

HOW TO WRITE A WORLD CLASS PAPER

'A JOURNEY'

WAY, TIPS AND TRAPS

Dra. Miroslava Rakočević



Outline

- What to do before you start writing a paper?
- How to write a quality paper?
 - Structure;
 - Language;
 - Technical details;
 - Cover letter.
- **General guide.**
- **How to prepare the manuscript for a journal?**



Looking back on your research

Before start a
journey!



What to do
before
you start
writing
a paper?

1. Have you done something new and interesting?
2. Have you checked the latest results in the field?
3. Have the findings been verified by appropriate analysis and their significance verified?
4. Are the methods/measurements valid and reliable?
5. Can you describe the scope and limitations of the methods?
6. Do your findings tell a nice story, or is the story incomplete?
7. Is the work directly related to a current hot topic?
8. Have you provided solutions to any difficult problems?

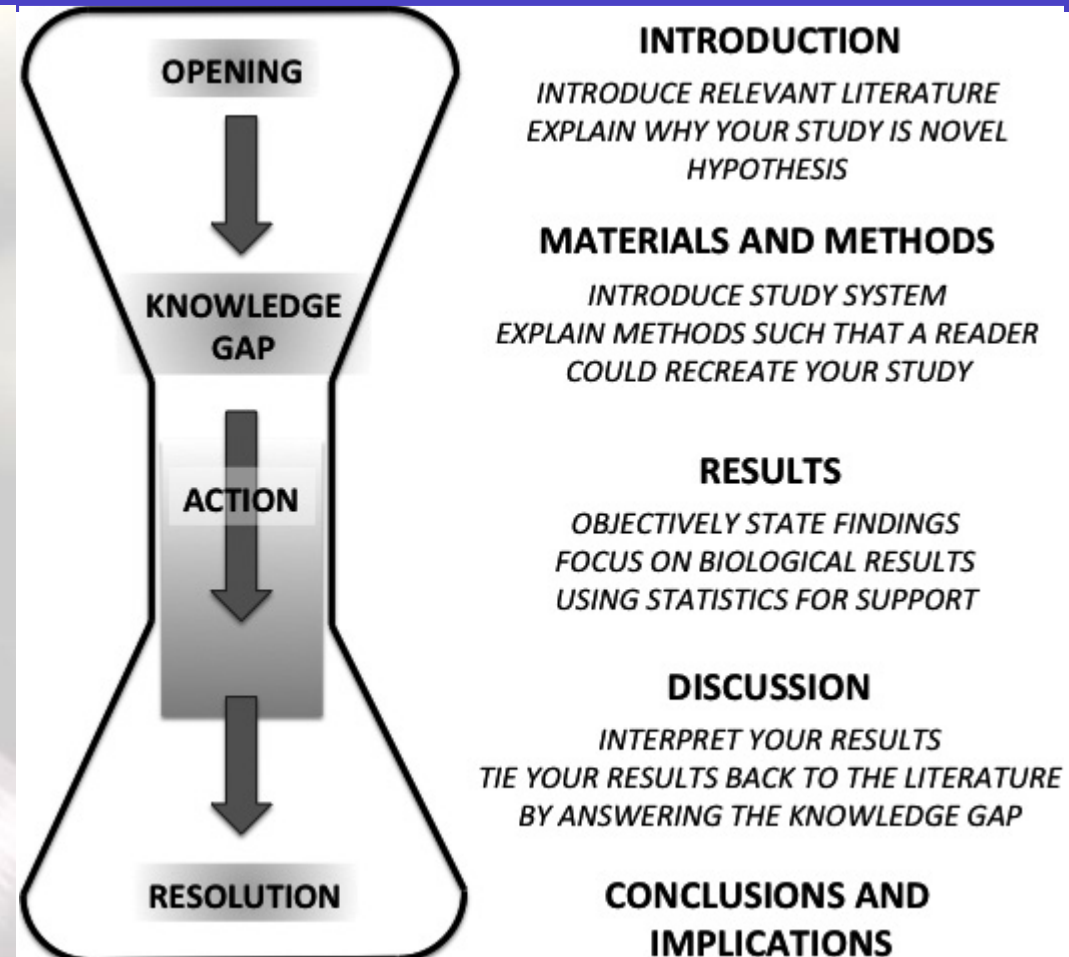
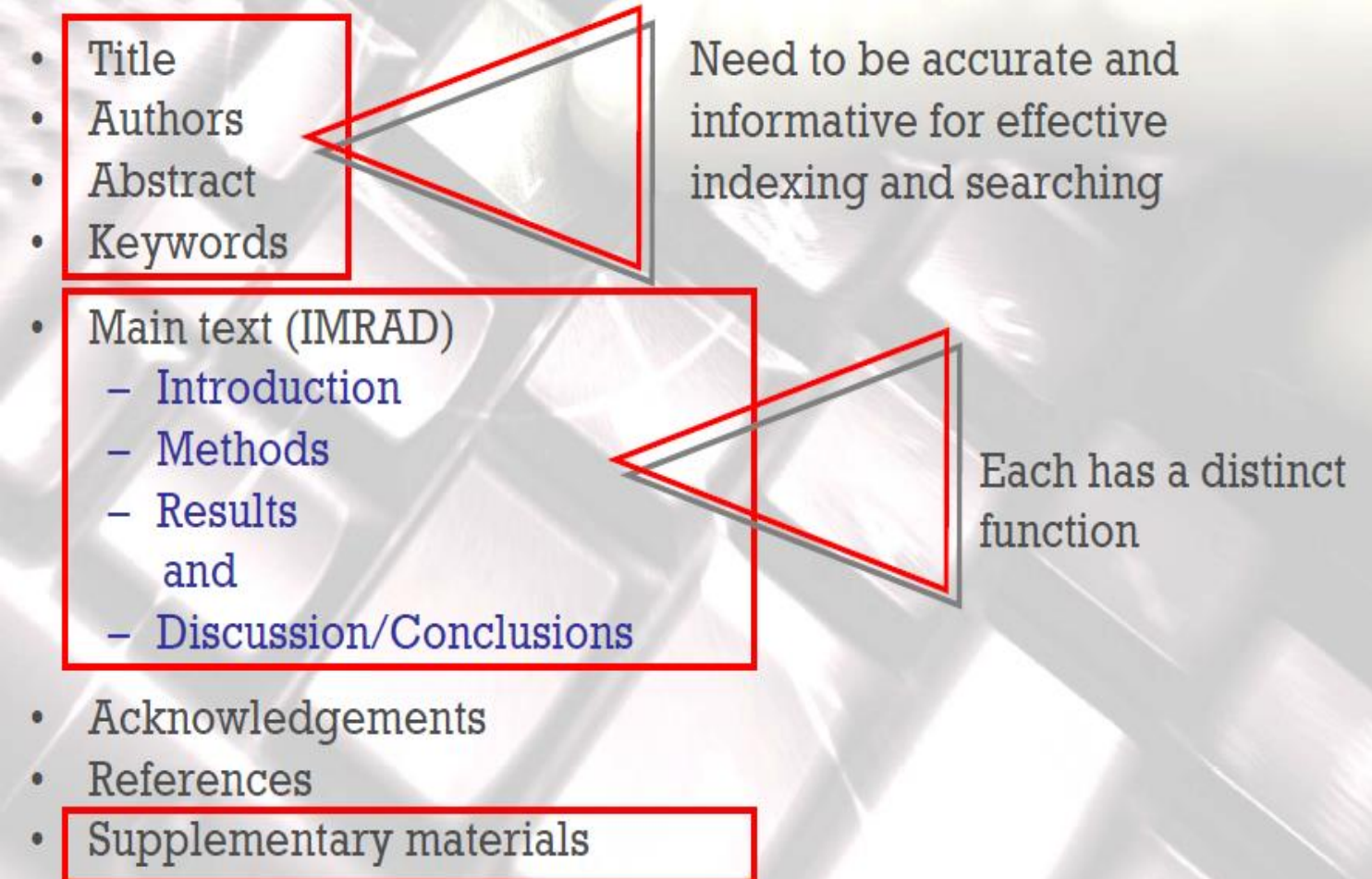
If all answers are “yes”, then start preparing your manuscript.

