Writing a research article

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Master and PhD in Science and Regional Development

- Acuicultura
- Biopolímeros
- Bioquímica
- Biotecnología
- Ciencia y tecnología de los alimentos
- Ecología y medio ambiente
- Horticultura
- Microbiología
- Nutrición
- Toxicología

The scientific paper has developed over the past three centuries into a tool to communicate the results of scientific inquiry.

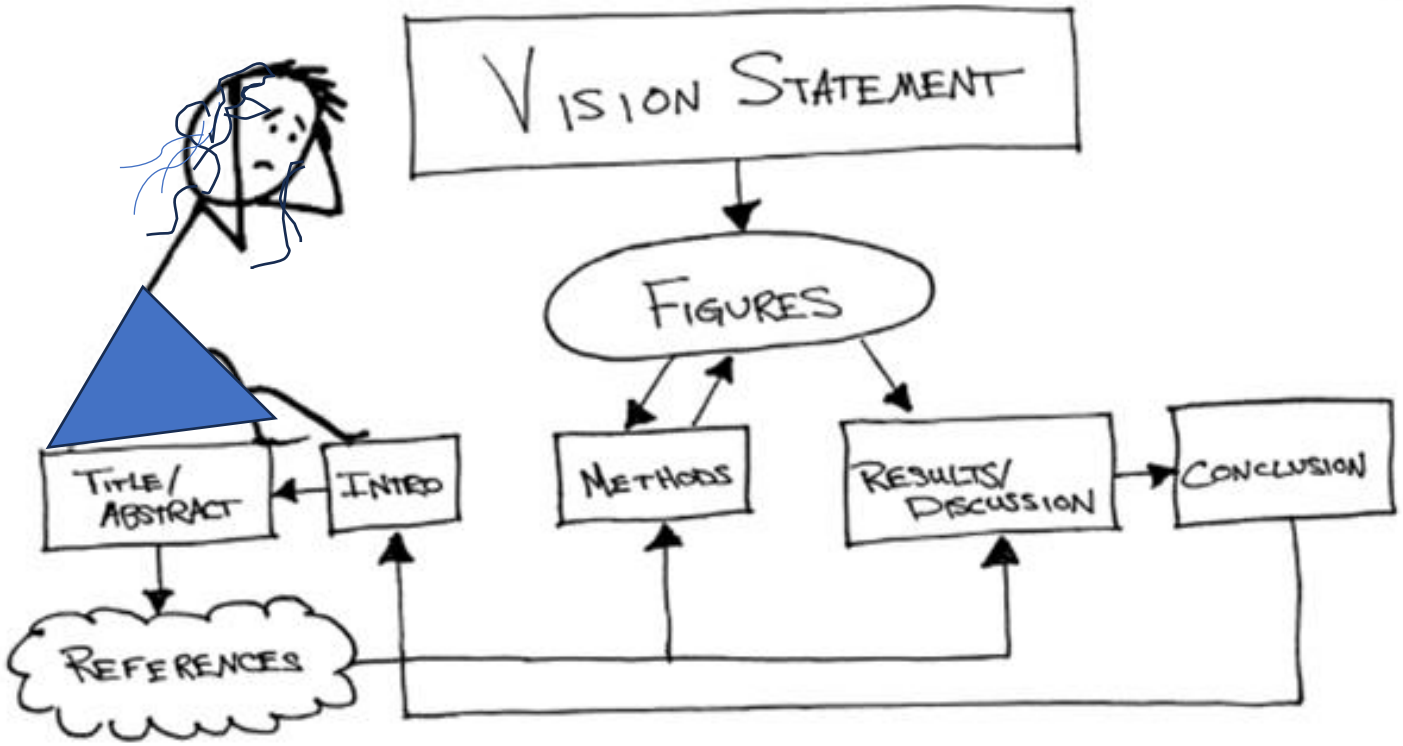
The main audience for scientific papers is extremely specialized.

