SOIL
Discussions

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Interactive comment on "Are biodiversity indices of spontaneous grass covers in olive orchards good indicators of soil degradation?" *by* E. V. Taguas et al.

Anonymous Referee #1

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Interactive comment on Are biodiversity indices of spontaneous grass covers in olive orchards good indicators of soil degradation? by E.V. Taguas et al.

GENERAL COMMENTS: Present paper intends to cover important issue about indicators choice and integration. The idea is current, regardless of the fact that a lot of work has been done, especially in biodiversity indicators choice, development, validation etc. followed with common assessment with soil properties – since site specific conditions prevent establishment of uniform indicators set. Starting from the valid intention in the title, later on through the manuscript this path is lost and without significant corrections study should not be accepted for the publication in SOIL journal. As an main issue,

terminology should be harmonized through the text, thus to decide eater to deal with spontaneous cover, cover crops, weeds or some other term (i.e. native plants).

SPECIFIC COMMENTS: Introduction – Structure of the Introduction part should be changed completely, it is not in the line with study title, objectives and abstract. Starting from definition of soil biodiversity – it is not appropriate, and additional references are needed for the first paragraph. (Some suggestions - Journal of Geographical Sciences, 12(2): 243-252; Ecological Indicators, 9(3): 432-444; Geoderma, 147(3–4): 159-171; Trends in Ecology & Evolution, 18(4): 182-188; Agriculture, Ecosystems & Environment, 98(1–3): 1-16) There is a missing link between first and second paragraph and later on to EU strategies. List of the EU strategies is not appropriate at all and should not be included, maybe only as indication with further reference. Otherwise it can be starting point and pillar on which you can build your introduction. Although, following paragraph about indicators use and one about olive cultivation and associated soil degradation are ones that finally fit with studies objectives and justifies them. Page 236; Lines 5-10 – missing reference or references. Page 236; Line 12 – Reference Mimee at al., 2014 is not one that main objective is yield improvement. Page 237; Lines 7-25 – Under investigation is spontaneous grass cover and this is something that need further discussion, as advantages and disadvantages, without going to wide and again without clear terminology. Page 237; Line 24 – After . . .improvement, etc. there is a need for reference. Page 238; Line 6 – Specific objective No. 2 should be modified; instead of meteorology to write meteorological conditions.

Materials and Methods – I would like to suggest change of abbreviation in the case of study site "Conchuela". Con is often used in the studies as abbreviation for Conventional agriculture, thus it may be better to use CN (two letters as in the case of other study site - PG). Since description of the study sites is quite long, it may be better to insert one table for both with main characteristics as drainage area, mean elevation, annual precipitation, soil type etc. Like this it will be more clear ease to compare them. Additional important characteristics could be given after the table. Page 240; Line 1 –

Again terminology disparity: subtitle states Weed sampling – that does not mean the same as native or spontaneous cover. Same path should be applied through the text. In the Figure 2 indications on the pictures a, b, c etc. do not correspond to the legend below the figure. Title 2.3 should be changed, Data analysis most of the time refers to the statistical data analysis, thus it can be placed at the end of M&M section (since statistics is almost missing in the manuscript). Page 240; Line 19 – Explanation of the Richness (R) is not clear and how the values are obtained. Page 241; Line 2 – In the description of the Sorensen's index (Is) formula, for C – instead of present should be written common both study sites; This is correct in the case of Sorensen's index (Is). (Why here use of the term farms? Make it uniform through the manuscript) Page 242; Line 3 – Climatology is not something annual; change it to the meteorological data. Page 242; Lines 13-15 – It should be deleted, does not belong to the part of materials and methods. Page 242; Lines 18-25 – This paragraph needs structural changes, authors started with methodology for Organic matter, then about number of samples and way of sampling. It should be opposite, followed by Bulk density. It is not clear why number of samples is different in two study sites. And the last sentence should be part of statistical analysis, not soil indicators. Part about statistical analysis should be added and additional analyses are desirable. Results – Number of the Tables is too high. Some of them could be joined and some moved in Supplementary material. Table 2 – Use of the word Example in the Table title is not appropriate, change it with Some or just delete it. In the case of % of clay, sand etc. particles name should go in the first line and then below unit (as in the case of organic matter). Table 3 – In the table body Richness should be with abbreviation, as decided in the part of M&M. Table 3 and Table 4 should be joined and authors need to clarify why just in the case of Sorensen's index they showed seasonal data, while this is not case for others? Table 5 – Frequency is clear even from the n value and there is no need to give same data twice. It will be better to present biological spectrum (life forms) either as n either as Frequency in the form of Figure. In the case of PG sum of the Frequency values is not 100. Table 6 – Needs to be moved in the Supplementary material. To be kept within

results it could be appropriate in some journal with major scope in botany. Table 8 – It should be deleted, since it gives data already presented: In the case of biodiversity indices in Table 3 and in the case of soil properties in Figure 3. Which is the purpose of column Stat.? Mean and SD should be followed with some kind of Statistical analysis (one way ANOVA could be very informative). And in general part of the statistical analysis should be revised in the Manuscript as a whole. Figure 3 – Number of the samples is given in Materials and Methods, why to write it again and if to keep why after each parameter (it could be better just on the end). Page 244; Lines 1-3 – There is missing reference for the statement and this part could go in Discussion part. Page 244; Line 18 – How to say that difference in OM and BD between study sites were significant if Statistical analysis to confirm this is not presented? Discussion – Text should be revised for the terminology used and enriched with some more current studies. As well adjusted to the changes in paper suggested above. Conclusion – Page 247; Lines 11-17 – This parte belong to the discussion.

TECHNICAL COMMENTS Page 236; Line 17 – Instead of dedicated to growing olives change to dedicated for olives cultivation. Line 21 – Southernmost instead of Southern most. Line 25 – Change have difficulty growing to have difficulties to grow. Page 237; Line 9 – Authors could think to use some other word then traffic – i. e. passage (same for page 239; Line 5). Line 24 – our while should be deleted. Page 238; Line 6 – Change meteorology to meteorological conditions. Line 23 – for FAO classification indicate the reference (Same for Page 239 – Line 18). Page 240; Line 8 – Between trees and away you should add comma. Page 241; line 11 – Double the present in the line, one to be deleted.