

# 1. Writing scientific papers

**Publishing your science is rather like a salesman's marketing campaign!**

It needs two essential components:

**1. A good quality product to sell -**

Your research

**2. Someone who wants to buy it -**

A journal editor (and referees).

**Your target -**

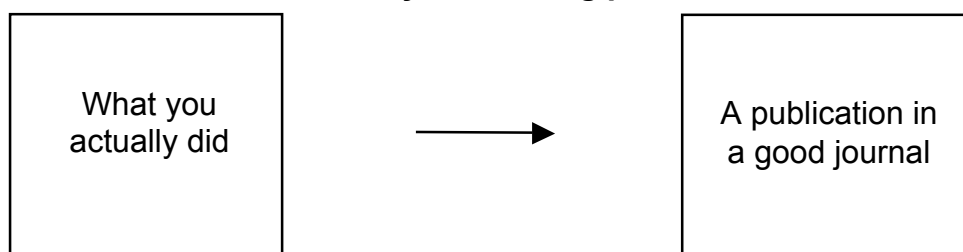
Your exciting/novel/innovative research has to be this year's "must have" Christmas present!

**Here's your marketing strategy:**

- ❖ Is your research good enough?
- ❖ Ensuring that it is!
- ❖ Different types of papers
- ❖ Choosing a journal
- ❖ Instructions for authors
- ❖ Writing the text
- ❖ Tidying it up
- ❖ Improving the English
- ❖ The review process
- ❖ Examples of review comments

## Scientific publications

**This is your starting point:**



**Therefore, your starting point was the research itself.**

**So, first you need to know whether what you actually did is worth a paper in an international journal.**

The first time your science is **critically** reviewed is **not** by a journal referee but **by you before you start it!**

**The tale of the lost traveller and the Irish cowherd.**



**Irish cowherds are very wise people!**

OK, so what's the story all about?

Here's the lost traveller, and ....

A typical wise Irish cowherd:

I am regularly asked by Serbian researchers to help them improve the quality of the English of their manuscripts for international scientific journals.

However, I often find problems with the research which will make it difficult for their manuscripts to succeed.

So, I often find myself giving advice like the Irish cowherd on the previous slide.

**“Ah, to be sure, my young man, if I were you, I wouldn't be starting from here!”**

**So, here was the wisdom of the Irish cowherd.\*\***

**You can't write good quality scientific papers if you're not already doing -**

- **good quality research, with**
- **good quality research design, to achieve**
- **good quality data to analyse and interpret!**

We have an expression **“you can't make a silk purse from a sow's ear”!**  
i.e. you can't make something wonderful from poor quality starting materials.

**Another way to say you can't make a good quality paper if you didn't do good quality research!**

**Research suitable for a good quality [M21] journal:**

**Your research has to be good enough quality or your manuscript is unlikely to be accepted.**

**i.e. all the **factors** were identified to get to the **truth**.**

**But it needs more than this -**

**It needs **international** interest and appeal - more on this in a moment.**

**International journals give you more **impact!****

### **Impact factors\*\* of journals:**

\*\* Journal impact factor is calculated over a three-year period, and is the mean number of times published papers are cited up to two years after publication.

The higher you aim with impact factors, the more difficult it is in general to publish.

Therefore be realistic in choosing the journal for publishing your first scientific manuscript!

In Serbia, the impact factor of a journal determines its Ministry M factor (M21, M22, M23, and so on).

For example: vrednost M21 = 8, M22 = 5, M23 = 3

M21 = ranking amongst the top 30% of international journals

M22 = ranking between the top 30% and 50% of international journals

M23 = ranking in the bottom 50% of international journals

**Your M factor value is important for taking part in Ministry projects, your promotion, etc. My total M factor is around 719.**

**Most top-ranking [M21] journals are in the range for**

- **medical sciences journals up to 50!**
- **physical sciences: 1.4 - 12**
- **biological/life sciences: 2 to 10**
- **food sciences and technology: 1.6 - 4**
- **economic sciences from 1.1 to 5**
- **social sciences: 1 - 3**
- **agriculture: 0.8 - 3**
- **material/computer sciences from 0.5 to 4**

Differences in impact factor between subjects just reflect how popular a particular subject is:

- medical and molecular biological sciences very popular
- agriculture, economics and sociology not very popular!

**[For example, I could find very few M21/M22 agricultural economics journals with an impact factor over 1!]**

It is where the journal ranks within its subject area that matters!

So, within your subject area, aim for a journal with an impact factor in the top 30% of journals (M21).

**This is realistic for you!** I know 2 former PhD students in Faculty of Agriculture who published in M21 journals while still students.

Note - Open Access journals will tend to have higher Impact Factors (easily accessed!)

OK, so let's focus on how you should write a manuscript of your own for a **good-quality journal** with some general comments ...

First, what type of manuscript is it going to be?

**Scientific publications:**

There are basically four types of paper:

1. A hypothesis-testing paper which will set up a hypothesis and then test it.
2. A purely descriptive paper that is describing something new.
3. A techniques/methods paper on developing a new/improved technique/method for something.
4. A review paper describing and discussing what other people have done.

**To be suitable for publishing in an international journal -**

**1) a hypothesis-testing paper needs:**

- one or more hypotheses to be tested,
- clearly-defined aims, justifying why the research needs to be done,
- replicated experiments (with exceptions)
- results that match the aims
- interpretation to test the hypotheses.
- short communications (easier to write and quicker to publish.)

**2) a purely descriptive paper needs:**

- a clearly-defined reason explaining why it (or the research) needed to be done,
- a reason why it is of *international* importance to know about this,
- interpretation of the findings to put them into the context of similar work done elsewhere.
- implications of the findings (policy, etc).

**3) a techniques/research methods paper needs:**

- a clearly-defined reason saying why the new technique/research method was necessary,
- a sufficiently detailed description of the technique/method (including validation) for others to use it as a protocol,
- detailed comparison with existing methods to show how the new method is better/differs.

**4) a review paper needs:**

- a clearly-defined subject area that hasn't been reviewed recently,
- a comparison of findings of others, usually including your own work,
- including the latest research findings, plus where possible papers in press,
- an opportunity for you to publish data otherwise not suitable for publication!

### Scientific review publications:

Note that review papers in review journals will usually give you a **high impact factor!**

Nature Reviews: Cancer - 30.8

Annual review of Plant Biology - 23.5

Annual Review of Microbiology - 12.9

Advances in Agronomy - 3.8

Critical Reviews in Food Science & Nutrition - 3.7

Review of Economic Studies - 2.6

Annual Review of Sociology - 2.2

i.e. M21 journals (**osam poena**)!!

Is your research interesting/innovative enough to publish?

- A frequent reason for rejecting a manuscript is that the results/conclusions of your research are **thought to be not sufficiently novel or not substantial enough** or of **local interest only**.

- for example just repeating someone else's work with different varieties/species [a PhD student in Newcastle].

- Will your paper **increase** the journal's **Impact factor**?

- Your research should create **new knowledge**.

Here's what this might mean using the histograms:

Poorly justified research

Poorly designed research

Poorly described research

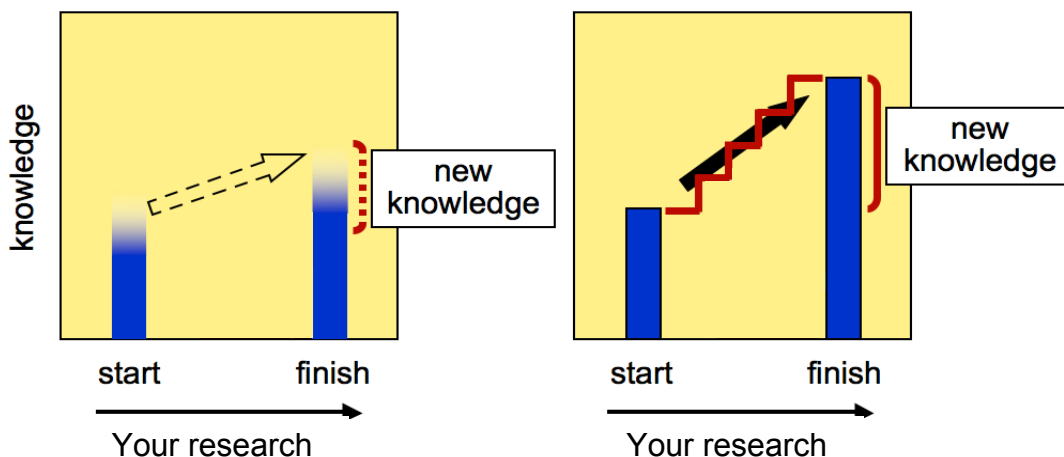
Little evidence of progress

Well-justified research

Well-designed research

Well-described research

Clearly significant progress



**So you believe you have something worth publishing!**

### Journal information for authors:

Always start by reading the journal's information for Authors - either inside the journal cover or on the journal web-site.

First, to identify whether it is the right journal for your paper:

**Information for authors (1):**

**European Journal of Marketing** will publish research that is:

- ❖ based on rigorous, high quality scholarly work of **international standing**,
- ❖ from a diverse range of methodological, philosophical and theoretical approaches,
- ❖ **well written and of clear relevance and interest to marketing scholarship**

The EJM is receptive to controversial topics, .... EJM will be particularly receptive to the development and testing of new theories, as long as they fill the rigour criteria detailed above. **The EJM will not generally be receptive to pure opinion or unsupported conjecture**, although viewpoint and commentary articles are welcome where they can meet appropriate standards of rigour. ... **The EJM is also receptive in principle to the submission of replication studies**, where they are able to demonstrate a clear and substantive contribution to existing marketing knowledge.

**Average time from submission to first decision for a top [M21] journal is typically just 29 days!**

**Information for authors (2):**

**International Journal of Research in Marketing (good M22)** is an **international, double-blind peer-reviewed journal** for marketing academics and practitioners. ... *IJRM* aims to contribute substantially to the field of marketing research by providing a high-quality medium for the dissemination of new marketing knowledge and methods.

**International Journal of Research in Marketing (good M22)**

The editors, while accepting a wide array of scholarly contributions from different disciplinary approaches, especially **encourage research that is novel, visionary or pathbreaking**. Replications and **very minor improvements of methods or theories will generally not be publishable**. All submissions must be **interesting**, relevant to marketing, sufficiently rigorous both conceptually and methodologically, and written in clear, concise and logical manner. **For non-native English speakers, the use of a copy-editor is strongly encouraged.**

**Information for authors (3):**

**Journal of Urban Economics (good M21)** publishes papers of **great scholarly merit** on a wide range of topics and employing a wide range of approaches to urban economics.

The Journal welcomes papers that are theoretical or empirical, positive or normative. Although the Journal is not intended to be multidisciplinary, **papers by noneconomists are welcome** if they are of interest to economists.

**Brief Notes are also published** if they lie within the purview [scope of interest] of the Journal and if they **contain new information**, comment on published work, or **new theoretical suggestions**.