The purpose of these papers is twofold: to present information so that it is easy to retrieve, and to present enough information that the reader can duplicate the scientific study.

https://writing.colostate.edu/guides/guide.cfm?guideid=83

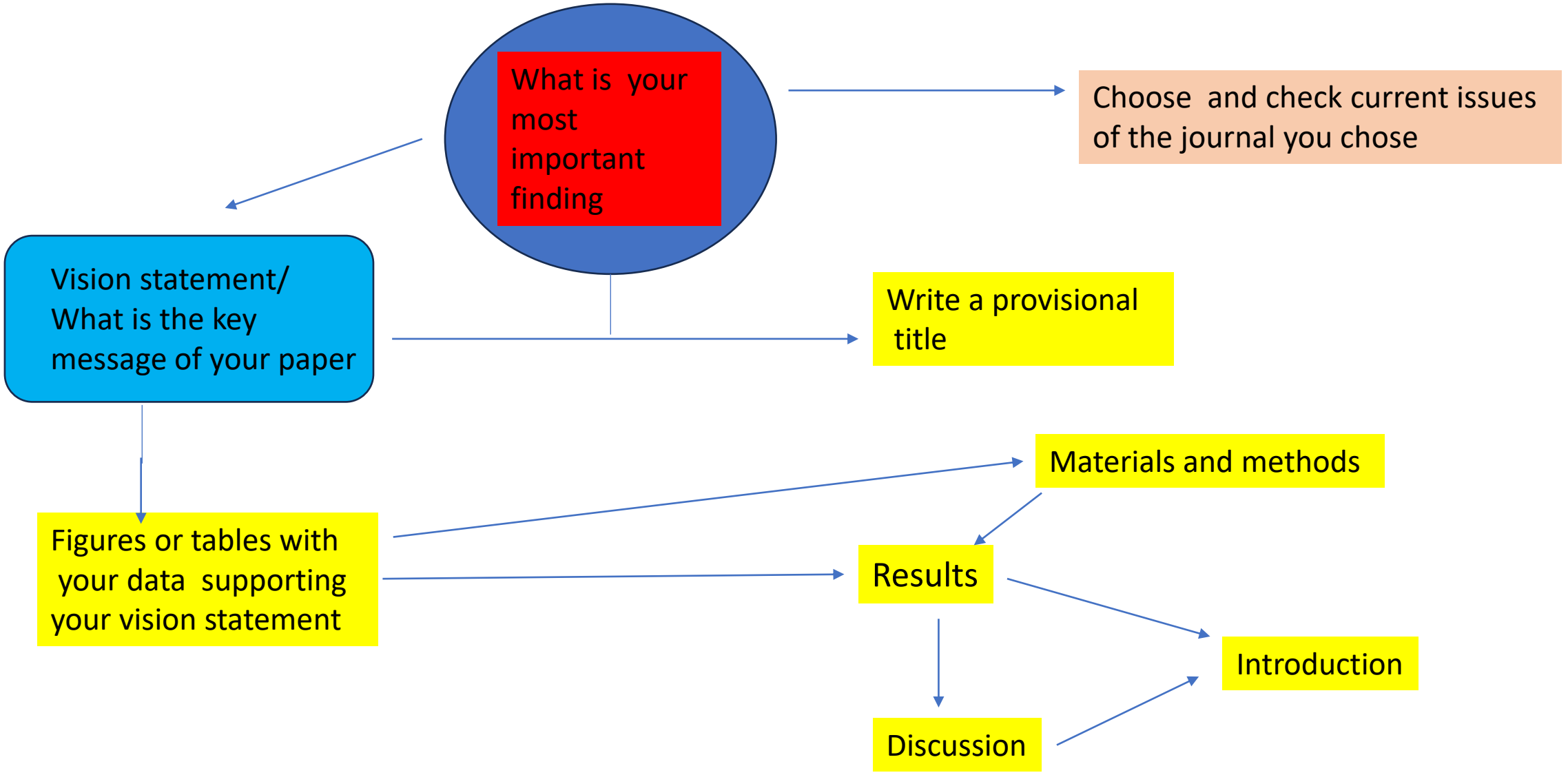
- Title--subject and what aspect of the subject was studied.
- Abstract--summary of paper: The main reason for the study, the primary results, the main conclusions.
- Introduction--why the study was undertaken
- Methods and Materials--how the study was undertaken
- Results--what was found
- Discussion--why these results could be significant (what the reasons might be for the patterns found or not found)

