

Reply on RC1

Norman Gentsch et al.

Author comment on "Soil nitrogen and water management by winter-killed catch crops" by Norman Gentsch et al., SOIL Discuss., <https://doi.org/10.5194/soil-2021-124-AC1>, 2022

Respond to Reviewer #1

We thank the reviewer for the helpful comments that helped to improve the quality of the manuscript further. In the following the reviewer's comments are marked in italic followed by our response.

The aim of the manuscript is clear and the hypotheses are well defined.

The Introduction provides an actual and sufficient literature review. I only recommend mentioning the importance of catch crops in protecting the soil from water and wind erosion.

Done.

L52: "Legumes are not as effective as other plants in N depletion..." - You could add reasons.

We add the reasons.

The chapter Materials and Methods is clear and detailed. However, I miss parcel size information (L95) and the way of sowing (by hand/by seeder/on surface/depth of sowing; L105). You should also provide information about the method of soil tillage after wheat harvest. Provide also the date of the catch crop plant biomass determination (L113).

The information were all added to the materials and methods section.

L127: "Soil samples were taken..." - When? How many times? Does the Figure S2 provide the data?

The following sentence was added:

The sampling campaign comprised 9 sampling points in the period from 15th of August 2018 to 24th of July 2019 (Fig. S2, all dates provided in Table 2).

L148: "...samples at 10 time points..." - 10 time points or 9 time points (according to black dots in Figure S2)?

9 is correct.

L93: Consider adding a table with the monthly precipitation values, the Figure S1 is less clear.

I added a new Table S5.

The Results are presented clearly and adequately described. The Discussion is also processed at a very good level. I only recommend adding information about volunteer winter wheat and weeds.

I added the following paragraph to the results:

The slow biomass development of clover encouraged winter wheat and several regional weeds to germinate. These were weeded manually once. The rest of the CC treatments suppressed weeds very well. Growth of weeds and volunteer winter wheat was documented and their contribution to total biomass was negligible.

Technical corrections:

L132 and 133: $100 \text{ cm}^{-3} = 100 \text{ cm}^3$

Changed

Figure 2 to Figure 4: You provide units g kg^{-1} for the figures but mg g^{-1} in the text (L211 to L222)

Changed to g kg^{-1} .

L216: "Clover...as bare fallow (Fig. 3b)." = Fig. 2

Changed to Fig.2

Table 2: In the column "05 Dec 2018" are not only small letters

That was a mistake probably from auto-correction issues.

Figure 5, Figure S1 and Figure S2: You should use the English names (abbreviations) of the months.

Changed.

References: Check notation of literature sources (e.g. missing journal titles, abbreviated/full journal titles)

There might be an issue with the citation style in my Zotero. But this will be clarified with the production office in terms of acceptance. Probably they can provide me a correct citation style file. Otherwise I need to correct manually.