the bad, and the ugly
    b) Tables
11) Summary/Conclusion/Discussion

1) The audience

A key issue.

- Plan your talk to the level of your audience.

It makes no sense to present a complex topic or issue at your level of understanding. You may be the only one who understands it.

e.g. $[\omega^2 - gk \tanh k (h_1+h_2)]$

To a group of arts students.
They will get nothing from it!!!

Gear the presentation to their level of understanding!!!

2) The time limit.

-Short talks (10-15) have a different strategy from long talks (45 min-1hr) judge your content accordingly.

- Assume 1 to 2 minutes per overhead depending on complexity.

e.g.
-10 Minute talk. One brief methods slide or I followed the procedure outlined in Smith and Wesson 1876. Focus on the take home message and the data to support it

- 1 hour talk, Lots of time for detail, discuss the methods in detail **if** they differ from standard protocols.

3) Type of talk

- Results of an experiment
- Program results
- Review of an area

All have different strategies and goals but many similarities in structure.

4) Getting your Point Across

Key Points:

Your audience. First and most important!!! **They have a limited attention span** i.e. they phase in and out of the presentation. Attention span is actually quite short 10-20 seconds.
So how do you keep them with you?

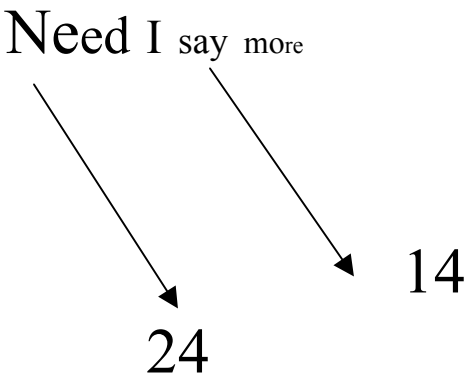
a) **simple clear slides** that they can read easily and get back in touch with the presentation.
b) **Use colors** to highlight key points don't overdo it.
c) **Change you voice level** as much as possible, monotone puts you to sleep.

d) **The best.** Get them involved. Plan your talk to end early and invite them to ask questions as you go along.

e) **Ask them questions**.. Or at least challenge them to think about the issue. E.g. If this worked this way then we would expect this result **But** we got this!"!!
Why??
then explain

f) **Talk to them**, not the overhead, or the computer.

g) Font size



h) Nerves. We all have them!! How do we control them??

- Practice the talk 4 to 10 times more than that and you become too rehearsed.
- Memorize your intial comments after being introduced.
- 1 hour before take a quick look at the talk.

- ½ hr before, think about something else.

- When you start focus on a friendly face in the group. Talk to them at the start.

i) Gloss vs Content!! A key issue.

- Many speakers forget that the content is the important issue not how nice a presentation is. Don't waste time making it too flashy!!!

- Quite often flashy presentations hide the fact that there is **NO** content

This is difficult to read

This is also difficult to read, but not as bad

This is clear

This is difficult to read

5) Structure of the Talk

Typically presentations are broken up into a number of subcomponents the detail dependent upon;

- Duration of talk
- Type of talk

The subcomponents are

a) Introduction
b) Materials and Methods
c) Results
d) Conclusions

6) Title

Keep it simple and catchy, you want people to come!!

e.g. Fisheries Management, Similarities with the Emperor's New Clothes?

Is their a link between food quality and population dynamics? Evidence from the plankton.

7) Introduction

This is a common feature to all types of presentations and is the most common area where presentations fail!!!

Here you have to;

a) Give the background to why this wonderful piece of work was done!! Ecological implications!!

b) What key issues/hypotheses did you test!!

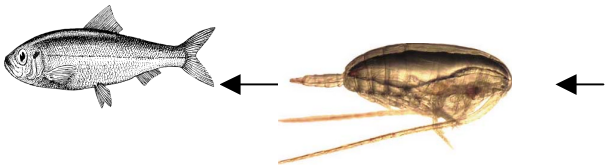
c) How will these findings change our way of viewing a concept?

