

Dear Editor,

The manuscript evaluate changes in “Tissue carbon content and the $\delta^{13}\text{C}$ values for the epiphytic CAM bromeliad *Tillandsia recurvata* and the relationship of both parameters with the CO concentrations in the Valley of Mexico basin”. This research is novel and the topic fits well to the scope of the journal, because it is the first studie to investigating relationship between carbon emissions and the plant’s isotopic composition. However, my main concern about this manuscript is statistycal analysis related with desing. I think that land use types (urban parks, agricultural and natural protected areas), should be included as explanatory factor in regression models. Thus, I suggest to explicate how many sites (22 sites in total) were distributed within of urban parks, agricultural and natural protected areas in this study??. In addition, I suggest to include CO concetrations and land use types as explicator factors in the new multiple regresion model (normal distribution) or Generalized linear model (not normal distribution).

Further comments:

1. Introduction

Line 37: Atmospheric pollution has become a serious threat for human health and the environment.

Here, authors should add reference

Line 39-41: For example, Mexico City, with vertiginous growth of industrial and household activities, as well as numerous motor vehicles of all classes, has seen an increase of emissions of different pollutants to the atmosphere.

Here, authors should add reference

Line 47-51: The combustion of carbonaceous fuels generates two main carbon products, carbon monoxide and carbon dioxide. However, the proportion in which they are emitted can vary. For example, when a motor works in optimal conditions, that is when the mixture of air, fuel, and temperature inside an automobile engine is ideal, the complete combustion of the fuel is achieved (high efficiency), resulting in the complete oxidation of carbon and subsequent emission of CO₂.

Here, authors should add reference

Line 80-81: Although, the carbon isotopic composition of this plant has been reported for polluted and non-polluted sites

Here, authors should add reference

2. Materials and Methods

Line 90: Study region

I suggest to explicate how many sites (22 sites in total) were distributed within of urban parks, agricultural and natural protected areas in this study.

Line 100 and 109: Atmospheric CO concentration and Biomonitoring

I suggest to join the following subtitles, for instance:

Atmospheric CO concentration and Biomonitoring
Geostatistical and Statistical analysis

Line 131-138: Linear regressions were calculated to determine the relationship between CO concentrations and carbon content (% dry weight), as well as the isotopic composition ($\delta^{13}\text{C}$ values) for *Tillandsia recurvata* in the Valley of Mexico. The differences between sites for the carbon content and the $\delta^{13}\text{C}$ values were determined by means of the Kruskal-Wallis one-way analysis of variance by ranks, followed by a Nemenyi's post-hoc tests for pairwise multiple comparisons ($p \leq 0.05$). The analyses were conducted using the Pairwise multiple comparison of mean ranks package (PMCMR) in R (version 3.5.3, R Core Team, R foundation for Statistical Computing, Vienna, Austria; Pohlert, 2014).

In my opinion, the tissue carbon content and the $\delta^{13}\text{C}$ values for the epiphytic CAM bromeliad *Tillandsia recurvata* and the relationship of both parameters with the CO concentrations and land use types can be analyzed by multiple regression model (normal distribution) or Generalized linear model (not normal distribution), and post-hoc Tukey test.

3. Results and Discussion.

In my opinion, these sections should be rewritten with results the new statistical analysis.

4. Conclusions

Line 334: pollutants such as NO_x, SO₂, O₃, heavy metals, particulate matter, etc

In my opinion, authors should delete the follow word "etc."

5. References

Please the authors should include all references following authors guide of journal

Correct format

Sala OE, Chapin III SF, Armesto JJ, Berlow E, Bloomfield J, Dirzo R, Huber-Sanwald E, Huenneke LF, Jackson RB, Kinzig A, Leemans R, Lodge DM, Mooney HA, Oesterheld M, Poff NL, Sykes MT, Walker BH, Walker M, Wal DH (2000) Global biodiversity scenarios for the year 2100. *Science* 344 287:1770–1774. doi: 10.1126/science.287.5459.1770.

Incorrect format

Silva, S. J., Arellano, A. F., & Worden, H. M. (2013). Toward anthropogenic combustion emission constraints from space-based analysis of urban CO₂ /CO sensitivity. *Geophysical Research Letters*, 40(18), 4971–4976. doi:10.1002/grl.50954

Sincerely,

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