#### **Information for authors (4):**

##### **Other comments from journal information for authors**

Descriptive reports, *in which no specific hypothesis is tested* are **unlikely to be accepted**.

*Field-study results are more likely to be accepted if they use more than a single technique of data collection and analysis.*

**Papers must be original research and must not have already been published or be under consideration for publication elsewhere.**

Work published in abstract form or presented orally is not considered previously published.

***Papers containing a poor standard of English language are less likely to be considered for review.***

#### **Not included in this course -**

##### **Time for a manuscript review exercise.**

You've had (I hope!) a read through the manuscript you were given on Organic market development in Pontevedro.

What suggestions do you have on ways in which this could be improved?

I'll give you my comments later ...

**I shall send you my review after the course.**

**So, having sorted out the organic food supply manuscript, now let's start writing your manuscript ...**

**Once you've decided which journal you will submit the paper to, make sure you read carefully *all* the journal's **Instructions to Authors** for writing the text!**

These will tell you how to **format** the manuscript correctly.

#### **Journal of Nutrition Education and Behavior**

##### **Instructions for Authors:**

##### **Manuscript preparation**

- Manuscripts (including the main text, references, and figure legends) should be saved without a title page as a single file, and should be prepared in a **12-point typeface, double-spaced and with 1-inch margins throughout.** [Note imperial units are used.]
- Beginning with the Introduction, **each manuscript page is numbered in the upper right-hand corner and each line is numbered consecutively.**
- First-level headings are centered on the page, typed in all-capital letters, bolded, and followed by two blank lines. Second-level headings begin flush with the left margin, have each word capitalized, are bolded, and are followed by one blank line. Third-level headings ...
- **Third level headings are only used in Research Articles.**

## Annals of Botany

### Instructions for Authors:

#### Manuscript preparation

- (Always consult a recent issue of *Annals of Botany* for layout and style)
- Text should be typed using size 12 Times New Roman or Courier, double-spaced throughout and with an approx. 25 mm margin.
- All pages should be numbered sequentially.
- Each line of the text should also be numbered, with the top line of each page being line 1 [Format→Document→Layout].
- The article file should be in PC-compatible Microsoft Word - file type DOC.
- Please make sure the "Language" is "English (U.K)" via Tools →Language →Set Language.

## Human Relations

### Instructions for Authors:

#### Manuscript preparation

**MANUSCRIPTS SHOULD BE ANONYMOUS [double blind].** Please do not put your name anywhere on the manuscript. Please do not include acknowledgements, which might indicate your identity. Acknowledgements can be added to papers after acceptance.

Manuscripts may be of any length consistent with their content. However, most papers can be presented effectively WITHOUT EXCEEDING 8000 words, including tables and references.

Articles should be preceded by an **ABSTRACT** of between 100-150 words, summarising the aims and main empirical contribution of the paper.

Please indicate the position of figures and tables in the text as follows:  
**INSERT TABLE 1 ABOUT HERE**

Journals will usually give contributors guidelines on:

#### **Ethics in publishing and ethical standards**

**Conflict of interest** (financial, personal, links with other people)

**Plagiarism** (submitted elsewhere, previously rejected)

**Role of the funding source** (in design, writing and submitting)

**Make sure you read any journal Editorial Policy statements, like the example here ....**

### Instructions for Authors:

#### *Editorial policies*

**Any manuscript submitted to the journal must not already have been published in another journal or be under consideration by any other journal.** Manuscripts that are derived from papers presented at conferences can be submitted **unless they have been published as part of the conference proceedings in a peer reviewed journal.**

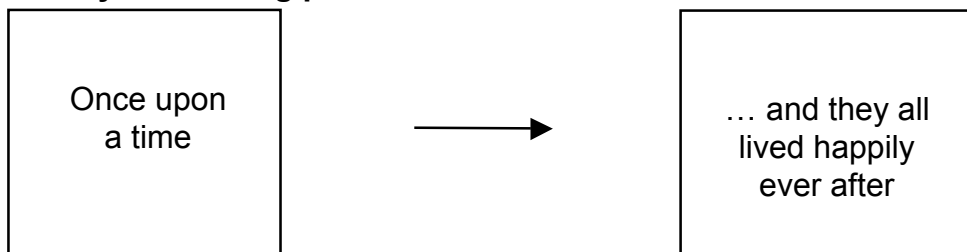
Authors are required to ensure that no material submitted as part of a manuscript infringes existing copyrights, or the rights of a third party. Submission of a manuscript to Biodiversity and Environmental Studies Series implies that all authors have read and agreed to its content.



Not bothering to follow all the journal's instructions (style, format, etc)  
**creates a bad impression at the start**, even before any referee has read  
what you have written!

**Scientific publications:**

**This is your starting point:**



**and this is your target end point.**

Let's assume you have a good story to tell!

The secrets to writing and submitting a good quality paper (***indeed any document!***) are to be ***logical,***

***clear,***

***concise,***

***unambiguous,***

***consistent,***

***without factual errors,***

***without technical errors.***

If not, reviewers won't be able to follow what is going on and you risk comments that the work is not focused or badly put together.

**Logical:** points go naturally from one to another.

**Clear:** easy to read, simple language, easy to understand.

**Concise:** no unnecessary words, easy to read.

**Unambiguous:** only one way to interpret what you write.

**Consistent:** the same information every time you mention it, table and figure data correctly reported in the text, all references cited, etc.

**Without factual errors:** checked for consistency, correctly referring to other work.

**Without technical errors:** checked with journal style, formatting consistent, reference details correct, no spelling mistakes.

***First impressions have an impact on reviewers!***

A manuscript that has simple spelling mistakes suggests lack of care.

***That suggests lack of care with the research!!***

Lack of care implies they may not find the ***truth!***

**Making a start on the manuscript:**

Start by creating a folder on your computer for the manuscript.

This will contain:

- journal instructions for authors
- the text (various versions - each dated)
- publications (pdf files) to support the manuscript
- tables and figures as you prepare them
- maybe key email discussions with co-authors
- eventually, proofs and supplementary documents

I'll describe here a typical research paper.

### The first page:

- Choose a title that gives clear information about the content of the research.

"Effectiveness of the organic food supply chain in the Republic of Pontevedro" is a suitable title but "Supplying organic food in Pontevedro" is not.

The title may be a question: "How effective is the organic food supply chain in the Republic of Pontevedro?" but not:

"Can Pontevedrins get organic food?".

The title can also be a statement of the results: "Organic food supply chains in Pontevedro are poorly established".

### The first page (cont.):

- Think carefully about the author list and their order of presentation - the one doing the research usually comes first.
- Authors should have contributed in some way to the science or the manuscript, or getting the money for the research!
- Should you include your technicians as authors?

### Abstract

- **Write this at the start to organise your thoughts.**

If the journal does not require a structured abstract:

The abstract is a summary of your report, so must be a brief description of the **whole paper**, capturing the essence of your research.

**[Do not say "results are presented for ...."]**

- Remember that most readers of your paper will **never get beyond the abstract**.
- So, ensure the abstract says in 250 words (or whatever the number is) all the reasons for doing the research and the main conclusions.

It should have an immediate impact on the reader, so needs to be written in as **concise** (short) a sentence construction as possible and must give readers a **'take-home'** message.

- **Complete this once the paper is written**

- Give a little background (one sentence) describing the subject area of the research (this is often optional)
- Give a brief description of the rationale behind the research and clearly state research objectives (why it was needed).
- Describe briefly the research methods, experimental design, what was measured.
- Identify which of your results/findings are most important.
- Identify the most important interpretation of your results.
- Maybe, say what this means for the future, policy implications, etc.

Try to save words wherever possible, for example as follows:

Short sentences save words.

Replace “and” with a full stop whenever possible.

Don't use redundant words:

‘To do this, ....’ and not ‘In order to do this, ...’

Rearrange or change words when possible. Instead of:

“..., and calculation of the annual means to identify ...” use this shorter version: “... Calculating annual means to identify ...” (3 words less)

**Never waste words by repeating information.**

### Writing the body of the text:

I'll use the format typical for sciences:

- **Introduction and objectives**
- **Research materials and methods**
- **Results/Observations**
- **Discussion/Implications [and Conclusion]**

to say a few words about putting together what is needed for a good quality paper - whatever the subject of the research.

#### Introduction/Objectives

Your Introduction **must convince** the journal editor and referees of the need for your research. [The ‘**salesman's pitch**’!]

There should be a question to answer or problem to solve, with clear increase in **understanding**.

It is much easier to create a good story if you did research to test one or more hypotheses.

Here are comments I wrote on the **Introduction** of a manuscript by Serbian researchers that I was asked to look at in October, 2011 (writing up a PhD student's thesis work) ....

“The selection of hybrids and varieties is an extremely important issue, which depends mostly on the system and the aim of the intercropping (references??). In additive intercropping, the selection of the major crop (due to interest in yields) is as important as the minor crop, the density of which changes [**changes in comparison with what?**] (due to competition). A minor crop should be a variety (hybrid) that will not expose the major crop to competitive pressure. Competitive relationships, as well as yield, in the replacement series method, in which two crops are equal [**equal in what sense?**], will largely depend on the selected hybrids or varieties. **Above-ground yields are mainly higher if sunflower hybrids of a longer growing period are cultivated, especially under favourable meteorological conditions or in intercropping including irrigation (Kojic et al., 1983, Smith et al., 2007). Medium early maturity hybrids have a somewhat lower yield but a greater share of heads, which means more seeds [more kernels than what?] and they produce silage of good quality.** Putnam et al. (1985) reported that sunflower-bean intercrops were more productive than the individual monocrops [**There must surely be more than one reference to sunflower-bean intercropping, isn't there? I am tempted to ask, if this was being studied back in 1985, why is it that you need to study this in 2011? Aren't the benefits of intercropping already well-established? Are you in danger of 'reinventing the wheel'?**].

In general, the presence of bean did not change sunflower yields [The way the sentences are put together suggests that this sentence is describing the results of Putnam *et al.*], while sunflower significantly reduced bean yields, the reduction being higher with increasing sunflower population (Weil and McFadden, 1991).

Intercropping systems have potential difficulties and limitations that prevent their application on large areas (Mudita *et al.*, 2008; Biabani, 2009). There are many reasons for this: lack of machinery necessary for such purposes, means for plant protection, lack of varieties and hybrids better-adapted to such growing conditions, *etc.* The best cultivars for monocropping might not be the most suitable for mixed cropping (O'Leary and Smith, 2004).

The aim of this study was to evaluate the impact of spatial pattern of sunflower-bean intercrops on the yield of above-ground biomass and seeds of sunflower and bean [Why is this interesting, or necessary?]. Another objective was to determine the advantages of late maturity sunflower hybrids (FAO 600 and 700) in relation to a medium early maturity sunflower hybrid (FAO 500) in intercrops and monocrops [Ok, then give plenty of background information (if available) on what is already known about the benefits or otherwise of late versus early sunflower. However, if there already is an extensive literature demonstrating the benefit of late sunflower, then why are you bothering with another paper on the subject?].”