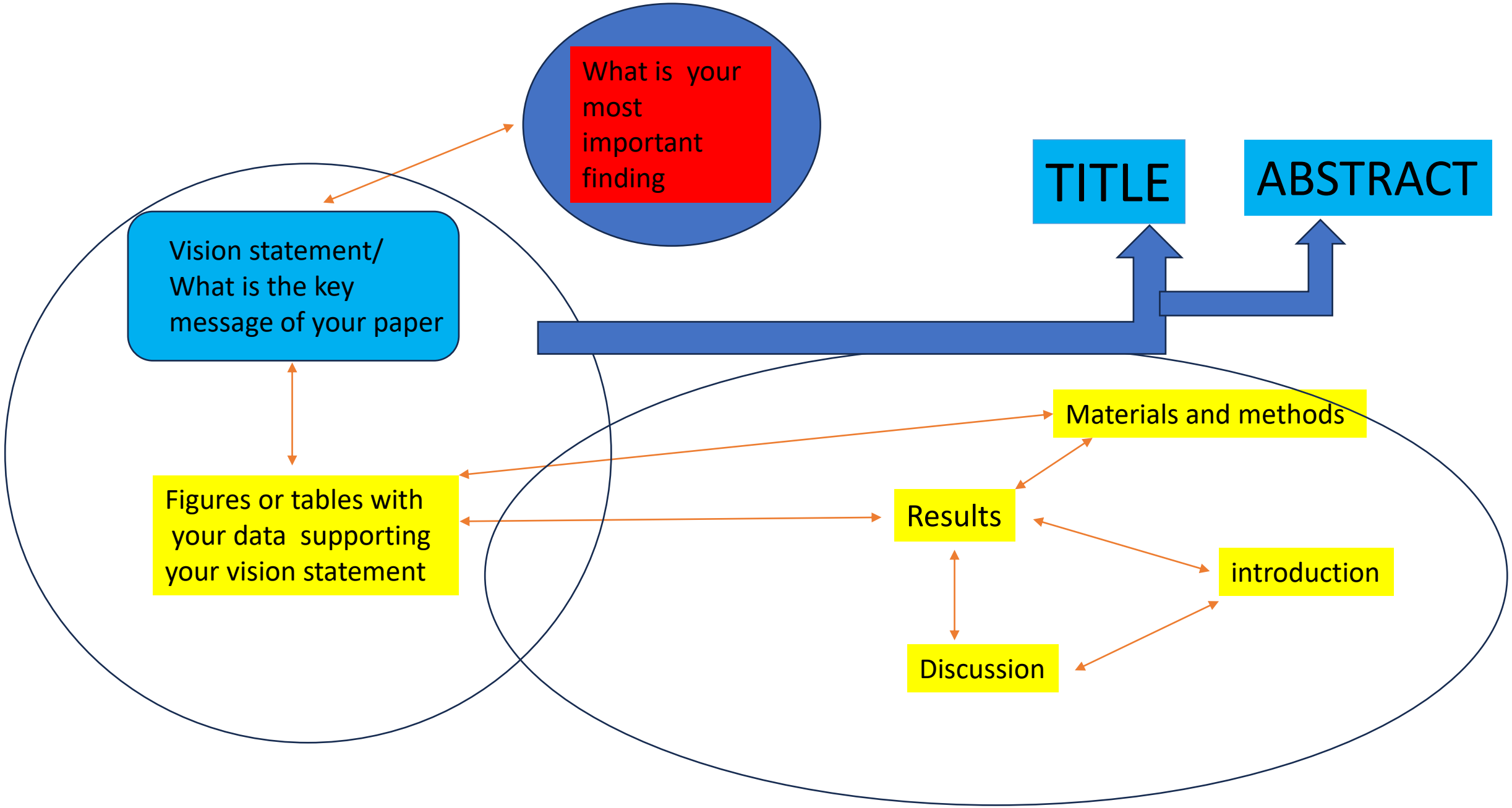
Writing a scientific paper



https://spie.org/news/photonics-focus/janfeb-2020/how-to-write-a-scientific-paper?SSO=1

There is not a unique way, everybody will develop her own way to write a research paper.