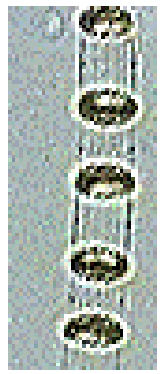
d) How are you going to resolve the issue.
In an overhead outline the structure of the talk
e.g.
Based on the results of experiments on
1) The feeding behavior of elephants
2) The predatory behavior of mice

I will .... **Test the hypothesis** that ....

You are setting the stage and convincing the audience that you are doing something significant!!! Something they need to pay attention to!!

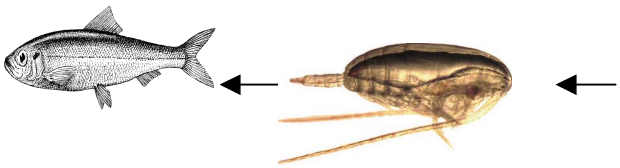
Food Web Tracer Lipids

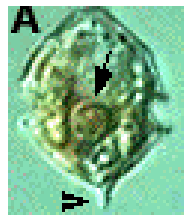




Diatom based Food Web

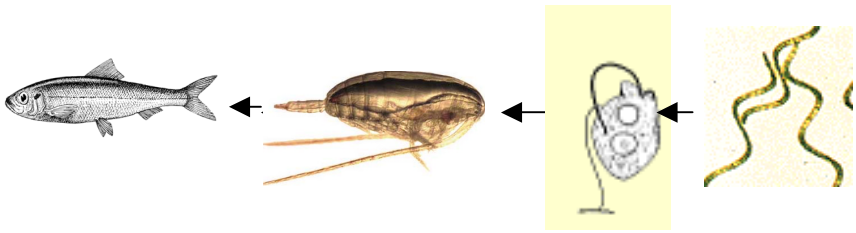
- High C16:1ω7**:**C16:0
- High in C20:5ω3
- Low in C18:4ω3
- High C20:5ω3**:**C18:4ω3





Flagellate based Food Web

- Low C16:1ω7**:**C16:0
- Low in C20:5ω3
- High in C18:4ω3
- Low C20:5ω3**:**C18:4ω3



Bacterial Tracers

- High in C15 &C17

8) Materials and Methods

Approaches differ for

a) Experimental Research

- either a point form version of a research article (long talk)
- or a simple followed the methods of.. in a short talk

In both cases use flow diagrams where possible to clarify complex issues.

A picture is worth a thousand words!!

A) Reviews

- Typically the methods used to generate each figure are discussed briefly at the time of presentation of the figure.

B) Description of a Research Program

Generally no detailed descriptions of methods are given rather

- a structure of the program

- key results with brief methods given as each result is presented.

9) Equations

They quite often turn off a non mathematical audience

$[\omega^2 - gk \tanh k (h_1+h_2)]$

- Use them only where necessary.

- A conceptual model may be simpler. Again show a picture

- If you have to use them explain clearly every variable.

10) Figures: The good, the bad, and the ugly

Tips:

a) Keep them simple and clear.

b) Always describe the variables and how they were measured.

c) Use charactures to highlight the key points or concepts.

d) Always show regression statistics!!!

e) Use colour in graphs with multiple relationships

f) Limit relationships to 3 per graph, better to show two graphs than confuse the listener