#### SAQ comments at end of the Introduction:

“There is little justification here for an editor to publish your paper. There are, say, already 20 papers on the subject and you just want to add one more, which will, no doubt, just contribute to the complexity of the problem! **Where is the increase in understanding that this research aims to achieve? Where is the novelty?** You have got to sell this to the journal editor and referees. So, start conceptually by identifying a good story to tell that will lead to something interesting for the reader. Then, build up the background to your story as you present the Introduction, focusing towards the end of the Introduction on what is already known in the literature that is relevant to your specific research story and the questions still remaining to be answered. In that way, you are providing justification for your research to be carried out.”

#### SAQ comments at the end of another Serb scientist's Introduction

“Many authors [11-15] have analyzed the stability of HC and its different pharmaceutical dosage forms. [So, what were the general conclusions from these studies? It is particularly important for you to say something about the findings of reference 16 here.]

Considering the evaluation of the results of the stability testing [16] and in the view of the fact that the acceptance limit for unspecified impurities defined in relevant guidelines [17-19] is 0.1%, this study was undertaken towards the preparation and isolation of the unknown impurities of hydrocortisone to facilitate their characterization by mass spectroscopic and NMR techniques.

[This final paragraph, to describe the objectives of the research to be presented here, should lead naturally from your previous background information relevant to the research area. *At the moment it comes 'out of the blue'!* You need to show what is already known about the stability of existing HC pharmaceutical preparations, what is still not known, why this lack of knowledge is important to overcome and how your research here will overcome it. *Currently, there is no connection between any of the previous paragraphs and your final paragraph.* There has to be a good justification for doing your research or you will have difficulty persuading a journal editor to accept the manuscript.]”

### Introduction and objectives

- subject area background information
- research area background information
- clear justification for this research - what makes it *interesting* (including your previous work)
- clear statement of objectives and hypotheses to be tested
- sometimes objectives change during the paper!

By the end of this the reader should have a clear impression of why the research needs to be done and what sort of conclusions will be reached at the end. Typical length no more than 2-3 double-spaced pages, depending on the research complexity.

### Materials, methods and resources

- Sufficient detail *to allow the reader to repeat your work*
- Include *only* parameters/measurements (and treatments) that you will present later on
- State clearly the research/experimental design and methods, and, where relevant, sample numbers analysed (*needs very careful thought to be unambiguous*)
- Give details of statistical methods that have been used.

### Results/Observations

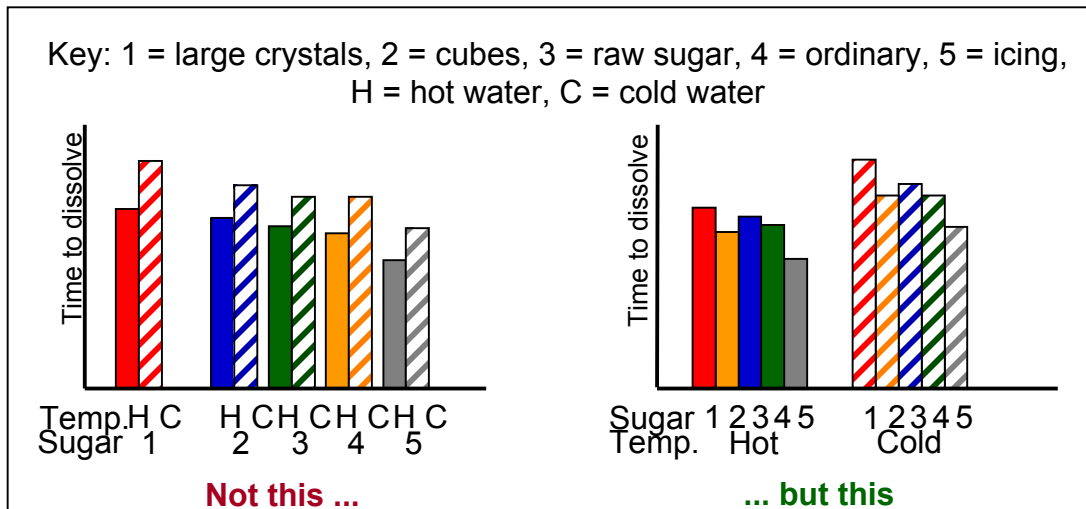
- Present results in a logical order - priority order, or sequence order: this leads to this, which leads to this, and then is followed by this, ...
- If you measured it, present results for it
- Design tables and graphs to have the most visual impact (they must make points **clearly, logically** and **unambiguously**)
- Say something in the text about all the points made in tables and/or graphs
- Do not *interpret* results in the Results section.

Now a few words on how to show data:

When showing results graphically, you should always put the most important comparisons nearest to each other.

Here's an example of two ways to present results. An experiment with sugar test the primary hypothesis that **different types of sugar dissolve at different** rates (a secondary hypothesis looked at the effect of temperature).

The sugar experiment tested the primary hypothesis that sugar types dissolve at different rates. That rate would also depend on water temperature was a secondary hypothesis. Use the right-hand graph:



Present your data in graphs in a **logical** order.

For example, many of my PhD students showed data like this:

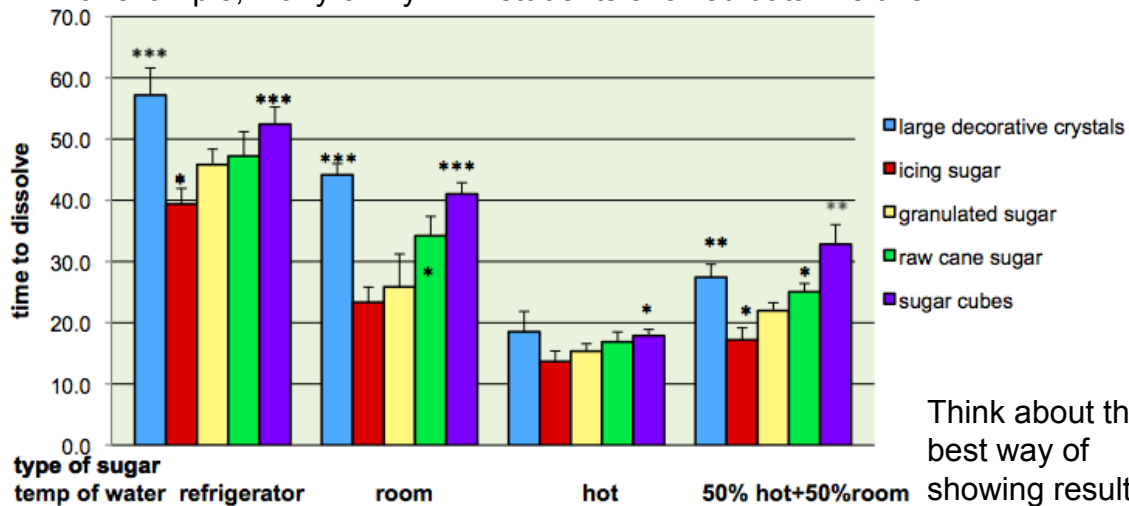


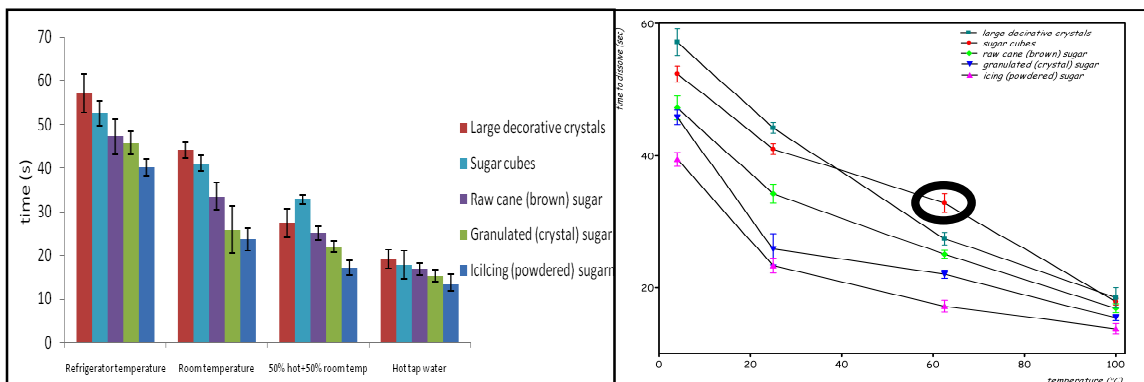
Figure 1. The dissolving rate of different types of sugar

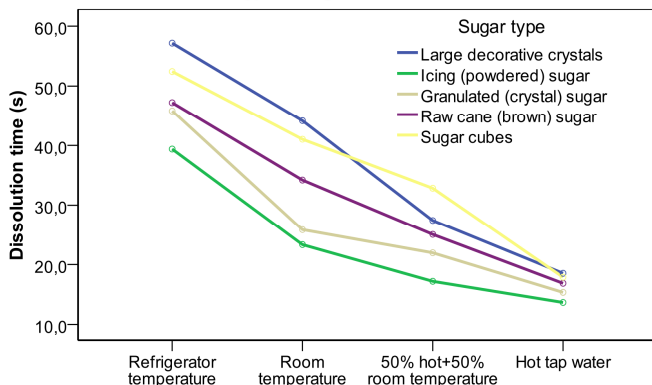
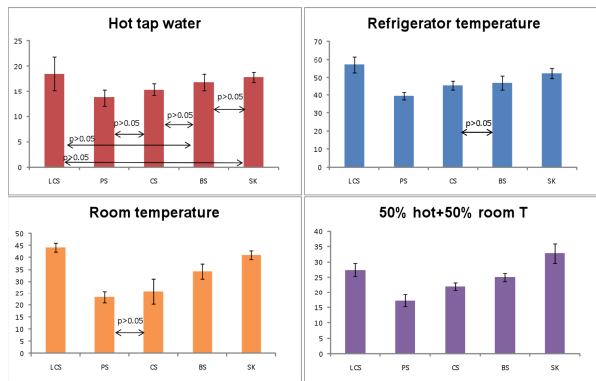
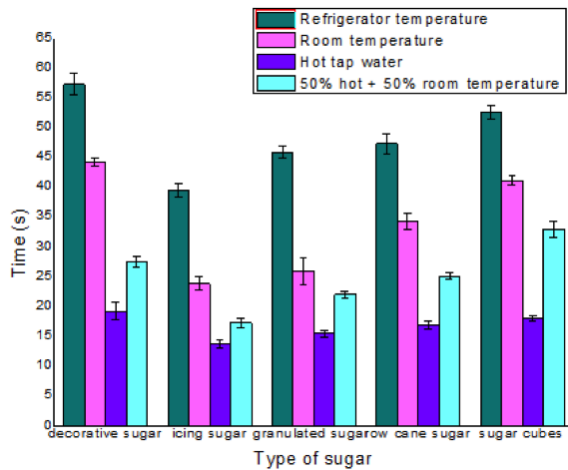
Why are 50% hot/50% cold samples on the right hand side?

