

## ***Interactive comment on “Soil Denitrifier Community Size Changes with Land Use Change to Perennial Bioenergy Cropping Systems” by K. A. Thompson et al.***

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General comments:

This article displays a well-researched and properly executed field study. The authors took their time with this study by gathering large data sets consisting of numerous of plant and soil qualities under various environmental conditions and management practices to fully understand their effects on the denitrifier community abundance which have been shown to influence N<sub>2</sub>O emission in soil. Their objectives and consequential findings show a change to the growing of PG crops for bioenergy production to be valuable based on their positive impact on the denitrifying community responsible for N<sub>2</sub>O emission reduction compared to conventional corn-soybean rotation. High growth

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yield of the PG crop regardless of management changes shows the robustness of this plant compared to conventional crops which is also a valuable finding.

Specific comments:

Line 28- Were you looking at variable Ontario conditions? I think this sentence should be changed to reflect what you looked at which was variable management practices.

Introduction- Do you have any stats on current production of PG as feedstock crops for biomass based bioenergy production?

Line 42- This seems like it should be in the introduction. Maybe the rationale for why these genes were chosen in particular could be mentioned above or significantly cut down to a sentence as part of the methods.

Line 97- Do you mean that these plots are parallel to each other in location?

Line 186-189- Explanation of the supermix components not really relevant to this article

Line 273-275- Why mention this result if "not significant"?

Line 395- Do you mean type or abundance, this is unclear?

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