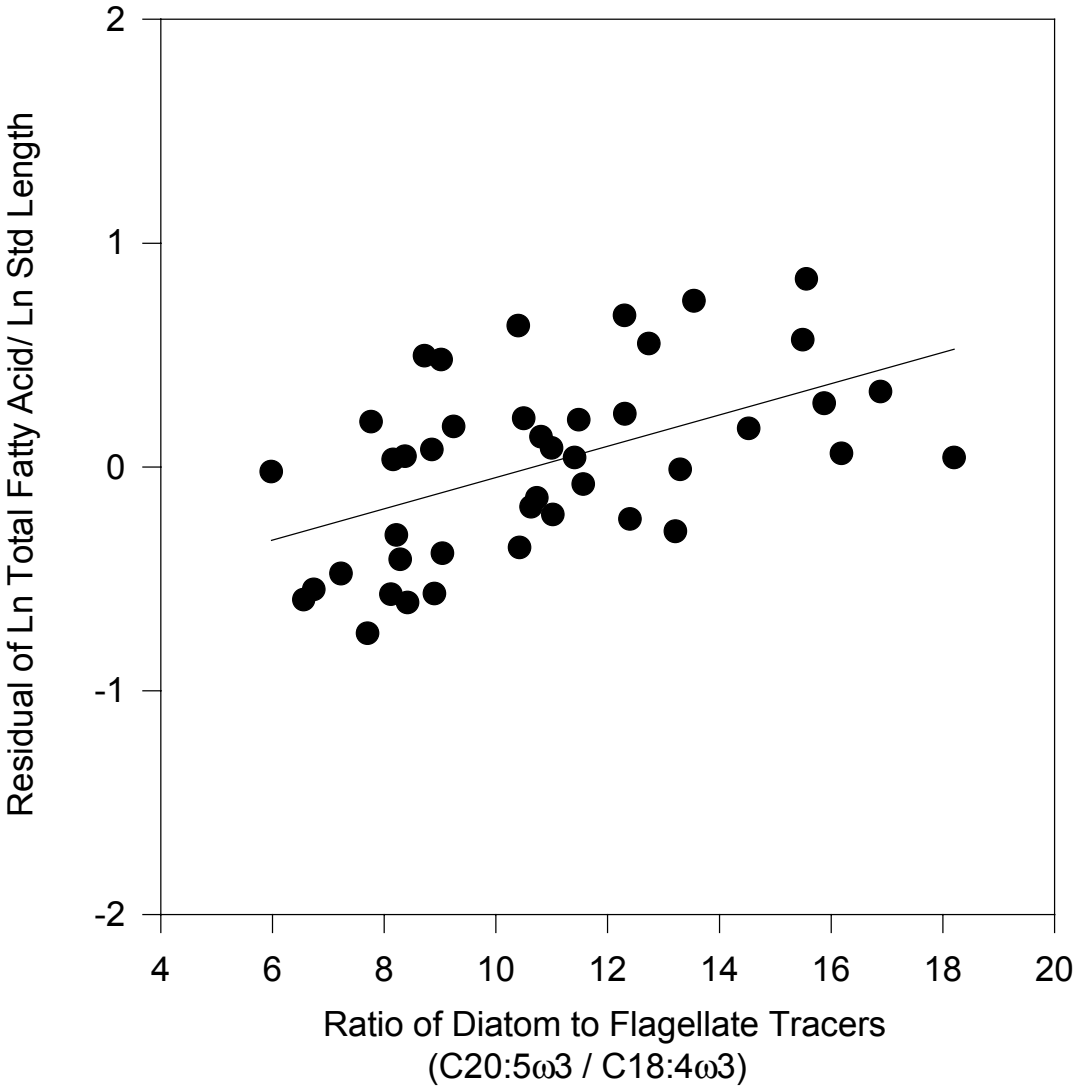
ALWAYS !!!!!

State the significance of the relationship shown and why it is so important to the issue you are examining.

Reinforce!!!
Be excited about the result.