Why are icing sugar data next to the large crystal data?

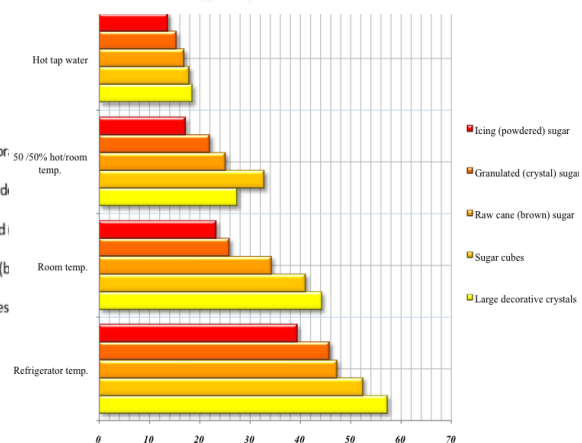
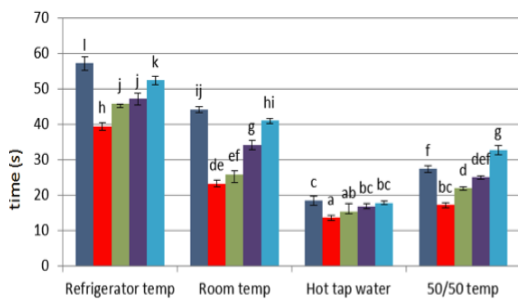
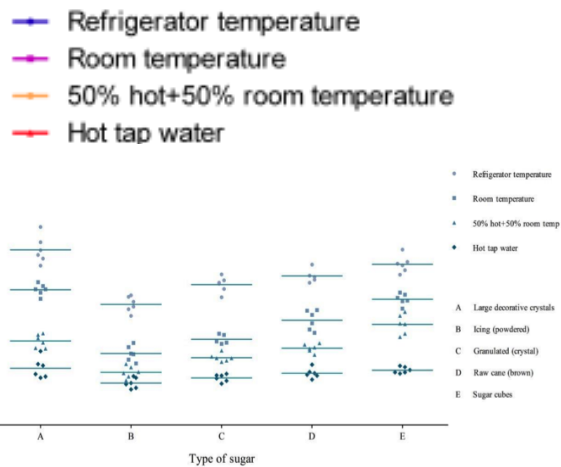
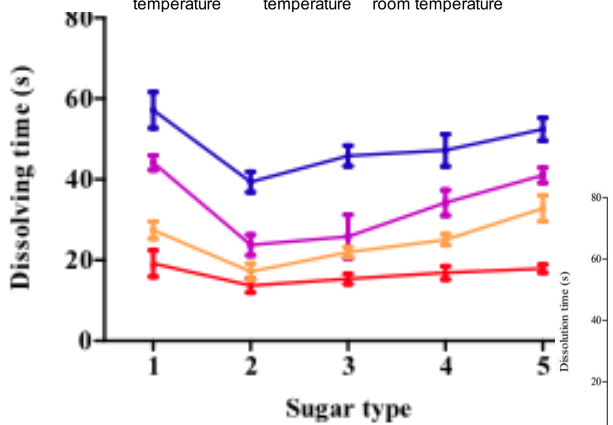
This order may be in real time, but is not **logical** to a reader.

Think about the best way of showing results, (to be most clear). Which of these two below is better?





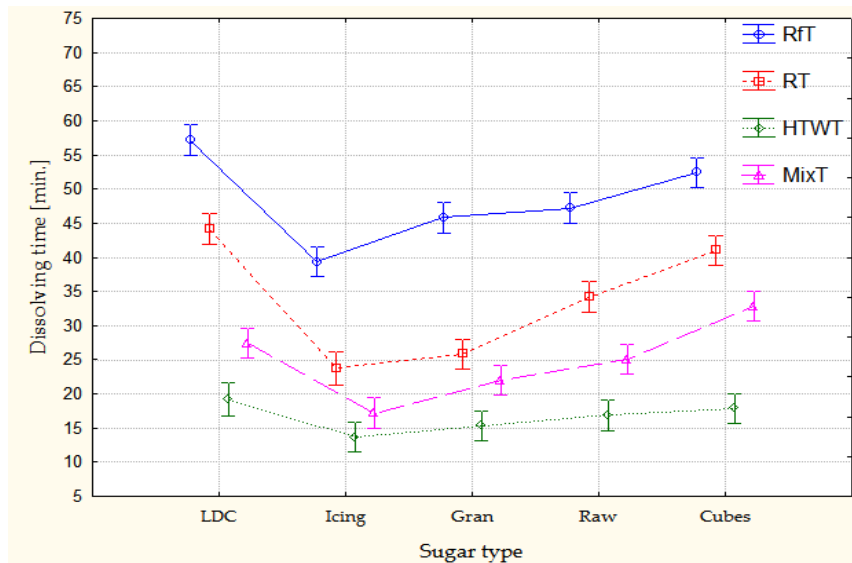
These graphs illustrate different ways of presenting the same results [Prepared by my PhD students].



There is always more than one way of showing results, so think about the best way.

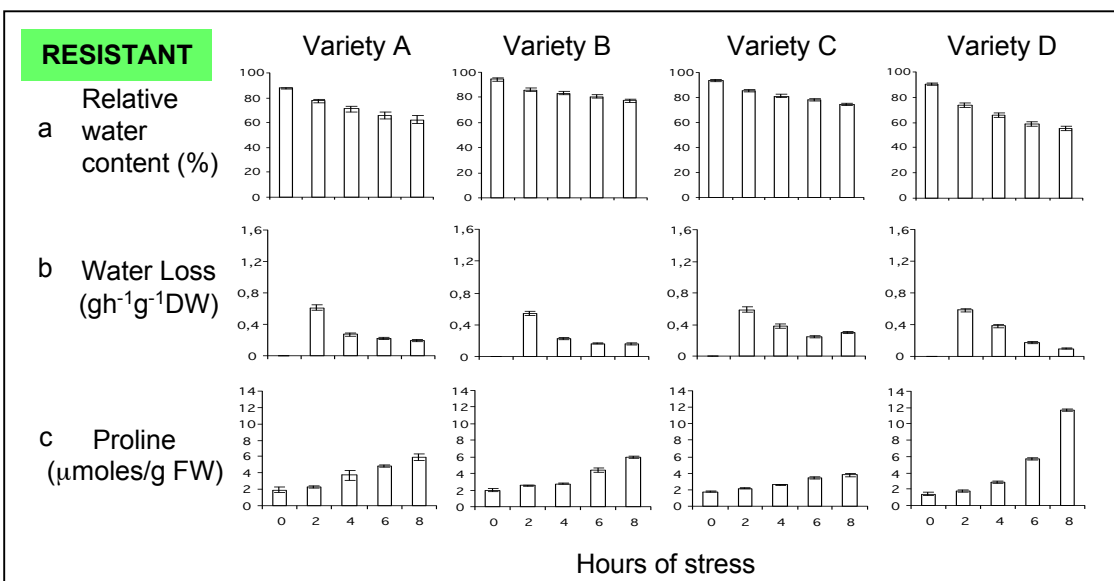
At the bottom of the previous page are two of the graphs from the PhD students I had in 2011 showing different methods to present data. Which method of presenting the data gives a clearer picture of the results?

Using lines to connect data points indicates some sort of trend (in time, temperature, crystal size, etc.). **Therefore do, not do this:**

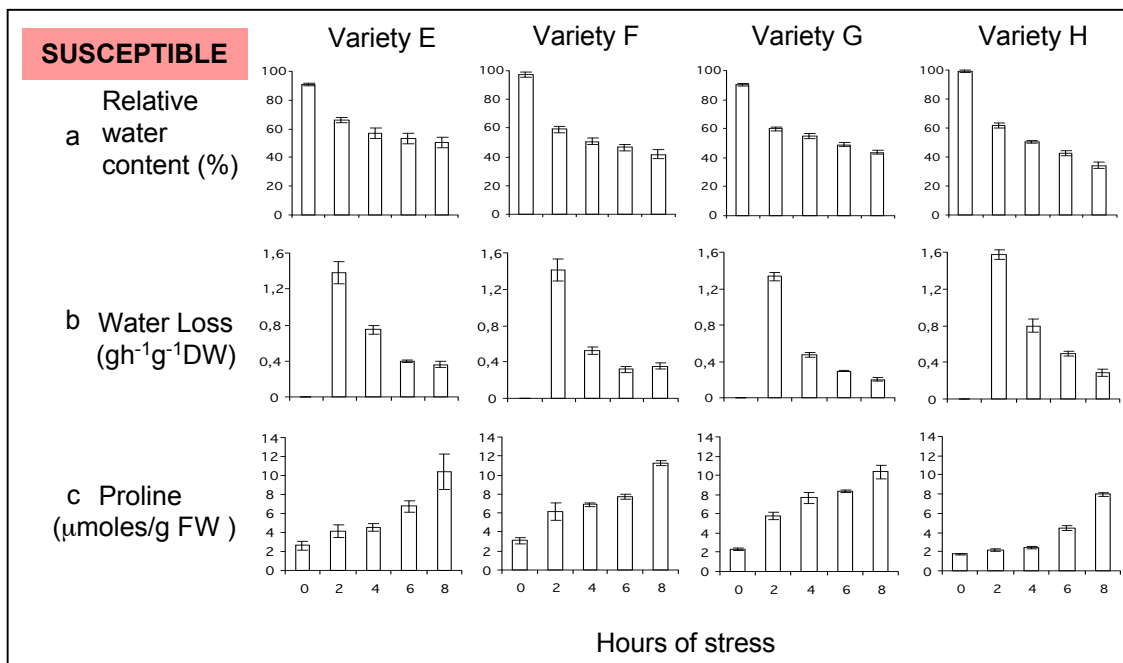


What does a line between Large Decorative Crystals and Icing sugar mean? **If samples indicate crystal size, then this is OK.**

Here are examples of problems with graphs from an actual manuscript: The authors wanted to **compare and contrast** two groups of varieties differing in drought resistance and they presented two graphs - one for 4 resistant varieties, and the next for 4 susceptible varieties.







How easy is it for you to compare differences in drought responses between the resistant and susceptible varieties?

So, in this example it would be much better to compare resistant and susceptible varieties in the same graph, using a separate set of graphs for each trait/parameter.

**Therefore, remember to put the most important comparisons you want the reader to see or appreciate close to each other in figures.**

**Points to note on tables:**

- Don't make a table too dense with numbers.
- Don't use more decimal points than are justified by the precision needed (3 significant figures?).
- Remember to include all the units (cm, h, mmol).
- Don't show the same data in both tables and figures.

