Answers to respected prof. dr. František Kumhála

We sincerely thank the respected professor for especially useful expertise, his time, helpful comments, and assistance in improving the scientific article. Following the Reviewer 's advices, we are resubmitting the article manuscript with the corrections made, which we explain in detail in the answer below.

Conclusions

In the first and second years of the study, the total porosity of the soil varied between 41% and 62%, while in the third year, the total porosity of the soil increased in all scenarios and over the whole study period ranging from 51% to 74%. This increase was due to the interaction between the long-term use of biopreparations and meteorological conditions.

Soil temperature was dependent on environmental conditions, crop density, and plant height. In the first year, soil temperature in August showed a significant increase compared to the control ($P<0.05$) in scenarios SC6, SC7, SC2, and SC8. Similar trends were confirmed in the second and third years.

The use of biopreparations had an impact on CO_2 emissions from soil. In the first year, it was found that, all biopreparations, except for scenario SC2, increased CO_2 emissions from soil.

In the second year, the soil respiration results showed that SC6 and SC7 scenarios resulted in higher cumulative CO_2 emissions. The cumulative effect of biopreparation application was most pronounced in the third year.

In August of the third yearCO_2 emissions have increased by a factor of 3–5 compared to the previous measurements, in the range of 4.89–11.07 μmol m^{-2} s^{-1}. Knowing that tillage intensifies CO_2 emissions from the soil, these studies confirmed that some biopreparations (SC3, SC7, SC8) can significantly reduce the CO_2 emission intensity from the soil after tillage.

Future research on the use of bacteria-based and environmentally friendly bioproducts should focus on increasing CO_2 storage in soil, simplifying agricultural operations, reducing inputs, and increasing the efficiency of crop production.

Table 2. Soil properties assessment plan (2015–2017)

2015	2016	2017
25.04.2015	29.04.2016	05.05.2017
11.05.2015	23.05.2016	30.05.2017
June was too dry	20.06.2016	28.06.2017
14.07.2015	20.07.2016 (after harvesting)	31.07.2017 (after harvesting)
07.08.2015 (after harvesting)	08.08.2016 (after soil tillage)	01.08.2017 (after soil tillage)