Let's start a journey!

How to write a quality paper?

Two questions for you:

- What is IMRAD?
- Which part should you start with?



Write in a different order

Let's start a journey!

1. **Material and methods**

2. **Results**

3. **Introduction**

4. **Discussion and Conclusion**

5. **Abstract**

6. **Title**

MATERIAL & METHODS (M&M)

Beginning of the journey!

The M&M section should be one of the bulk of the paper and it must provide **sufficient information**, so that a knowledgeable reader can **reproduce** the experiment.

The M&M section can be generally divided into several specific parts:

1. Describe the material, climate and conditions.
2. Describe a method of sampling.
3. Describe the instrumentation and procedures and if relevant, the time frame.
 - If possible, follow lately the same order in Results and Discussion!
4. Describe the analysis plan (experimental design together with repetitions).
5. Describe statistics (details as program, packages, variables for each analyses).



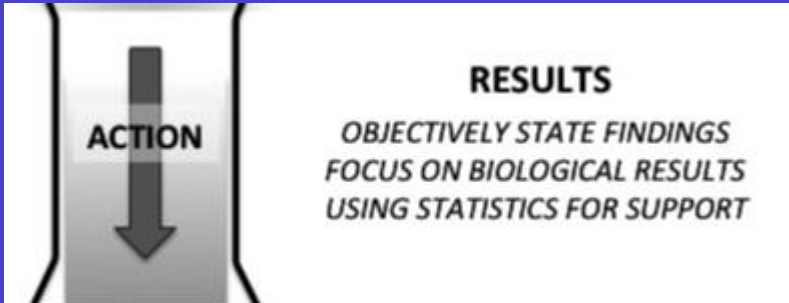
M&M



1. Be detailed, but not describe in detail any previously published procedures. Those can be noted or described in the References or Supporting Material sections.