Table 1: Phenotypic analysis of shoot number and plant height in the population.

	Stage	Zhenshan	Minghui	the RIL population			
				Mean ± s.d.	Range	Skew.	Kurt.
shoot number	Stage 1	1.30	2.25	1.716 ± 0.425	1.00-2.90	0.560	-0.076
	Stage 2	9.47	12.57	9.776 ± 1.582	6.20-14.10	0.273	-0.036
	Stage 3	17.88	22.85	19.041 ± 3.692	10.50-29.90	0.266	-0.230
	Stage 4	17.43	20.35	18.085 ± 3.323	11.10-29.10	0.472	0.235
	Stage 5	15.88	16.50	15.546 ± 2.792	10.10-24.05	0.592	0.265
		<b>No units for height</b>		<b>Far too many decimal places! Judging by the size of s.ds., only 1 is justified.</b>			
plant height	Stage 1	32.79	30.60	33.743 ± 2.525	27.57-39.20	-0.054	-0.544
	Stage 2	50.38	49.76	51.183 ± 3.555	43.17-61.31	0.217	-0.195
	Stage 3	80.22	75.09	79.757 ± 5.053	67.20-93.50	0.098	-0.180
	Stage 4	82.18	78.97	85.372 ± 5.633	71.92-102.51	0.283	-0.033
	Stage 5	85.13	105.94	98.610 ± 8.118	78.46-116.27	-0.086	-0.432

Table 2. Top 1/3<sup>rd</sup> better performing genotypes with respect to different *in vitro* traits under normal (0 bar) and stress (-7 bars) conditions

Rank	Germination (%)		Shoot length (cm)		Root length (cm)		Coleoptile length (cm)		Root number		Seedling vigour index (%)		Overall basis	
	0	-7	0	-7	0	-7	0	-7	0	-7	0	-7	0	-7
	1	DH 5	DH 6* <sup>B</sup>	Sapt* <sup>A</sup>	DH 28* <sup>B</sup>	DH 62* <sup>B</sup>	DH 61* <sup>C</sup>	DH 80* <sup>B</sup>	V499* <sup>A</sup>	DH 17* <sup>C</sup>	DH 64* <sup>B</sup>	Sapt* <sup>A</sup>	DH 61* <sup>B</sup>	Sapt
2	DH 6	DH 17* <sup>B</sup>	Sen*	Sapt* <sup>A</sup>	DH 43* <sup>B</sup>	DH 19* <sup>C</sup>	DH 85* <sup>B</sup>	Sapt*	DH 27* <sup>C</sup>	DH 28* <sup>B</sup>	Sen*	DH 19* <sup>B</sup>	DH 63	DH 28
3	DH 7	DH 4* <sup>B</sup>	DH 27* <sup>B</sup>	Sen* <sup>A</sup>	DH 63* <sup>B</sup>	DH 65* <sup>C</sup>	DH 69* <sup>B</sup>	Sen*	DH 29* <sup>C</sup>	DH 80* <sup>B</sup>	DH 85* <sup>B</sup>	DH 28* <sup>B</sup>	DH 80	Sen
4	DH 8	DH 18* <sup>B</sup>	DH 85* <sup>B</sup>	V499*	DH 80* <sup>B</sup>	DH 20* <sup>C</sup>	V499* <sup>A</sup>	V452*	DH 28	DH 53* <sup>B</sup>	DH 63* <sup>B</sup>	DH 20* <sup>B</sup>	DH 41	DH 19
5	DH 16	Sapt* <sup>A</sup>	DH 80*	V452*	VW24* <sup>A</sup>	DH 1* <sup>B</sup>	Sapt*	DH 20*	DH 58	H184* <sup>A</sup>	DH 80* <sup>B</sup>	Sapt* <sup>A</sup>	Sen	V452
6	DH 17	V452* <sup>A</sup>	DH 63*	DH 20* <sup>B</sup>	DH 16* <sup>B</sup>	DH 55* <sup>B</sup>	DH 60*	DH 38*	DH 86	Sapt*	DH 62* <sup>B</sup>	Sen*	V499	DH 61
7	DH 18	DH 7* <sup>B</sup>	DH 69*	DH 26* <sup>B</sup>	P552*	DH 28* <sup>B</sup>	DH 84*	DH 75*	DH 1	Sen*	DH 43*	V452*	DH 62	DH 40
8	DH 25	DH 19* <sup>B</sup>	DH 66*	DH 53*	DH 86* <sup>B</sup>	DH 36* <sup>B</sup>	DH 59*	DH 26*	DH 4	DH 7	V499*	DH 26* <sup>B</sup>	DH 26	DH 86
9	DH 26	DH 26* <sup>B</sup>	DH 3	DH 19*	Sapt*	DH 86* <sup>B</sup>	DH 87*	DH 19*	DH 7	DH 27	DH 86*	DH 55*	DH 86	DH 53
10	DH 28	DH 8* <sup>B</sup>	DH 1	DH 36*	DH 85* <sup>B</sup>	DH 77* <sup>B</sup>	DH 20*	DH 36*	DH 8	DH 69	DH 16*	DH 36*	DH 85	DH 26
11	DH 31	DH 16* <sup>B</sup>	DH 74	DH 61*	V499*	DH 57* <sup>B</sup>	DH 15*	DH 53*	DH 16	H155	DH 69*	DH 1*	DH 16	DH 20
12	DH 32	DH 29* <sup>B</sup>	DH 56	DH 55*	V452*	Sapt* <sup>A</sup>	Sen*	DH 61*	DH 23	DH 17	VW24*	DH 86*	DH 20	V499
13	DH 41	DH 46* <sup>B</sup>	DH 70	DH 40	DH 10* <sup>B</sup>	DH 40* <sup>B</sup>	DH 41*	DH 70*	DH 40	DH 21	DH 66*	DH 40*	DH 43	DH 55
14	DH 52	DH 28* <sup>B</sup>	DH 15	DH 86	DH 69* <sup>B</sup>	H42*	DH 56	DH 73*	DH 45	DH 23	DH 26*	V499*	H89	DH 36
15	DH 57	DH 43* <sup>B</sup>	DH 59	DH 65	Sen*	Sen*	DH 63	DH 55*	DH 49	DH 40	DH 56*	DH 57*	DH 31	DH 1
16	Sapt	DH 71* <sup>B</sup>	DH 86	DH 70	DH 26	DH 30	DH 34	DH 28*	DH 61	DH 49	P552	DH 65*	DH 56	DH 17
17	DH 60	DH 31* <sup>B</sup>	V499	DH 62	DH 56	DH 43	DH 31	H184	DH 62	DH 65	DH 31	DH 53*	DH 3	DH 65
18	H155	DH 56* <sup>B</sup>	DH 41	H184	DH 75	V452	DH 71	DH 86	DH 63	DH 71	DH 75	DH 74*	DH 69	DH 74
19	Sen	DH 60* <sup>B</sup>	DH 71	DH 73	H147	V499	DH 23	DH 39	DH 88	DH 86	DH 3	DH 38*	VW 24	DH 70
20	DH 4	DH 62* <sup>B</sup>	DH 53	DH 74	DH 78	DH 38	DH 76	DH 40	DH H89	H147	DH 74	DH 77*	DH 5	DH 57
21	DH 19	DH 39*	DH 75	DH 38	H30	DH 60	DH 88	DH 65	DH 5	P343	DH 10	DH 43	DH 45	H184
22	DH 21	DH 3*	DH 21	DH 1	DH 30	DH 74	H155	DH 72	DH 10	W10	DH 41	DH 70	DH 19	DH 27

Contd...

23	DH 33	DH 40*	DH 31	DH 39	DH 66	DH 93	P552	DH 74	DH 11	DH 4	DH 45	DH 30	DH 10	DH 38
24	DH 44	Sen*	DH 62	DH 72	DH 45	DH 27	DH 61	DH 1	DH 14	DH 5	DH 71	DH 93	DH 66	DH 30
25	DH 47	DH 74*	H89	DH 57	DH 31	DH 26	DH 39	DH 69	DH 19	DH 52	DH 30	DH 60	P552	DH 39
26	DH 48	DH 1*	DH 26	DH 58	DH 74	DH 14	DH 26	DH 93	DH 20	DH 61	DH 25	DH 17	DH 1	DH 77
27	DH 64	DH 11*	DH 20	DH 67	DH 93	DH 17	H89	P552	DH 41	DH 88	H3024	H42	DH 18	DH 73
28	H42	H89*	DH 18	DH 76	H184	DH 3	H184	DH 57	DH 60	H89	DH 20	DH 73	H155	DH 72
29	H184	DH 49*	DH 5	H155	DH 3	DH 10	DH 3	H155	DH 72	P552	DH 70	DH 3	DH 75	DH 21
30	P552	DH 53*	DH 58	DH 68	P343	DH 70	DH 35	DH 27	DH 78	V499	DH 78	DH 39	DH 74	P343
31	U2418	DH 70*	DH 78	DH 30	DH 25	DH 59	DH 38	DH 58	DH 87	DH 8	H184	DH 27	DH 32	DH 10

Note: Sapt- Saptdhara; Sen-Sentry; V499-VVFW 499; V452-VVFW 452; H42-HPW 42; H89-HPW 89; H155-HPW 155; H184-HPW 184; H3024-HW 3024; P552-PW 552; H147-HPW 147; P343-PBW 343; U2418-UP 2418

\*Significant at  $P \leq 0.05$ , when compared with overall mean.

<sup>A</sup> Best parent; <sup>B</sup> DH lines at par with the best parent; <sup>C</sup> DH lines better than the best parent

How easy is it to assimilate and understand the data in this table?!!! KEEP IT SIMPLE!

### Presenting Fraudulent Results

Fraud involves deliberate deception, including the **invention (fabrication) or falsification of data**, and the omission from analysis and publication of **inconvenient data**.

Researchers are sometimes under **huge pressure** to “prove” a positive result (e.g. new drug trials).

Scientific ethics must always be respected, and great care must be exercised when deciding that data may be ignored or changed for some reason.

Ask yourself the question “**If I change or ignore any of these data shall I get closer to or further from the truth?**”

### **Discussion/Implications (1)**

- Do not repeat the results in the Discussion!!
- Discuss results in the order in which they were presented
- **This where you *interpret* your findings**
- Interpret how your results fit in with your stated objectives/hypotheses
- Interpret how your results fit in with other published work
- [Consider any limitations of your methodology and suggest possible improvements]
- Future research/policy implications/next step
- Give a 'take-home' message at the end.