Condition of Juvenile North Sea Haddock Relative to Lipid Composition

Diatom to Flagellate



Condition of Juvenile North Sea Haddock Relative to Lipid Composition

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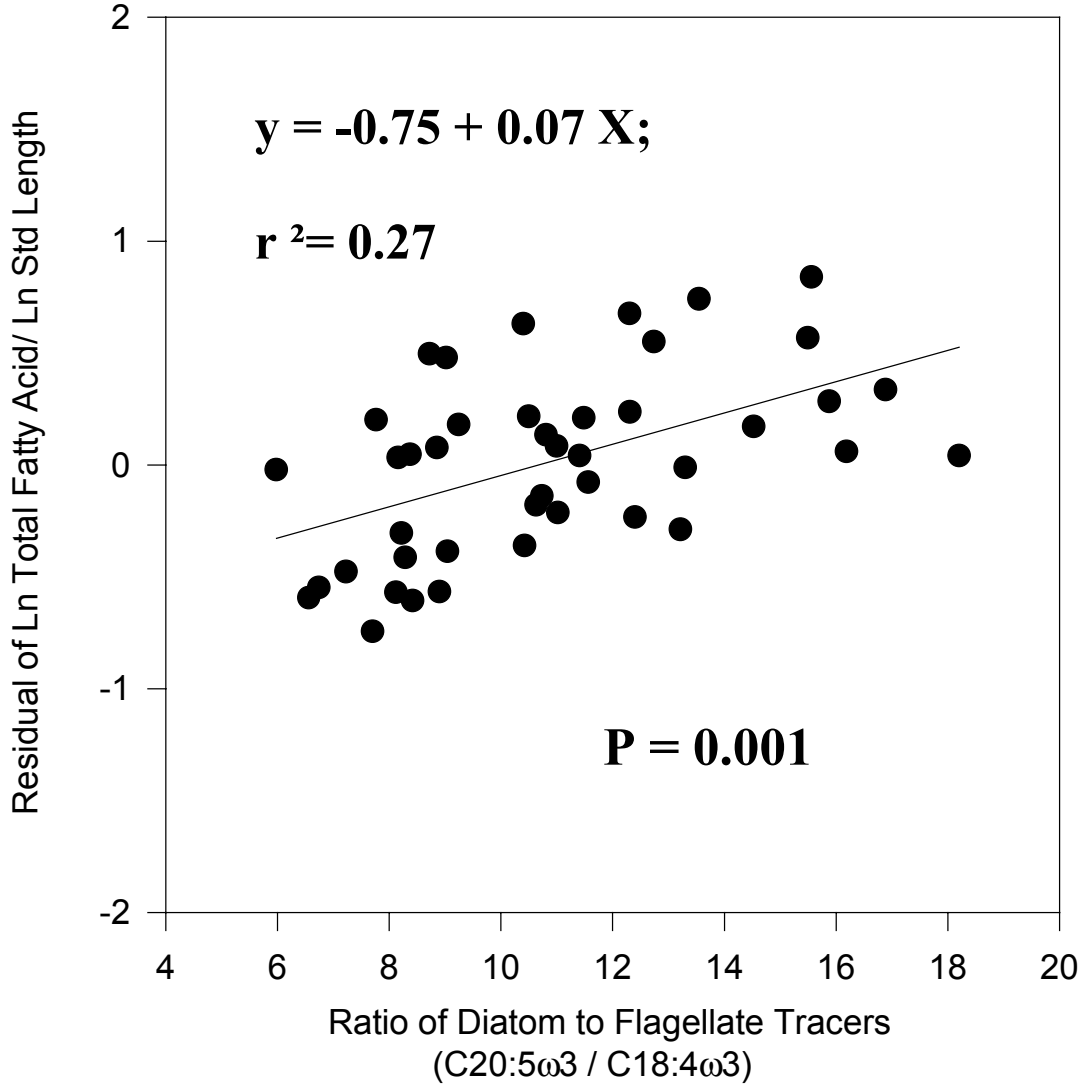