2. Identify the equipment and materials used (model, producer, city, state, country). Why? Because the source of the materials or equipment can be used if there is the chance for variability of quality of these items.

3. Identify the management details (fertilization, irrigations, pest/disease control).



Results

DO

- Use figures and tables to summarize data.
- Show the results of statistical analysis.
- Shortly expose, the most directly possible, results in the text.

DON'T

- Duplicate data among tables, and figures.
- Use graphics/tables to illustrate data that can easily be summarized with text.

Charts/ Graphics/ Figures/ Tables

“Readers... often look at the graphics first and many times go no further. Therefore, the authors should be particularly sensitive to inclusion of clear and informative graphics.”

Figures and tables are the most effective way to present results.

BUT:

- Captions should **be able to stand alone**, such that the **figures and tables** are understandable without the need to read the entire manuscript (**ms**).
- Captions should not contain extensive experimental details that can be found in the M&M section.
- The data represented should be easy to interpret.
- Color should be used today, when the world is ‘digitized’, especially in graphs.

Statistics

- Indicate the statistical tests used with all relevant parameters (**mean \pm SD, or \pm SE**).
- Use medians and/or inter-percentile ranges to report skewed data.
- Indicate the significance of the p-values: **‘***’ $<$ 0.001, ‘**’ $<$ 0.01, ‘*’ $<$ 0.05, ‘ns’ not significant.**
- Report the exact *P* values - **p=0.0035 rather than p $<$ 0.05.**
- The word “**significant**” should only be used to describe “statistically significant differences”. *Not significant are not always important to mention.*



Introduction

The Introduction is used to provide **context** for your manuscript and convince readers because your work would be useful in advancing that field of study.

Clearly address the following:

1. What is the problem you are ultimately trying to solve?
2. Briefly mention about knowledge of all actions that you had done.
3. What is the **gap**?
4. What is(are) the **hypothesi(e)s**?
5. What is your work trying to achieve to find solutions - **AIMS**?

Introduction

What is a Hypothesis?

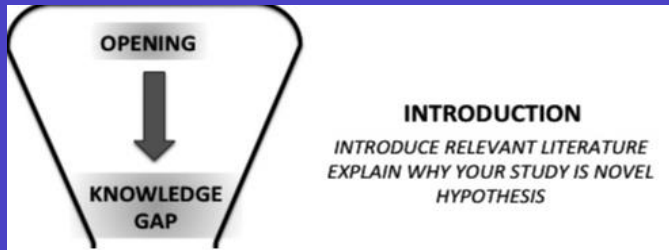


INTRODUCTION
INTRODUCE RELEVANT LITERATURE
EXPLAIN WHY YOUR STUDY IS NOVEL
HYPOTHESIS

The hypothesis is a predictive, testable statement predicting the outcome and the results the researcher expects to find.

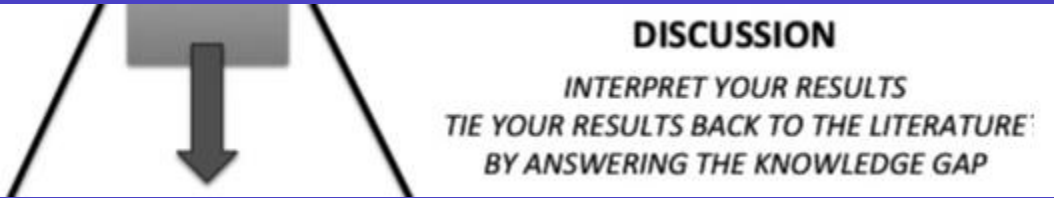
The hypothesis provides a summary of what **direction, if any, is taken** to investigate a theory (or assumptions).

In scientific research, there is a criterion that hypotheses need to be met to be regarded as acceptable (link to previous statements).



Tips for Introduction

- 1. Be brief.** Long introductions put readers off. Try **NOT TO** make this section into a history lesson.
- 2. Cite a couple of original and important works, including recent review articles. However, editors DO NOT LIKE too many citations to references irrelevant to the work, or inappropriate judgments on your own achievements.**
- 3. DO NOT ignore contradictory studies or work by competitors.**
- 4. DO NOT mix** introduction with results, discussion, and conclusion or your data. Always keep them separate to ensure that the manuscript flows logically from one section to the next.
- 5. Define any non-standard abbreviations and jargon.**
- 6. Provide a perspective that is consistent with the journal that you are submitting to.**



Discussion

This is the most important section of the article. It is where you get the chance to SELL your data!

Show maturity!