Make sure your Discussion is genuine discussion to ***interpret results*** and ***not just descriptive*** - restating parts of your Introduction or Results (text in grey below):

Here's an example of part of the Discussion of a manuscript I was asked to check through for a researcher (only the sentence in red is interpretation):

"In this experiment, it was possible to show, that different level of osmotic stress after PEG treatment can reveal the sensitivity of tested sensitive and resistant wheat genotypes and allows to choose the proper concentration of PEG to investigate further supplementations of media to explain the mechanisms of drought tolerance. Plant morphology and water status at seedling stage, gas exchange, lipid peroxidation, accumulation of some osmolytes, like soluble carbohydrates, proline and polyamines were sensitive in three tested concentrations of PEG treatment (D1, D2 and D3). Generally, after osmotic adjustment at the seedling stage, the growth of plants observed as of seedling height and roots length is decreased. Also RWC is lowered for sensitive genotypes. In this experiment lower water potential in CS genotype resulted from reduction of water content in leaves of seedlings. Under osmotic stress its impact on changes of photosynthesis between drought-resistant and drought sensitive genotypes was not always significant. **Probably in these conditions the effect of non-stomatal mechanism regulation of photosynthesis occurred.**"

Here are section headings in my latest paper:

#### **Results**

##### ***Environments and phenotypes***

*Environmental variation*

*Phenotypic variation*

*Trait associations*

##### ***Genetic map and QTL analyses***

*DArT-extended genetic map*

*Marker and gene deletion bin assignments*

*QTL analyses*

*Coincidence of QTLs*

#### **Discussion**

***Phenotypic characteristics***

***The extended genetic map of Chinese Spring x SQ1 and bin assignments***

***Locations of QTLs and their coincidences***

***Future developments***

#### **Conclusions**

## Acknowledgements

Don't forget to acknowledge the help from others that allowed you to do the research: technicians, students, materials provided by others, analyses done by others, etc.

Always acknowledge the funding sources that paid for the research.

## References

Add all text reference citations to your Reference list as you write the manuscript to avoid forgetting any when you type all reference details.

Make sure you follow the style and format for reference details required by the journal. Use Reference Manager or EndNote software if you have access to it. I find inconsistencies in formatting references very frequently.

If you copy and paste reference details directly from the journal website or a pdf file of the article, make sure you change the title from 'Title' case to 'Sentence' case.

Many people use software: Reference Manager or End Note.

## Plagiarism

**Plagiarism is becoming an increasing problem (for example, the previous president of Hungary in 2012 and German education minister in Feb, 2013).**

### **Guidelines on quotations from Human Relations:**

Quotations from published work, including any author's own previous work, must be acknowledged as such and fully cited.

Quotations should be kept to a minimum. Where possible, keep quotations to 100 words or less. Where quotations exceed 400 words, the permission of the publisher (or copyright holder) must be obtained and acknowledged.

Diagrams and tables reproduced from already published work require permission from the original publisher (or copyright holder).

It should be stated in the relevant legend that permission for reproduction has been granted, giving the reference and name of the copyright holder who has given the permission.

I regularly use <http://www.grammarly.com/>

### **Some advice from others at Newcastle University, Centre for Rural Economy:**

Responses from **senior/established academics** at Newcastle University for advice to PhD students on getting published.

[Sent by Matthew Gorton for FOCUS-Balkans.]

Typical responses of professors to the question ‘What advice would you give?’:

*“At the very least you could circulate your answers and give the rest of us a clue!”*

*“I’m probably the worst person to ask for this!”*

*“I think I have had far too many rejections to provide that much guidance!”*

### **Planning**

1. **Time management.** If you have something to write make sure you cross out time in your diary regularly to do this otherwise it will constantly be put to the bottom of the pile as more pressing things come along!
2. **Don't have a list of 20 paper ideas.** Focus on your first 1 or 2 priorities and set aside time when you will address them.
3. **Plan the papers you will write each year.** Have a plan at the start of the year of what papers you want to get submitted over the year.

### **Targeting**

1. **Before writing have a target journal,** or at least the type of journal, in mind.
2. **Target your journal effectively.** Having a high impact score is good but so is having a journal that has a reasonable turn round time, both in terms of giving you a decision and getting things published.
3. **A good indication of whether or not it is the right journal** is whether or not you are referring to material in your bibliography from past issues of the journal.
4. **A good scientific paper targets specific scientists.** Be clear about which group that is and what journal(s) they would be reading.
5. **Be clear who you are writing for and focus on that audience.** Don't try to write for everyone. Who do you want to tell about your research, what is the best journal to reach them?

### **Targeting**

6. **Watch out for calls for special issues on a subject.** If its in your area they may be very pleased to get good empirically-grounded insights or detailed description even if you don't have profound analytical or theoretical insights.
7. **Some journals are much, much harder to get in than others so ask for advice.** By talking to others you will get a sense of how tough a journal it is and how appropriate your paper is to it.
8. **Choose the right journal for the work.** So, you need to know your target journal well - make sure you know the usual topics, content and style of articles in the journal.
9. **Which journals are targeted by people you consider to be working in a similar area as yours?**

### ***Teamwork***

1. **Get involved in co-authorship of papers.** This can be a way of improving quality, drawing on individual strengths and keeping sane. When working in writing partnerships, don't sit on drafts. Aim to pass drafts on rapidly between co-authors.
2. **Look to form research/writing collaborations that work.** These will give you have a mix of single-authored and multiple-authored articles. Co-authoring can also help getting those first few articles put together and help understand the publication process.

### ***Writing***

1. **Write a damn good paper that you feel deeply about.**
2. **Start by preparing a fairly detailed outline.** That way you always have something to refer back to (I guess this is common sense!) [an abstract maybe?]
3. **Be prepared to re-work your structure.** The argument doesn't always work the way you think it will when you start.
4. **Know the journal you are targeting.** That way you can write from the start reflecting its aims/focus, in its style, according to the submission guidelines etc.
5. **Write in short clear sentences.** Trying to be too wordy will tie you and the reader in knots. In some disciplines the tendency is to write in grand theory, being verbose when it really isn't needed.

### ***Writing***

6. **Be careful not to set up false arguments.** This is very easy to do when you are trying to differentiate your work (be constructive in your criticism of others - don't introduce something just to dismiss it)
7. **Think carefully about the added-value of the article.** How will it contribute to the literature and science?
8. **Make your paper's contribution clear.** Make sure it is tied into debates within the literature. Know the literature in your field well.
9. **Figure out what it is you like about the journals you enjoy the most.** Learn the stylistic tricks that lift an argument.
10. **Practice writing at every opportunity.**

### ***Peer support***

1. **Regularly seek comments and views of colleagues on drafts.** Don't submit a half-baked piece early.
2. **Always, always get other people to read and comment on your manuscript before submission.**
3. **Don't try to publish too early.** Ask for honest advice from supervisors and mentors on when research is ready to be written up for publication.

### **Peer support**

4. **Get advice from people with experience in publishing in your field.** Ask them journals to target. Get feedback on your manuscript before submission.
5. **Getting feedback from colleagues.**
6. **Let other people read what you write and ask them for comments.** Don't get upset if they criticise but get behind the criticism if valid and see how to respond.

### **Review and revisions**

1. **Develop a thick skin.** Over time, all academics will get papers rejected and some reviewers are nasty and adversarial. They should remember that a paper may be bad but that does not equate to invading Poland.
2. **Have a tough skin and persist.** Don't be dispirited with rejection or major revisions. Be polite to referees and editors in commenting on revisions to papers
3. **Don't sit on revisions or referee comments.**
4. **Read editor's and referees' comments very carefully.** If revisions are needed, then revisions are needed!
5. **Make the editor's job easier when returning a revised paper.** Give a blow by blow account of changes that address comments (don't complain).

## **Improving your writing style and use of English**

### **Writing style and improving your English**

At the end, put aside your draft and come back to it later. You'll be surprised how much you want to change!

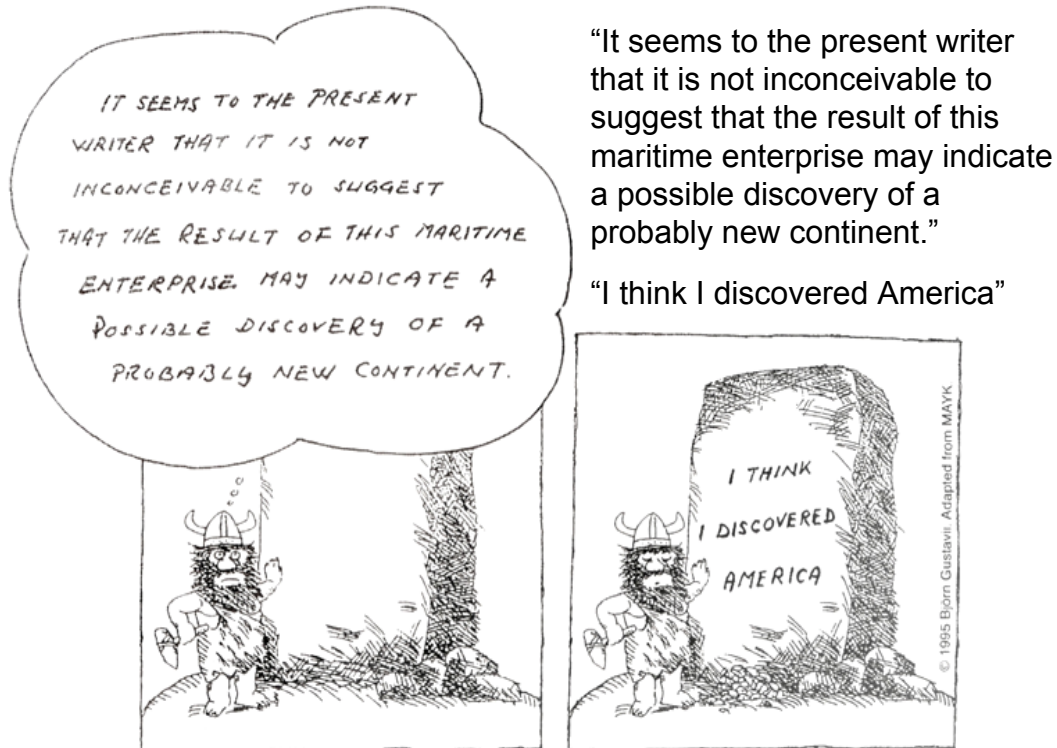
This is the time to tighten up the text and remove unnecessary words - scientists from here like to use unnecessary words!

Such phrases as **'It is worth pointing out in this context that'** may be deleted without affecting the meaning.

So may **'It is significant to note the fact that'**, **'It should be borne in mind in this connection that'**, and other phrases that correspond to no more than spoken 'errrs, ummms and ovaajs'.

For **'It is plainly demonstrable from the data presented in Table 2'** write **'Table 2 shows'**.

### Don't write unnecessary words!



(Redrawn, with permission, from Majewski 1994.)

