Fertilization effects on the chemical composition and in vitro organic matter digestibility of semi-natural meadows predicted by NIR spectrometry

Manuscript no: 9112-32589-1-RV

***Editor:***

*Thank you for your useful comments that were taken into account for the revision of the paper.*

***Abstract:***

The abstract reflect the content of the article, including background and results, but with no references about importance of the results, or conclusion (recommendation).

*Yes we agree. The abstract was adapted in order to better reflect the content of the paper.*

Sentence ‘The study results showed that NIR can be successfully applied to predict the classical composition…’ is redundant.

*Sentence was deleted. Some other sentences have been added to the abstract to justify our results.*

In addition, repeated ‘Romanian (semi-natural) mountain meadows’ suggests a total different situation or specificity than a normal one (regarding crude protein, ash, lignin etc. content) and in vitro organic matter digestibility of forages.

*Yes we agree, sentences were added to abstract.*

***Introduction:***

Describe what the author hoped to achieve enough accurately, and state the investigated problem. Conversely, the introduction does not summarize enough and relevant research to provide context, and explain what other authors' findings challenged or extended (there are only marginal papers mentioned). The article must builds upon previous researches presented as appropriately references. The author(s) can use important works and references not only from analyzed region, but also in similar studies about the topics.

***Weakness:***

Simplistic presentation and not well-written/elaborated work, without scientific consistency and policy objectives (poorly written).

*The text was adapted and some sentences and references were added in order to better reflect the objectives of the paper.*

***Suggestions of editor:***

Try to convince that the purposes of the study, and then the results/conclusions, are important, both scientifically and practically.

Try to use the obtained data to elaborate theories, hypothesis and judgments regarding the effects of fertilizations to the flora diversity and usefulness (eg. you did not presented flora composition/species percentage in the table…).

Try to formulate recommendation and elaborate strategies for the conservation, development and sustainable use of the flora from region using organic/mineral fertilisation.

*We agree that the manuscript will be more ‘interesting’ if data regarding flora diversity and fertilisation effects are added to the text, however we have deliberately avoided them and just concentrated our work in the chemical and chemometric parts. We explain our results as being a part of changes in flora. However, Pacurar and Rotar (cited in the paper) already published a part of results regarding flora changes and fertilisation effects in flora.*

Try to demonstrate originality of research and NIR usefulness to analyse meadows composition and in vitro organic matter digestibility of forages.

*Yes we agree. Sentences have been added to the text to better show the originality of research.*

***Material and Methods:***

The author(s) did not accurately explain and describe the experiment, the hypothesis and the general experimental design/procedure/model of investigations, plot, surface, samples collection etc.). The design must be suitable for answering the posed question, and the M&M must offer sufficient information for other scientist that can replicate the research.

*The experimental design, procedure, surface, plots are now better explained in the text as suggested. The order of the procedure was adapted in order to better reflect the content of the paper.*

The author(s) must provide clearly methodology (including treatments, variants, plots/replicates, total samples/variant and selected samples for chemical analysis etc.) and demonstrate that research followed adequate procedures and appropriate sampling, type of data recorded etc.

*The text was adapted and some sentences were added in order to better reflect the content of the paper.*

***Weakness:***

M&M is poor and scientific approach is not suitable.

*The text was adapted and some sentences were added in order to better reflect the material and methods of the paper.*

There must be a standard sampling method so the author(s) must provide clear and pragmatic procedure, including samples collections and how were the samples ‘selected’ etc.

*Yes we agree. Sentences have been added to the text to better show the samples collections and selections.*

Several statement and information are redundant or they are repeated (eg. the experimental variants are repeated three times!).

*Thank you, the text was adapted.*

***Suggestions of editor:***

The tables information must be improved (title, content, presentation, measure units, LSD for Duncan test, size of superscript letter for differences etc.).

*Yes we agree. Some changes have been added.*

Referring to repeated instances (experimental variants), typically, if a procedure is used only once in a paper, these details are described in Materials and Methods, and the Figure or Table legend refers back to that description.

*Thank you, I changed it in the text, meanwhile I think the legend is necessary for a stand-alone table.*

If a procedure is used repeatedly, however, a general description is given in Materials and Methods, and the details for a particular experiment are given in the Tables legend.

*This has been done (see my previous answer). The idea was if researchers look to the tables, they will be able to understand everything from the tables and legends and will not need to refer back to the M&M to understanding what is in the tables.*

***Results and discussions:***

Results seem consistent, but must be better elaborated and presented (not only scientifically, but also literary).

*You are right; the results have been changed and the presentation of them improved: first - NIR external validation results with scientific support and argumentation and second - agricultural point of view of results and explanations of differences between treatment, statistical assurances and literary comparisons.*

There are presented in comparisons with other research studies, but some results were discussed related to other published studies, so appear as repeated precedent works.

*Yes, you are right; the results and discussions are separated in two parts because of the classical analyses were performed to obtain a NIR external validation model, which was afterward used to determine the quality of rest of samples. Albeit the results were repeated, our goal was to present the results step by step, to show that the NIR technique could be successfully used by other researchers in similar studies in Romania or in other part of the world.*

Because the paper contain typographical errors or problems in grammar, punctuation, and wording, but also inadequate scientifically and literary style, the author must to prepare a revised version, respectively rewrite the paper.

*Because of typographical errors or problems in grammar, the paper has been grammatical English corrected by James Pfister, from USDA-ARS-Poisonous Plant Research Laboratory Department, Logan, UT, USA.*

***Conclusions:***

It seems reasonable if in discussion or conclusion the autor(s) indicate how the results relate to expectations, if the article support or contradict previous theories, the contribution to scientific knowledge, eventually recommendations.

*Yes we agree. Text was adapted.*

***Weakness:***

There are no recommendation.

*Yes we agree. Some changes have been added.*

The argumentations of the research are not enough discussed related to another contributions (there are a few reference and irrelevant citations in ‘Introduction’).

*This has been done (see my previous answers).*

The conclusions repeat the data presented in ‘R&D’ and ‘Abstract’ and do not reveals significant advance in the knowledge or lead to new insights, or even new potential research directions.

*Thank you, I changed it.*

***Suggestions of editor:***

Try to demonstrate that the research has moved the scientific knowledge forward.

*We have adapted the sentence in the conclusions as you suggest.*

***The figures and tables:***

The figures and tables describe the results enough accurately.

*Thank you.*

The author(s) must pay more attention to the title, presented data (clearly!), grammar, measure units etc.

*This has been done (see my previous answer).*

Nevertheless, the author(s) must follow exactly the style of the journal.

*Yes, you are right, now the tables are adapted as journal style demands.*