DESCRIBE:

- What is the novelty of your work?
- **What your results mean?**
 - **...ecology, agronomy, biology, breeding...**
- **Were the methods successful?**
- **How did the findings relate to those of other studies?**
- **Did you respond to hypotheses?**
- **Were there limitations of the study?**



Tips for Discussion

DISCUSSION

INTERPRET YOUR RESULTS
TIE YOUR RESULTS BACK TO THE LITERATURE
BY ANSWERING THE KNOWLEDGE GAP

1. Make the Discussion corresponded to the Results. **BUT DO NOT reiterate the results.**
2. **DO NOT** make “grand statements” that are not supported by the methods or the results.
 - Example: “This novel treatment will massively reduce the hunger in the third world”.
3. **DO NOT** introduce of new terms not mentioned previously in your paper.
4. **AVOID** unspecific expressions such as “higher temperature” or “at a lower rate”; USE quantitative descriptions,
5. **Speculations on possible interpretations are allowed.** BUT these should be rooted in fact, rather than imagination.
6. Compare the published results with your own. **BUT DO NOT ignore work in disagreement with yours** – confront it and convince the reader that you are correct or better.

Conclusions



Describe:

- **How your work advances the field?**
- **Did you respond to your hypotheses?**
- **Indicate applications of your work.**
- **Suggest future experiments that build on your work :**
 - **Every thesis must open the questions for at least three new thesis.**

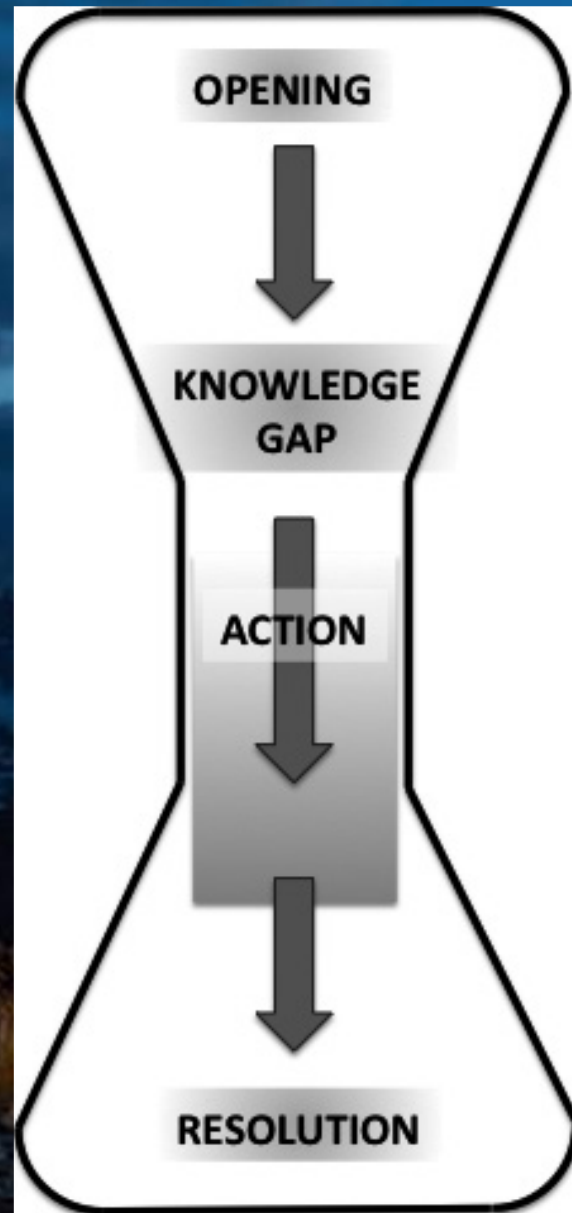
Tips for Conclusions

Better to avoid:

- Downplaying negative results.
- Making statements based on your personal opinion, without scientific support.
- Repeating other sections.
- Over-emphasizing the impact of your study.

Example:

*Although the statistical analysis did **not provide a reasonable level of significance**, we believe that the methodology is a **valid approach** towards the design of new wastewater treatment facilities. In fact, we argue that these methods could be adopted to the design of any treatment system **worldwide**.”*



INTRODUCTION

*INTRODUCE RELEVANT LITERATURE
EXPLAIN WHY YOUR STUDY IS NOVEL
HYPOTHESIS*

MATERIALS AND METHODS

*INTRODUCE STUDY SYSTEM
EXPLAIN METHODS SUCH THAT A READER
COULD RECREATE YOUR STUDY*

RESULTS

*OBJECTIVELY STATE FINDINGS
FOCUS ON BIOLOGICAL RESULTS
USING STATISTICS FOR SUPPORT*

DISCUSSION

*INTERPRET YOUR RESULTS
TIE YOUR RESULTS BACK TO THE LITERATURE
BY ANSWERING THE KNOWLEDGE GAP*

CONCLUSIONS AND IMPLICATIONS

Abstract

- **Indicative (descriptive) abstracts** outline the topics covered in a piece of writing so the reader can decide whether or not to read on. Often used in review articles and conference reports.
- **Informative abstracts** summarize the article based on the paper structure (problem, methods, case studies, conclusions), but without section headings.
- **Structured abstracts** follow headings required by the journal. Used in *Annals of Botany*.
- **Check carefully which type fits the journal of your choice.**

Abstract

The quality of an abstract will strongly influence the editor's decision.