## How to Write & Publish a Scientific Paper

5th Edition

Robert A. Day - ORYX PRESS 1998

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### Appendix 4: Words and expressions to avoid

#### Replace

a considerable amount of  
a considerable number of  
a decreased amount of  
a decreased number of  
a majority of  
a number of  
a small number of  
absolutely essential  
accounted for by the fact  
adjacent to  
along the lines of

#### with

much  
many  
less  
fewer  
most  
many  
a few  
essential  
because  
near  
like



**Here are typical Balkan (Slavic) examples (red):**

subsequent to	after
sufficient	enough
take into consideration	consider
terminate	end
<i>the aforementioned/abovementioned</i>	<i>weight varied</i>
<i>values for weight varied</i>	
<i>the data for height showed</i>	<i>height showed</i>
<i>the findings in this section imply that</i>	<i>this implies that</i>
the great majority of	most
<i>the measured values</i> for time showed	<i>time showed</i>
<i>the measured values of time to</i>	<i>time to equilibrate ranged from</i>
<i>equilibrate showed a range from</i>	
the opinion is advanced that	I think
the predominant number of	most
the question as to whether	whether
the reason is because	because
<i>the studied varieties showed</i>	<i>the varieties showed</i>
<i>the values for height showed</i>	<i>height showed</i>
the vast majority of	most
there is reason to believe	I (we) think/believe
they are the investigators who	they
this result would seem to indicate	this result indicates

**Genuine examples from manuscripts (from Serbian scientists)**

“Diversity in **the evaluated/studied/tested** traits amongst the ....”

becomes “Diversity in traits amongst the ....”

“A comparison of **95% CI values of evaluated** traits for ...”

becomes “A comparison of 95% Cis for traits for ....”

“The **collected** data were **statistically** analyzed using SPSS software

....” becomes “The data were analysed by SPSS ....”

“should be advantageous **for the** avoidance **of** ....”

becomes “... should be advantageous to avoid ... ”

“... were recorded in **examined** indigenous varieties”

becomes “... were recorded in these indigenous varieties”

“**Statistically** significant trend toward an association ....”

becomes “A significant trend toward an association ....”

“tabulated all the **abovementioned** traits **in order** to present the”

becomes “tabulated all these traits to present the”

**Two examples of texts from a Slavic speaker (a scientist from Poland):**

**Original**

For all data of measurements standard error of mean was calculated.

**SQ version**

**Standard errors of means were calculated** for all parameters. **[Start with what was done, then ....]**

**Original**

The results of measurements of gas exchange parameters and chlorophyll content in control plants are presented in figure 1.

**SQ version**

Gas exchange parameters and chlorophyll content in control plants are presented in figure 1.

**Two examples from a Slavic course participant:**

**Original**

It could be identified several driving forces that motivate people to initiate organic production ...

**SQ version**

Several driving forces were identified that motivate people to initiate organic production ...

**Original**

In this moment is very important to mention that structure of organic food distribution is mainly in special healthy food part of big supermarkets.

**SQ version**

Currently, organic food is distributed mainly through health food sections of major supermarkets.

**A manuscript paragraph from a [one of many] course participant:**

**Original**

There is several very important open questions [a typically East European phrase] like regular basis distribution, appropriate packaging, marketing education to the producers etc. which should be done before starting of serious informative campaign for organic food.

**SQ version**

It is essential to educate the producers to provide regular supplies, distribution, appropriate packaging and marketing before starting any serious publicity campaign for organic food.

The manuscript gave no research method details.

Cited and listed references were not related!

**Another paragraph from the [that particular one] course participant:**

**Original (\*)**

*There is* many problems along the chain, from the suppliers till consumers. Like main problems in production process were mentioned supply of organic fertilizers and organic protection materials. Another problem is unavailability of biological materials and that why is important to have allowed list of materials appropriate for using in organic production. For **solving of these problems [another typically E Europe phrase]** it is necessary establishing of specialized shop for organic materials and protection instruments.

**SQ version**

Many problems *exist* along the chain from the suppliers to the consumers. The main production problems are supply of organic fertilisers and treatments for plant protection, including suitable biological agents. Therefore, it is essential for the Ministry to have a list of permitted materials for organic production. Specialised suppliers for organic growers are essential.

### Correcting a manuscript is often not a trivial job:

The process goes as follows (for each paragraph):

1. Correct the English to make it typically English [easier to read]
2. Make it simple English (cut out/rearrange words) [quicker to read]
3. Check for consistency with surrounding text [does it flow logically?]
4. Check for consistency with the data [is it factually correct?]
5. Check for consistency with the references [are they cited correctly?]

That paragraph above (\*) took exactly 6 minutes to read through, understand and then to retype, plus a few more seconds to check it again for typing errors. [Plus another minute the next day, after sleeping on it: parts 1+2, above, only]

The whole manuscript would be the equivalent of 25 such paragraphs (including the abstract).

Thus to correct the whole text would take around 3 h, including proof reading, but **not** consistency [that could take another 1-2 hours, at least].

That is why many journals recommend that a manuscript is checked by a fluent English speaker before submission. Some journals provide their own copy-editing service to improve the English.

### Another manuscript sentence from course participants:

#### Original

However, all respondents **consider** ... traditional food overwhelmed with **meet**, full of fat, prepared as grilled, roasted or fried. The **later [latter]** was particularly emphasized female participants. Also younger participants **consider** traditional food not to be particularly healthy.

#### SQ version

However, all respondents, especially female, **considered** traditional ... food to be overwhelmed with **meat**, grilled, roasted or fried, and full of fat. Also, younger participants **considered** traditional food to be not particularly healthy.

### Which tense of the verb do you use?

Generally speaking, if you are describing what you did in your experiment and its findings, then you use the simple past tense. The **active** form is OK!

[Materials and Methods]

“**We sent** a spaceship to the moon to examine its composition and found that it **was** made of sugar!”

[Results]

If the results of your research are likely to be generally true then you can use the present tense.

“As the moon **is** made of sugar it **is** very likely to be able to support simple forms of life.” [Discussion]

Here’s an example on the use of tenses given in *Botanica Serbica* (published by Biology Faculty - Belgrade University):

“Introduction and Discussion sections may contain present tense to convey generally accepted information.

“Materials and Methods and Results are normally written in the past tense. Results and discussion can be combined.”

**You can usually reword a sentence that includes the phrase: “*it is* .....**” or “***it was* ...”**. For example:

“... existing references which, as it was concluded, **underestimated** the prevalence of ...”

Convert the verb past participle “underestimated” into the infinitive of the verb: to **underestimate**.

This becomes: “... existing references, which were concluded to **underestimate** the prevalence of ...”

Note that “,” has now been placed before “which”.

**Here’s some advice on the use of articles (a, the) - particularly difficult for Slavic language speakers.**

**Tomato** [used as a descriptor] juice is usually sweet.

**A tomato** [just one - any one] was harvested ....

**The tomato** [that specific one] was then ....

**Tomatoes** [in general] are regarded as sweet.

**Tomatoes** [assuming they have been previously described] were harvested ...

**The tomatoes** [used in this experiment - **specific ones** (typically followed by an adjectival clause)] were of the variety ‘Sonata’.

**Some closing remarks:**

- A frequent reason for rejecting a manuscript is that the results/ conclusions of your research are **not thought to be sufficiently novel or not substantial enough** or of **local interest only**.
- for example just repeating someone else’s work with different populations/methods.
- Will your manuscript help to increase the journal’s **impact factor**?!
- If the referees say your manuscript is too long and needs reducing, a good way to do this is to **combine the Results and Discussion sections** so you say everything only once!
- **Your written English needs to be sufficiently good** for it to be unambiguous/obvious what you are trying to say. If in doubt, when possible get a native English speaker to check your manuscript before you send it.
- **Referees will not bother to struggle reading very bad English!** However, if the English is acceptable, they will often be willing to correct for you any subtleties in the use of words (eg prepositions, and when to use ‘a’ and ‘the’).

- **Don't assume referees are always right!**
- Just like us, they sometimes make mistakes, not reading text carefully enough or jumping to the wrong conclusions.
- **So, you don't have to accept everything a referee says!**
- If you can provide a good counter-argument to a referee's comment in your reply to the journal's editor, then do so.
- **Even if you can't see a reason why, accept any changes of words/style required by a referee!**
- It looks better to the editor if it is clear you are responding to the referee's comments where possible.

### **The review process:**

**This example for Journal of Experimental Botany is typical.**

The Editor makes the initial evaluation of the manuscript. If the topic is important and relevant to the journal readership, he/she assigns the manuscript to an Associate Editor, who oversees the review process.

**Manuscripts are reviewed by two [5 asked?] independent experts** in the particular area. The reviewers will make a scientific assessment and send a recommendation to Editors.

**If reviewers' reports are contradictory**, the Editor will either send the manuscript for a third opinion and accept the majority view, or decide to reject the manuscript.

<p><b>Referee Assessment</b> Please complete the following assessment and use these criteria in writing your report.</p> <p style="text-align: right;">Yes No See comments</p> <p>The reported results are novel</p> <p>The experiments are well designed and executed</p> <p>The manuscript is well written, clear, concise and in the <b>third person</b></p> <p>The subject area is important and relevant to experimental botany</p> <p>Figures and tables are clear, non-repetitive and necessary</p> <p>Titles and abstracts are representative and concise</p> <p>References are adequate without being excessive</p> <p>Colour plates are essential to understanding the science</p> <p><b>Please score the paper on a scale of 1 to 5 with 5 the highest quality or most important:</b></p> <p>Importance of the topic</p> <p>Quality of the science</p> <p><b>Overall Recommendation</b> Please tick the appropriate box</p> <p>Acceptable with minor revision</p> <p>Acceptable with revision</p> <p>Unacceptable as major revision required</p> <p>Unacceptable</p>	<p><b>Note: J. Exp. Bot. rejects over 60% of manuscripts submitted!</b></p>
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**Quality of science has to be 4 or 5 for manuscripts to succeed.**

### **Conclusion:**

So, if you've carried out carefully-designed research, accounting for all the factors, then the advice given here should allow you to prepare a good quality manuscript for a top-ranking [M21] international journal describing your research.

### **Note:**

- your research should be **looking for the truth**
- the reader of your paper needs to see clearly **that you are presenting the truth!**

**So, if your marketing strategy was effective, you should now be able to get your manuscript accepted for publication!**

Finally, for complementary advice on writing a scientific paper see:  
[http://vivovoco.astronet.ru/VV/E\\_LESSON/WRITING.HTM](http://vivovoco.astronet.ru/VV/E_LESSON/WRITING.HTM)

### **Examples of review comments I wrote on manuscripts - 1a:**

#### **Review of MS 010643 by M.... and R....**

At first sight this looks a carefully carried out and written up piece of research to study aspects of the mechanism of Cd uptake and complexing in durum wheat. **There is some very good science in this; it's just a shame that the hydroponics experiment didn't work!**

The authors need to repeat this aspect of the work with much lower levels of Cd in the hydroponics to be able to test the association between Cd uptake and sequestering in relation to seed levels of Cd. This may reveal differential expression of Cd-complexing polypeptides.

**Nevertheless, much of the biochemistry presented here is probably publishable in its own right, though not in relation to any genetic variation in seed Cd contents. The authors should be encouraged to consider this,** while at the same time repeating the hydroponics experiment with more realistic Cd treatments to test for genetic variation in Cd complexes.