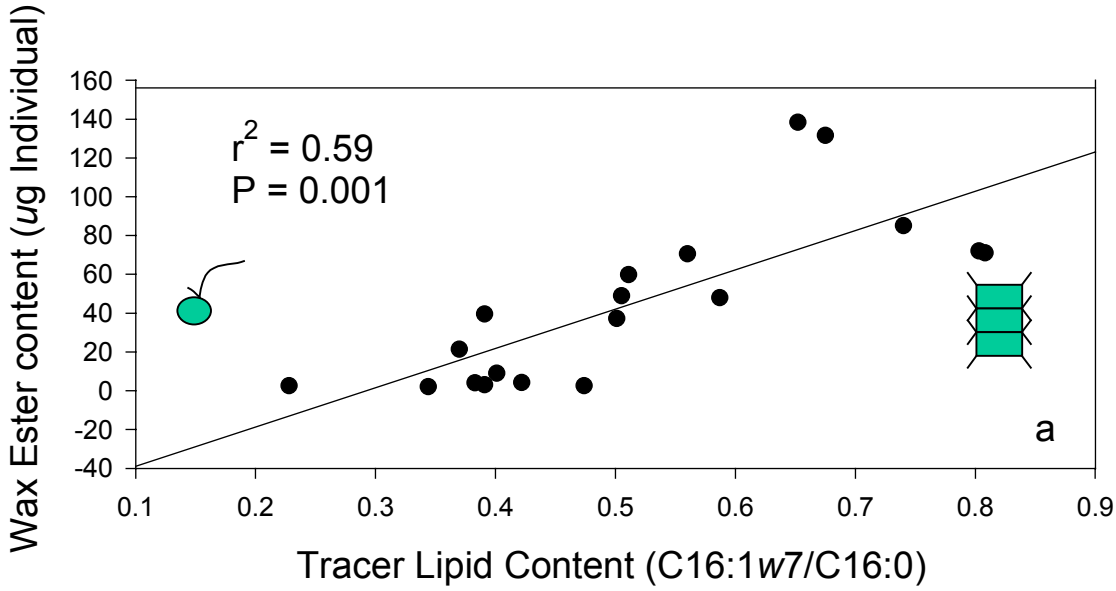
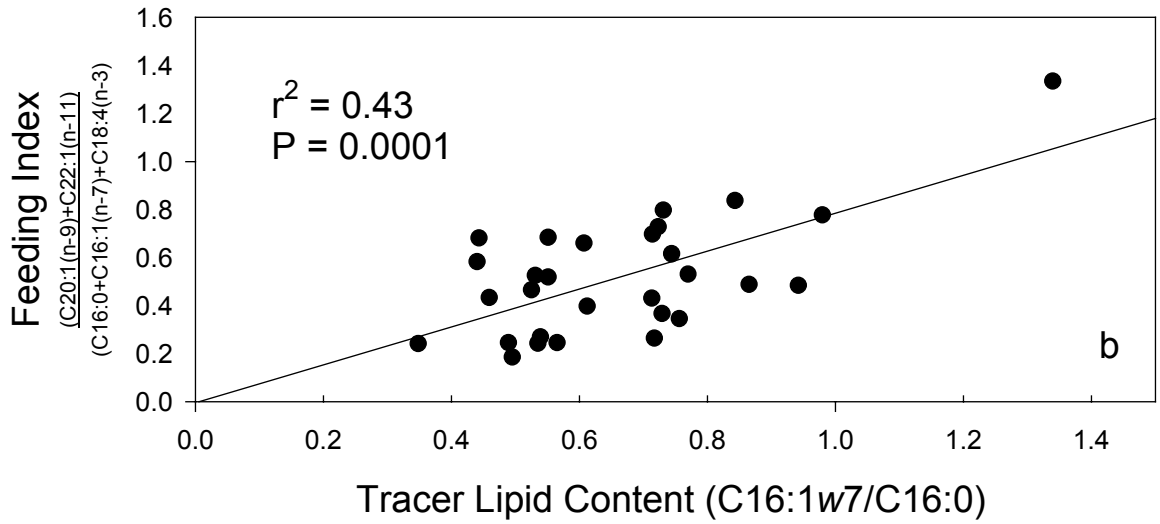
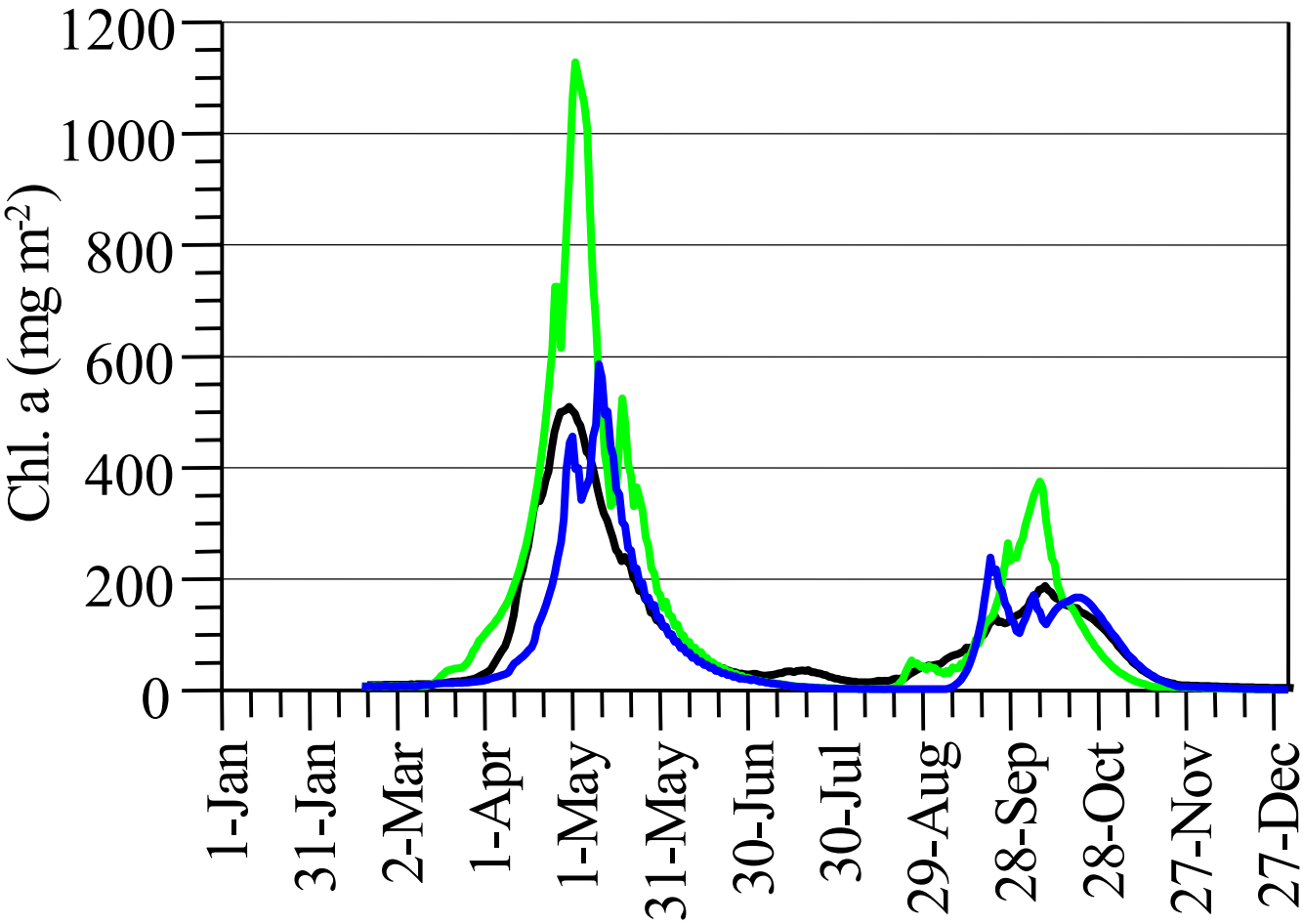