A good abstract:

- • **Is precise and honest.**
- • **Can stand alone.**
- • **Is brief and specific.**
- • **Uses no technical jargon.**
- • **Minimizes the use of abbreviations.**
- • **Cites no references.**

Use the abstract to “sell” your article.

Key words



- **Most journals require authors to select 4-8 keywords (or phrases) to accompany a manuscript to facilitate online searches.**
- **Keywords depend on journal demands, reader audience...**
- **Carefully read keywords used in few last years in the chosen journal.**

The title page (visit card)

Always

- Tipe of article.
- Article title.
- Author names.
- Author affiliations.
- Corresponding author(s) information.

Optional

Depending on Journal Guidelines

- Running title (~45-50 characters with spaces).
- Footnotes:
Grant support, Conflict of Interest (Declaration of commercial interest), Authorship, Statement of author death.
- Keywords.
- List of Abbreviations.
- Miscellaneous (word count -6000, number of illustrations/tables, number of color illustrations....).



Title

A good title should contain the **fewest** possible words that **adequately** describe the contents of a paper

Normally, up to 15

DO

- Convey main findings of research.
- Be specific.
- Be concise.
- Be complete.
- Attract readers.

DON'T

- Use unnecessary jargon.
- Use uncommon abbreviations.
- Use ambiguous terms.
- Use unnecessary detail.
- Focus on part of the content only.

Highlights

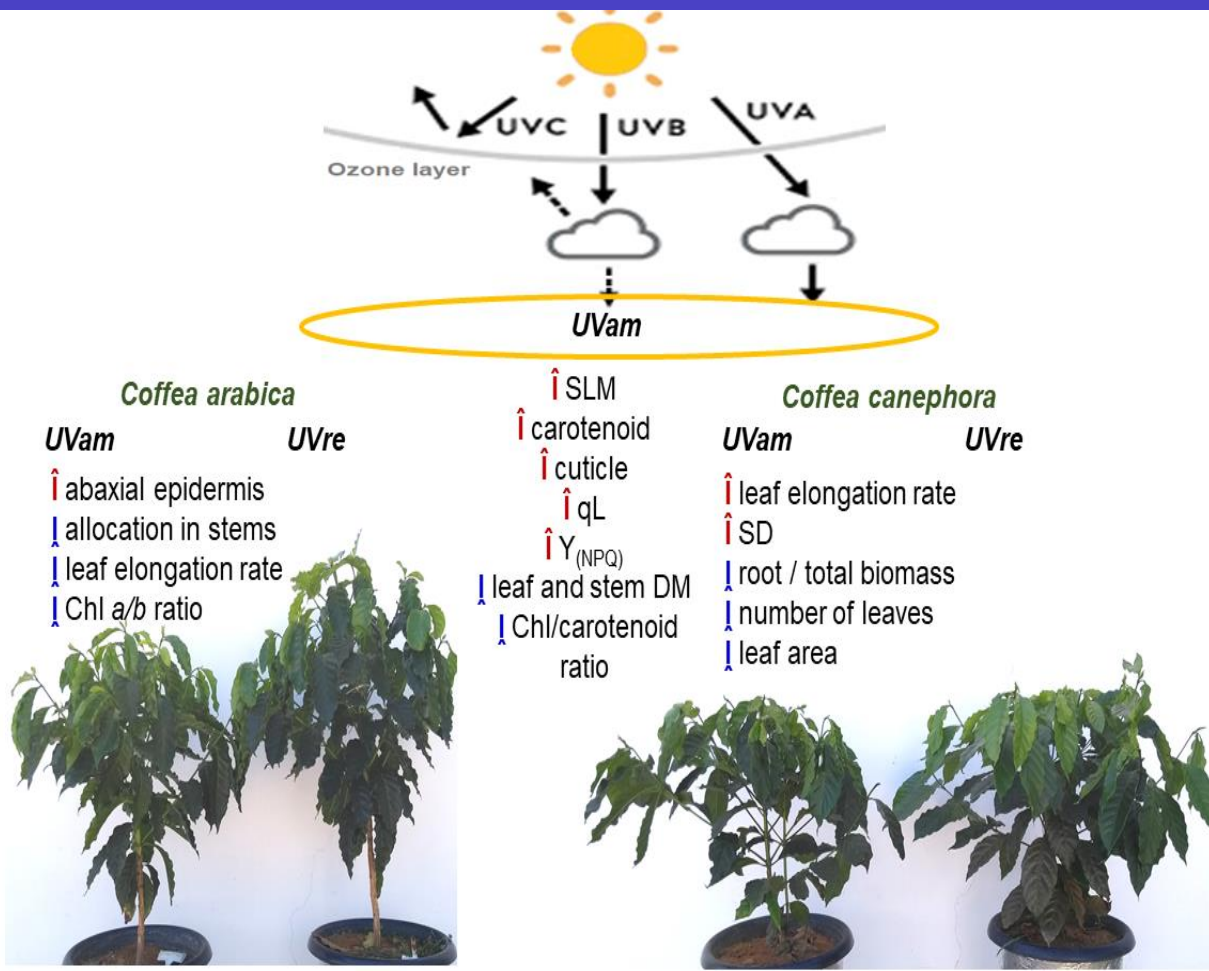
*Highlights are typically **written as 3–5 bullet points, each a complete sentence that describes a main result or conclusion of the study.***