What is your most important finding
Choose and check current issues of the journal you chose
Vision statement/ What is the key message of your paper
Write a provisional title
Materials and methods
Figures or tables with your data supporting your vision statement
Results
Introduction
Discussion


What is your most important finding
TITLE
ABSTRACT
Vision statement/ What is the key message of your paper
Materials and methods
Figures or tables with your data supporting your vision statement
Results
introduction
Discussion

Vision statement/
What is the key message of your paper

The current paper aims to investigate the virus transmission mechanisms in urban buses. Sneezing and coughing are analyzed through Lagrangian methods in order to visualize the spread of droplets. On the other hand, the spread of aerosols due to breathing and talking is addressed through Eulerian methods combined with the WR model. Several locations for the infected passenger are considered, and the effect of the HVAC and the air renewal ratio is studied in depth by considering different operative conditions.

Ramajo, D.E., Corzo, S. (2022). Airborne Transmission Risk in Urban Buses: A Computational Fluid Dynamics Study. Aerosol Air Qual. Res. 22, 210334. https://doi.org/10.4209/aaqr.210334

Figures or tables with your data supporting your vision statement

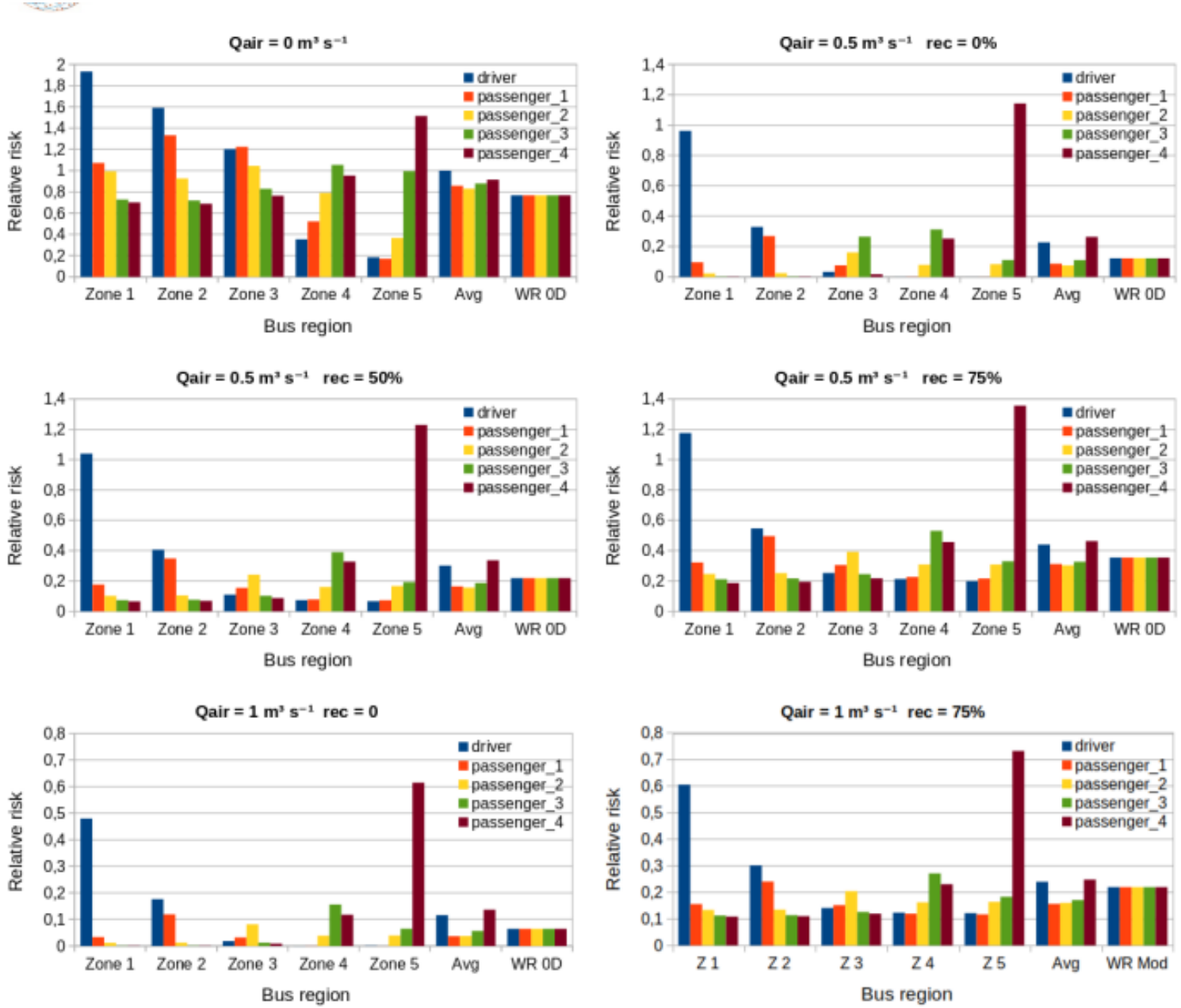


Fig. 12. Relative risk estimation in each zone (Q_{air} = 0, 0.5 m^3 s^{-1} and 1.0 m^3 s^{-1}, γ_{rec} = 0, 50%, and 75%) after 20 min.

Epiphytic microbiota in Swedish grass-clover herbage and the effect of silage additives on fermentation profiles and bacterial community compositions of the resulting silages

Abstract

Aims: To investigate the epiphytic microbiota in grass-clover herbage harvested at different sites and occasions and to explore the effect of different silage additives on the resulting silage microbiota.