Calanus finmarchicus CV January 1995 in Diapause

Food Web Tracer Content







Calculated depth-integrated chlorophyll for

a) 1991 (green line),
b) 1997 (blue line),
c) daily mean from 1990 to 2000 (black line).

Group Specific Photosynthesis and Light

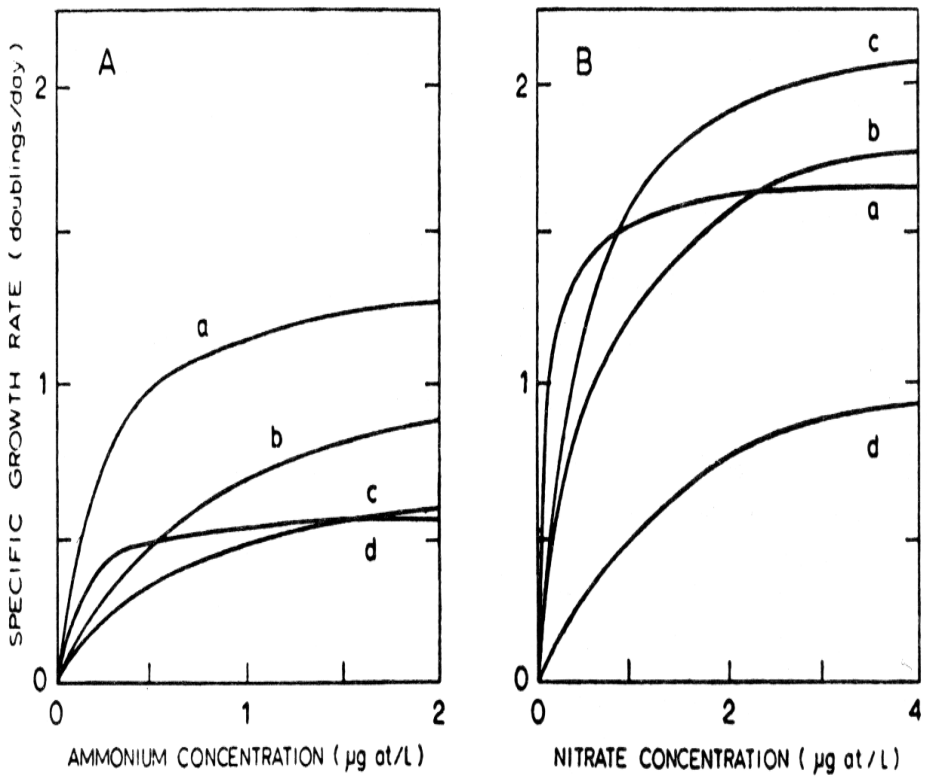


FIG. 46. Specific growth rate vs. ammonium and nitrate concentration at two light intensities, (B) approx. 4 times (A). (a) *Coccolithus huxleyi*, (b) *Ditylum brightwellii*, (c) *Skeletonema costatum*, (d) *Dunaliella tertiolecta* (redrawn from Eppley *et al.*, 1969b).

10) Tables

If necessary **Keep them Simple!!!!**

Usually large tables are not necessary, try to summarize the findings without using them.

If you must use them state why the result is important to your hypothesis!!!!

Results of Model to Remote Sensing Comparison

Spring Bloom (n=6)

Model Lag:	+ 6.1 days ± 8.3
Model Mean Biomass :	18.9 mg Chl *a* .m^{-3} ± 0.7
RS Biomass:	4.9 mg Chl *a* .m^{-3} ± 2.7

Fall Bloom (n=5)

Model Lag:	+ 9.4 days ± **15.4**
Model Mean Biomass :	4.3 mg Chl *a* .m^{-3} ± 1.4
RS Biomass:	2.5 mg Chl *a* .m^{-3} ± 1.7

	C14:0	C14:1	C16:0	C16:1ω7
Feb11-3	2,176	0,357	4,969	0,957
Feb12-3	1,180	0,331	5,140	0,714
Feb1-3	3,244	0,340	8,083	1,404
Feb14-3	0,850		3,785	2,704
Feb16-3	3,321	0,556	50,417	**37,605**
Feb20-3	70,614	0,654	32,895	19,097
Feb21-3	54,863	0,584	25,090	15,068
Feb22-3	56,339	0,307	27,056	24,768
Feb23-3	54,231	0,524	29,046	20,048
Feb24-3	0,430	0,679	14,715	8,148
Feb25-3	82,076	0,741	30,422	25,365
Feb28-3	0,304	0,365	8,510	3,957
Feb3-3	0,825	0,301	3,607	0,447
Feb7-3	3,603		6,759	1,621
Feb9-3	2,124	0,377	6,187	1,278

11) Conclusion/Discussion

-Briefly summarize the findings of your research

- State how these results support or refute the concept you have examined.

- State the ecological significance of your results.

-This is the last chance you have to convince the audience you have done a significant piece of work USE IT!!!!!

Nothing contributes more to a good Presentation More Than

PRACTICE

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