Confirm:

- Should they be written for experts in this field, scientists in various fields, or for the general public?
- Should they focus on the results, conclusions, significance, or all of these?
- Should they be written as short, individual points or as a paragraph?
- What are the minimum and maximum lengths (**~85 characters with spaces**)?

Many times, the highlights will appear at the beginning of the article or even in the Table of Contents, so it will be the first thing the reader sees after your title.

Graphical abstract



- Journals are increasingly requesting the submission of a “**graphical**” or “**visual abstract**” alongside the body of the article.
- **A single, concise, pictorial and visual summary of the main findings of the article.**
- It could either be the **concluding figure** from the article or **better still a figure that is specially designed for the purpose**, which captures the content of the article for readers at a single glance.



The main effects of elevated CO₂ and soil-water deficiency on ¹H NMR-based metabolic fingerprints of *Coffea arabica* beans by factorial and mixture design



Gustavo Galo Marcheafave^{a,*}, Cláudia Domiciano Tormena^a, Lavinia Eduarda Mattos^a, Vanessa Rocha Liberatti^b, Anna Beatriz Sabino Ferrari^b, Miroslava Rakocevic^{c,d}, Roy Edward Bruns^e, Ieda Spacino Scarmínio^{a,*}, Elis Daiane Pauli^e

^a Laboratory of Chemometrics in Natural Sciences (LQCN), Department of Chemistry, State University of Londrina, CP 6001, 86051-990 Londrina, PR, Brazil

^b Department of Chemistry, State University of Londrina, CP 6001, 86051-990 Londrina, PR, Brazil

^c Northern Rio de Janeiro State University - UENF, Plant Physiology Lab, Av. Alberto Lamego 2000, 28013-602 Campos dos Goytacazes, RJ, Brazil

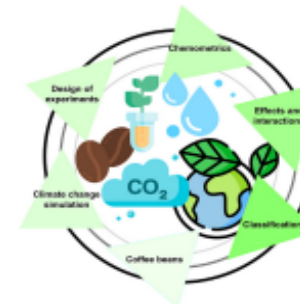
^d Embrapa Environment, Rodovia SP 340, Km 127.5, 13820-000 Jaguariúna, SP, Brazil

^e Institute of Chemistry, State University of Campinas, CP 6154, 13083-970 Campinas, SP, Brazil

HIGHLIGHTS

- ¹H NMR *C. arabica* bean fingerprint changes evaluated by chemometric methods.
- Elevated CO₂ levels provoke significant changes in ¹H NMR *C. arabica* bean fingerprints.
- Chemometric models find key metabolites owing to carbon dioxide increase.
- Coffee tree vertical profile does not affect bean classification.
- Strategy to achieve global chemical profile of food has been demonstrated.

GRAPHICAL ABSTRACT



ARTICLE INFO

Article history:

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Editor: Filip M.G. Tack

Keywords:

Climate changes

Carbon dioxide

Coffea arabica L.

Statistical mixture design

ABSTRACT

The metabolic response of *Coffea arabica* trees in the face of the rising atmospheric concentration of carbon dioxide (CO₂) combined with the reduction in soil-water availability is complex due to the various (bio)chemical feedbacks. Modern analytical tools and the experimental advance of agronomic science tend to advance in the understanding of the metabolic complexity of plants. In this work, *Coffea arabica* trees were grown in a Free-Air Carbon Dioxide Enrichment dispositive under factorial design (2²) conditions considering two CO₂ levels and two soil-water availabilities. The ¹H NMR mixture design-fingerprinting effects of CO₂ and soil-water levels on beans were strategically investigated using the principal component analysis (PCA), analysis of variance (ANOVA) - simultaneous component analysis (ASCA) and partial least squares-discriminant analysis (PLS-DA). From the ASCA, the CO₂ factor had a significant effect on changing the ¹H NMR profile of fingerprints. The soil-water factor and interaction (CO₂ × soil-water) were not significant. ¹H NMR fingerprints with PCA, ASCA and PLS-DA analysis determined spectral profiles for fatty acids, caffeine, trigonelline and glucose increases in beans from current CO₂, while quinic acid/chlorogenic acids, malic acid and kahweol/cafestol increased in coffee

* Corresponding authors.

E-mail addresses: ggalo@uel.br (G.G. Marcheafave), ieda@uel.br (I.S. Scarmínio).