Methods and results: Herbage was harvested from grass-clover leys at geographically distributed sites in a long-term field experiment in Sweden, in early and late season of two consecutive years. Different silages were made from the herbage using: (1) noadditive,(2)acid-treatment, and (3) inoculation by starter culture. Herbages were analysed for botanical and chemical composition,and the resulting silages for products of fermentation. Bacterial DNA was extracted from herbage and silage samples, followed by sequencing using Illumina16SrRNA amplicon sequencing. Herbage microbiota showed no clear correlation to site or harvesting time. Silage additives had a major effect on the ensiling process; inoculation resulted in well fermented silages comprising a homogenous microbiota dominated by the genera *Lactobacillus* and *Pediococcus*. A minor effect of harvest time was also observed, with generally a more diverse microbiota in second-harvest silages. Untreated silages showed a higher relative abundance (RA) from non-lactic acid bacteria compared to acid-treated silages. In most silages, only a few bacterial amplicon sequence variants contributed to most of the RA.

Conclusions: The epiphytic microbiota ingrass-clover herbage were found to be random and not dependent on site. From a microbial point of view,the most predictable and preferible silage outcome was obtained by inoculation with a starter culture.Acid-treatment with formic-and propionic acid surprisingly resulted in a les preferible silage. Silage making without additives can not be recommended based on our results.

Impact Statement This study contributes with new insights into the effect of different factors (e.g.herbage composition, site, harvest time,and year) on the microbiota in herbage and the resulting silages,including the effects of different silage-making methods on silage microbiota and quality.