**If it is any consolation, it is nice to see a manuscript so well presented with so few unnecessary errors.**

### Examples of review comments - 1b:

#### Review of MS 010643 by M.... and R....

A few minor errors and stylistic improvements have been noted on the text.

**A couple of specific points from the text that the authors should address in any new manuscript are listed here:**

- 1 P7 It is not clear in the Materials and Methods (lines 16 *et seq*) how many replicate samples of each genotype were analysed for Cd complexes. Was it just one per genotype or more? With appropriate experimental design it would have been possible to carry out a paired t-test with each isoline pair to test whether any consistent trend existed between H and L lines - for example Table 2 shows that L lines consistently had lower means for Cd peak I than H lines for each tissue type, though any significance of differences is lost in the noise generated by pooling data for all the lines within a phenotype.
- 2 P10 L12 Cd concentration in seedling leaves was NOT lower for TL-L, according to Table 1.
- 3 P10 L22 It is not clear what the 'expectation' is from Table 1!

### Examples of review comments - 2:

#### Report on MS 000937 by H.... et al.

This manuscript describes a QTL analysis of physiological traits in sunflower that could potentially be very interesting for publication in JEB. **However, at present the manuscript has major deficiencies** that place serious doubt on the validity of the QTL analysis. These need to be addressed before the manuscript could be considered for publication. **In consequence, the manuscript has been reviewed only as far as the start of the Results section.**

The essential problem is caused by attempting to **analyse traits that are temporally and environmentally highly variable** in a large population of plants and believing that the measurements reflect genetic variation. For example, to measure leaf water potential with a pressure chamber is likely to **take at least 2 min per leaf** - a conservative estimate as the Soil Moisture Equipment Corp. chambers are rather slow to seal and unseal. Therefore, **with a single leaf chamber only about 30 samples could be collected per hour, which means 90 genotypes in 3 h** and if all three replicates were sampled (not stated in the text), that is 9 h. So, **how long a period was regarded as representative of 'pre-dawn' water potential?** What is the dynamics of rehydration of sunflower leaves during the night?

### Examples of review comments - 3:

#### Review of Manuscript by F..... et al. for J Exp Bot

This paper describes agronomic properties of several annual ryegrass accessions under drought stress. **Although the paper more-or-less comes within the remit of the journal's subject matter, it might be more suited to another journal such as European J of Agronomy or Euphytica. In any case, the present version of the manuscript is flawed, and could not be accepted for publication. The major problem with the present version is that the authors have not adequately addressed the apparent objectives of their work.** They talk about high seed production being necessary for good drought adaptation, yet their data do not include seed number per unit area. **They present data only for seed yield, which is not the same thing,** and none of the data for other traits studied and presented in the manuscript allow seed number per unit area to be assessed.

They present an unclear picture of the sort of traits that are associated with drought resistance. **They also confuse adaptation in terms of an active response of the plant to a drought and traits that are constitutively present, such as earliness. They claim a drought resistant morphotype should have an erect habit, yet the seed yield was not significantly correlated with plant habit! Or is drought resistance something else?**

maize (L155 and B432) and compared the responses to **drought** with the **hybrid** between them. **[No clear statement of the research objective.]**

#### Materials and Methods

The inbred maize lines L155 and B432 together with the hybrid between them (called **LxB**) were grown in field trials **[Where?]** for two years under either rainfed conditions or with supplementary irrigation **[How, when and under what conditions was irrigation given? When were seeds sown?]**. Plants were grown in the field at 25 cm spacings in rows spaced at 100 cm, with 20 plants per row and 3 **[numbers less than ten should be spelled out in full – here and elsewhere in the M and M.]** rows per genotype, with 3 replicate plots per treatment. Irrigation was given using overhead sprinklers as necessary **[What does that mean?]**. The first year (2000) was a dry year and second year (2001) was fairly wet **[giving rainfall amounts during the growing season would help.]**.

After thinning to one plant per hill, plants were harvested every two weeks from the five leaf stage **[For how many weeks?]** to measure ABA and chlorophyll content (SPAD meter) in the top fully-expanded leaf. Leaf discs **[how many, of what diameter, and how were they stored until assayed for ABA?]** from 3 plants per genotype were combined for each ABA sample. **[Does that mean only one plant sample was assayed on each occasion, or was there plant replication?]** At the same time, the root pulling force of 3 plants per genotype **[The same 3 plants sampled for ABA or different ones?]** was measured using a root-pulling apparatus constructed according to Heath and Robinson (1995) and used as previously described (Nother et al., 1996). **[So, does it mean that on each sampling occasion only 18 plants were sampled (3 plants of each genotype x 3 genotypes x 2 treatments), or was it 54 plants – 3 plants/genotype x 3 genotypes x 3 replicate plots x 2 treatments? Even if only 18 plants, how was sampling organised to reduce the complication of stress effects on plants increasing during the day?]**

Leaf discs for ABA content were weighed and the FW noted. ABA contents were measured using a monoclonal antibody immunoassay (Quarrie et al., 1988) as described by Mouse and Uck (2003), and are expressed as **ng/gFW**. **[What about assay efficiency?]** Each year at harvest, yield and its components ears/plant, rows per ear, kernels per row and 100 kernel **weight** were recorded on 5 representative plants of each genotype and treatment. **[How was yield assessed in the 3 replicate plots? Was it 5 plants from just one replicate, across all 3 replicates somehow, or actually 5 plants x 3? How were the yield components recorded?]** **[How were the data analysed? How were the 3 replicate plots used to reduce errors?]**

#### Results

**[What about at least a summary of ANOVA showing how the 3 replicate plots varied, and interactions between treatments, years, sampling occasions and genotypes?]**

**[Were there any measures of how stressed plants were at any time?]**

**[Delete - After analysis, the obtained results showed that t]** The irrigation treatment significantly reduced ABA concentrations compared with the rainfed treatment in both years (Table 1, Figures 1, 2 **[Don't show the same data in both tables and figures.]**). The genotype mean data for each sampling occasion of Table 1 show that L155 consistently had more ABA than B432. Leaf ABA concentrations for the hybrid **L x B was were** always in between those for the two parent **inbreds** (Table 1). Because the two years differed in the level of drought expressed, leaf ABA concentrations were considerably higher in 2000 than they were in 2001 (Table 1, Figures 1, 2) **[For both treatments, or only the rainfed treatments? ANOVA would show whether the year differences were significant or not!]**. In the absence of drought stress, overall ABA contents and trends for the 2 years were very similar (irrigated treatment, Figure



### **More information on Abstracts**

Readers of a published article will usually start by reading the abstract to decide whether the main text of the article is of interest to them.

In reality, an abstract may be the only piece of information which a reader can access (e.g. from a literature search).

Therefore an Abstract (which means the same as Summary) must capture the essence of your work: a short version of your **objectives, methods, results, discussion, implications**.

### **Emerald publishers provides helpful guidelines on how to write a good abstract:**

<http://www.emeraldinsight.com/authors/guides/write/abstracts.htm?part=1>

It also gives examples of how *not* to write an abstract:

### **Abstract 1 (example of a poor abstract)**

Computer Assisted Learning (CAL) is an area which is rapidly expanding amongst Higher Education institutions as the power of available hardware rises facilitating new and innovative HE teaching and learning environments. The University Institute of Modern Languages recently allocated funds to stimulate a learning technology program which was generally intended to impinge on all 4 Faculties within the institution. Each faculty was asked to bring forward, software development schemes and bids for equipment and other, necessary resources such as human resources, consumables, etc. The purpose of this paper is to describe the experience of a team of academics in the Department of French, School of Modern Languages within the Faculty of Arts, Humanities and Social Studies at the University Institute of Modern Languages in the development of a Computer-assisted learning software program. Funding was made available from a central source to develop and implement a software program to assist French language learners to acquire vocabulary in "an innovative and measurably effective manner". The software was implemented and tested on a cohort of level 2 students who had, in general, studied French for 8 years, and staff and students were consulted with regards to their reactions.

*Permission to use this article was granted to Emerald publishers by Professor Gabriel Jacobs at the University of Swansea*

### Comments on Abstract 1

“... development of a Computer-assisted learning software program.

Funding was made available from a central source to develop and implement a software program to assist French language learners to acquire vocabulary in "an innovative and measurably effective manner".

The software was implemented and tested on ....”

- Half the abstract is taken up with unnecessary background information about the funding.

“... The purpose of this paper is to describe the experience of a team of academics in the Department of French, School of Modern Languages within the Faculty of Arts, Humanities and Social Studies at the University Institute of Modern Languages in the development of a Computer-assisted learning software program. ...”

- The full title of the department is unnecessary detail. All this is very wordy, and doesn't relate to what the paper is about.

“The purpose of this paper is to describe the experience of a team of academics in the Department of French, School of Modern Languages within the Faculty of Arts, Humanities and Social Studies at the University Institute of Modern Languages in the development of a Computer-assisted learning software program. Funding was made available ....”

- The "purpose" statement could be rephrased: "This paper describes the evaluation of a piece of software designed to assist the acquisition of French vocabulary with a group of level 2 students".

“... innovative and measurably effective manner". The software was implemented and tested on a cohort of level 2 students who had, in general, studied French for 8 years, and staff and students were consulted with regards to their reactions.”

- There needs to be more description of the methodology - how many students? How was the testing done? What, precisely, was evaluated? What were the findings, and what are the implications of the findings?

“Each faculty was asked to bring forward, software development schemes and bids for equipment and other, necessary resources such as human resources, consumables, etc. The purpose of this paper ....”

- The language used is vague - what is meant by "other, necessary resources such as human resources, consumables, etc."? What was the nature of the consultation with staff and students?

- There are also a number of grammatical errors, e.g. commas in the wrong places (substantiate, software development).

### **General comments on Abstract 1**

- "Mock posh" language is used, i.e. the reference to academics (don't need to use this word unless differentiating from administrators).
- In short, the abstract contains much information which is of only marginal importance, and merely repeats, almost word for word, what is in the body text;
- The syntax and punctuation is often defective, verbose and trying too hard to write in an "academic" manner.

### **Abstract 2**

In this article, research as "mass media" (Lerhmann) is appraised. "Videocy" or videoed research results are examined. A form of video research with its roots in action research, Cabalistic methodology and oral anthropology is reported on. The counterparts it produces, wherein disclosure loops are used to produce an effect similar to the fractalizations of reality, achieves a powerful simulation of reality. But is it a "responsible" form of (research) practice?

### **Comments on Abstract 2**

- We are given the paper's purpose but
- nothing about the methodology and
- it doesn't explain the scope of the study.
- It's too short and last but not least,
- it leaves us with a question!!
- No summary of results or conclusions are given.
- An abstract shouldn't be like an advertisement or cliff hanger in a TV serial.
- The language is abstruse [obscure],... and out of context it's fairly meaningless.