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Acknowledge anyone who has helped you with the study, including:

- **Financial supporters,**
- **Farmers,**
- **Suppliers who may have given materials,**
- **Proofreaders, reviewers...**

State why people have been acknowledged and ask their permission.

Not necessary to acknowledge your university/institute, because your name is tied. As you are thanking to yourself 😊

REFERENCES

Check the style and format as required – it is not the editor's or reviewer's job to do so for you.

Avoid

- **Too many references.**
- **Excessive self-citations.**
- **Excessive citations of publications from the same region.**
- **Personal communications, unpublished observations, and submitted manuscripts not yet accepted.**
- **Citing articles published only in the local language.**

Check

- **Spelling of author names.**
- **Punctuation.**
- **Number of authors to include before using “et al.”**
- **Reference style.**

Individual contributions

- **For transparency, authors are encouraged to submit an author statement file outlining their individual contributions to the paper using the relevant **CReditT** roles:**
 - *Conceptualization;*
 - *Data curation;*
 - *Formal analysis;*
 - *Funding acquisition;*
 - *Investigation;*
 - *Methodology;*
 - *Project administration;*
 - *Resources;*
 - *Software;*
 - *Supervision;*
 - *Validation; Visualization;*
 - *Writing - original draft;*
 - *Writing - review & editing.*
- **Authorship statements should be formatted with the **names of authors first and CReditT** role(s) following.**

General style

NÃO
VAI CAIR NO
ENEM

- **One paragraph is one idea!!!**
 - In 'Introduction' and 'Discussion' - introduce, develop and conclude the exposed ideas in every paragraph.
 - Never start one paragraph with 'Because of that', 'However' because those words are used to tie to previous phrase.
- **Always finish the idea – comparison:**
 - *Coffee beans in AI were bigger than in Clementino.*
 - *The biggest coffee beans were found in AI.*
- **Numbers up to twelve – words, higher – numerically.**
- 'Between' and 'among'.
- **Use verbs in past for your results, and in present for previously published.**
- Always use the same terminology, to facilitate the lecture.
- Align figures in panels, never use '.' to separate measurement. Use max nine points at y-axis.
- **Organize the references by year of publication (in parenthesis) in 'Introduction' and 'Discussion'.**
- **Do not traduce and re-traduce!!!!**

Thinking over your goals in preparation for one journal








- 1. What type of manuscript?**
- 2. Who is your audience?**
- 3. Which journal?**

An Example of Guide for Authors



ISSN: 0167-8809
Imprint: ELSEVIER

Actions

-  Submit Article
-  Order Journal
-  Free Sample Issue
-  Recommend to Friend
-  Bookmark this Page

Guide for Authors



An International Journal for Scientific Research on the Interaction Between Agroecosystems and the Environment

INTRODUCTION

- Types of papers

BEFORE YOU BEGIN

- Ethics in Publishing
- Conflict of interest
- Submission declaration
- Copyright
- Retained author rights
- Role of the funding source
- Funding body agreements and policies
- Language and language services

- Submission

- Referees

PREPARATION

- Use of wordprocessing software
- Article structure
- Essential title page information
- Abstract
- Keywords
- Acknowledgements
- Math formulae
- Footnotes

- Artwork

- Tables

- References

- Supplementary material

- Submission checklist

AFTER ACCEPTANCE

- Use of the Digital Object Identifier
- Proofs
- Offprints

AUTHOR INQUIRIES

REMEMBER THAT:

Consulting the **GUIDE FOR AUTHORS** will save your time, the editor's and the reviewer's too

All editors and reviewers hate wasting time on poorly prepared manuscripts:

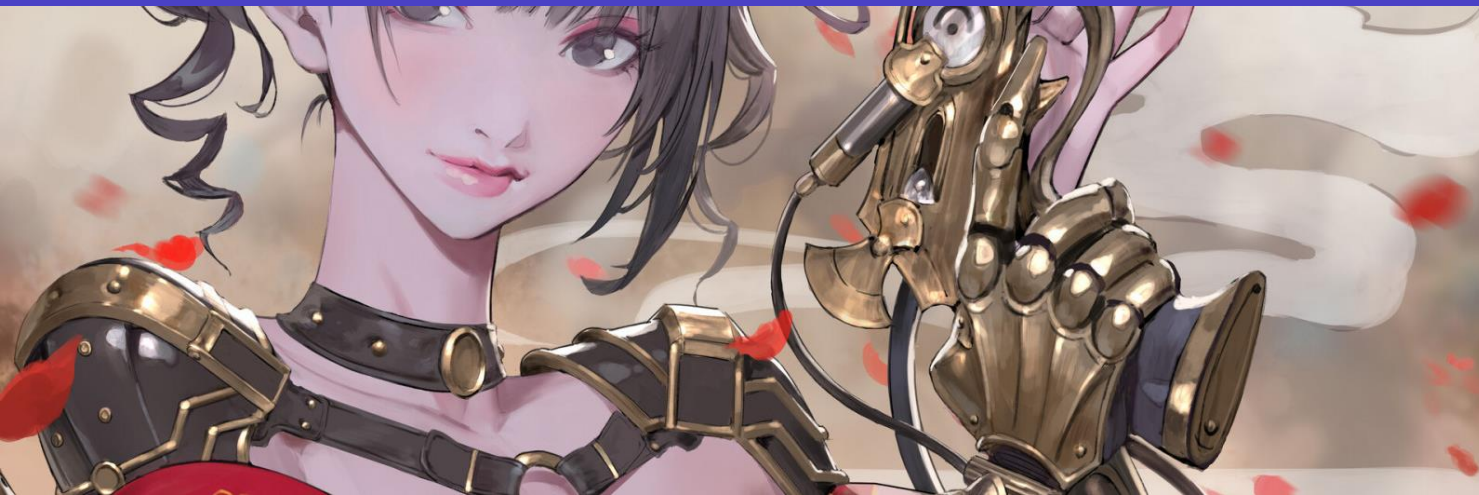
It is a sign of **DISRESPECT**



What to do when you finish a paper?

What can I do to ensure my paper is in the best possible state prior to submission?

- Ask colleagues to look and be critical.
- Check that everything meets the requirements - **GUIDE FOR AUTHORS – again!**
- **Check that the scope of the paper is appropriate for the selected journal – change journal rather than submit inappropriately.**



Think about the people in the world who can review your work

You need to read, read and read

- **Important in the domain:**
 - Add name, e-mail and professional addresses;
 - Why them in 50-100 characters?
- **Researchers that you are not publishing with at least 2-4 years.**

Suggested Reviewers:

José Manuel Moutinho Pereira, PhD
Associate Professor, University of Tras-os-Montes and Alto Douro
moutinho@utad.pt
Physiology of kaolin effects

R. R. Sharma, PhD
Researcher, Indian Agricultural Research Institute
rrs_fht@rediffmail.com
Experiences in Kaolin and fruit productivity responses

Adolfo Rosati, PhD
Istituto Sperimentale per l'Olivicoltura
adolfo.rosati@entecra.it
Great experience with kaolin protection

Tommaso Frioni, PhD
Professor, University of Milano, Faculty of Agricultural and Food Sciences Piacenza
tommaso.frioni@unicatt.it
Horticulture, ecophysiology and kaolin protection experiences

Carlos Andrés Muñoz Unigarro, PhD
Researcher, National Centre of Coffee Research
andresunigarro@gmail.com
Great experience with coffee culture, even kaolin protection of seedlings

Hua Wang, PhD
Researcher, Northwest A&F University
wanghua@nwafu.edu.cn
Experience with kaolin

COVER LETTER

Include:

- Editor name – address to journal editor, not generic.
- First sentence – provide title, author list and journal name.
- **Briefly describe:**
 - the main findings of your research;
 - the significance of your research.

Tips:

- Confirm the originality of the submission and what your purpose is.
- Mention what would make your manuscript worthwhile to the journal.
- **DO NOT** summarize your manuscript or repeat the abstract.
- State the **final approval of all co-authors**, as well as if your manuscript has been **previously rejected**.

WARNING

What the readers look at first before deciding to read

Abstract

Title

Visual information

Literature references

Key words

Conclusion part of the paper

Cover letter

Things an editor looks at



What the editor and publisher want?



WANTED

- **Originality.**
- **Significant advances in field.**
- **Appropriate methods, case studies and conclusions.**
- **Readability.**
- **Studies that meet ethical standards.**



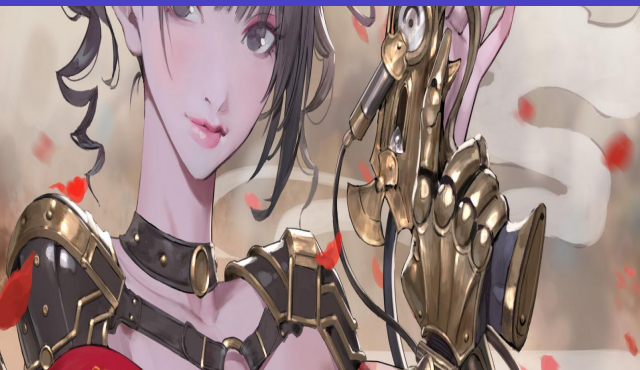
NOT WANTED

- **Duplications.**
- **Reports of no scientific interest.**
- **Work out of date.**
- **Inappropriate/incomplete methods or conclusions.**
- **Studies with insufficient data.**

Accepting rejection

Don't take it personally!

- Try to understand why the paper has been rejected
- Evaluate honestly – will your paper meet the journal's requirements with the addition of more data or is another journal more appropriate?
- Don't resubmit elsewhere without significant revisions addressing the reasons for rejection and checking the **new GUIDE FOR AUTHORS.**



Thanks

mimarako@unicamp.br

mima.rakocevic61@gmail.com