Keywords:grass,clover,ensiling,silageadditives,microbiota,lacticacidbacteria

Journal of AppliedMicrobiology,2023,134,1–17https://doi.org/10.1093/jambio/

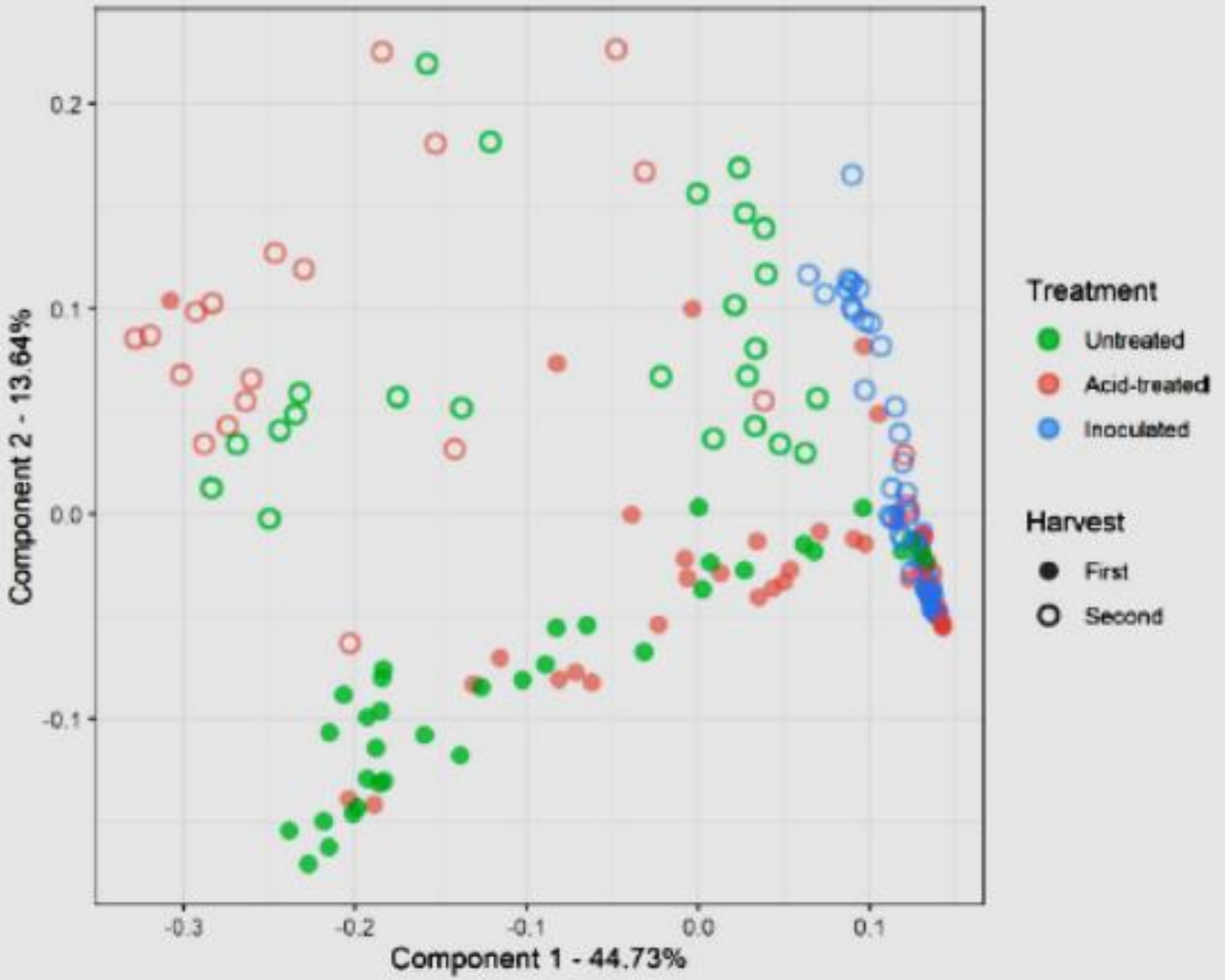


Figure 3. Principal coordinate analysis plot of the generalized UniFrac distance matrix associated to the silage microbiota. Each dot represents a unique silage sample from all harvesting occasions in the study. Dots colored according to ensiling treatment: green, untreated (no additive); red, acid-treated (addition of organic acids); blue, inoculated (with starter culture). Filled dots (●) indicate first, open dots (○) indicate second harvest.

The most important five criteria to accept manuscripts for publication:

- Importance, timeliness, relevance, and prevalence of the problem addressed
- Quality of the writing style (i.e., that it is well-written, clear, straightforward, easy to follow, and logical)
- The study design applied (i.e., that the design was appropriate, rigorous, and comprehensive)
- Degree to which the literature review was thoughtful, focused, and up-to-date; and
- Use of a sufficiently large sample

Int J Sports Phys Ther. 2012 Oct; 7(5): 512–517.

Top five reasons for rejecting papers:

- Inappropriate, incomplete, or insufficiently described statistics
- Over-interpretation of results)
- Use of inappropriate, suboptimal, or insufficiently described populations or instruments
- Small or biased samples
- Text that is poorly written or difficult to follow.

Int J Sports Phys Ther. 2012 Oct; 7(5): 512–517.

Hands on:

- Write a tentative title
- What is your most important finding
- Write the key message of your paper (the last paragraph of the introduction)
- Create a table or a graph with the results that support your key message
-

HANDS ON

- Vision statement/What is the key message of your paper
- Title
- Figures or tables with your data supporting your vision statement
- Abstract (aims, methods +results, conclusions)
- Impact Statement
- Journal