

The authors have described extensive experiments aimed to understand the result of slicing width on the fermentation dynamics of fermented vegetables. The paper describes the rationale for the experiment which arose from a previous study from the same group which was a citizen science program to understand composition of fermented vegetables made in the home. The paper describes a single experiment, that has been comprehensively studied with a range of methods. This is a drawback to the paper, as we don't know if the same conclusions would be reached with cabbage or carrots of a different origin. The paper is generally well presented but needs work on expression to improve clarity and flow of the manuscript. The methods are comprehensively described and the information presented is complete. The methods encompass traditional plate counts to identify microbes of interest as well as culture independent methods. The results are presented sequentially and have a lot of detail- I suggest too much as detailed below. Subheadings in the results could be used for great effect to highlight the main results you would like the reader to understand. The results are long and a little repetitive- I would prefer better summaries so that your main points are highlighted. I can see a nice manuscript, but I feel that the presentation and data representations are not sophisticated and succinct. The information is interesting, but there is a tendency to display everything found, rather than a careful presentation of relevant results and their discussion. I suggest a review of language usage to clean up expression and remove erroneous words. Your paper will be more impactful and useful if this advice is followed.

#### Major points

Title. Your expression is slightly confusing for me. Do you mean that 'the cutting rate of vegetables influences the rate of spontaneous fermentation?'. Having fermentation/fermented twice in the heading makes it sound like that the vegetables are fermented and then cut.

#### Introduction.

- There are some unreferenced claims in the introduction that should be considered. For example, line 95 'Fermentation is most generally spontaneous and due to an endogenous lactic acid bacteria (LAB) community' does not have a reference but relates very closely to the outcomes of your paper given the wide variation you found in the results.
- I'm not clear on your rationale- what have your plate counts shown you that the amplicon sequencing doesn't show? "it is crucial to combine cultural methods with culture-independent methods such as 16S metataxonomics or shotgun metagenomics, to better understand the dynamics of the microbiota of fermented vegetables."

#### Results

- I really counsel against showing all of your results- simply because you have them. For example, 'Regarding the other media used to enumerate bacteria, the counts enumerated on BHI-YEnp, a medium used to enumerate Gram-negative aerotolerant bacteria, were very similar or a bit lower compared to the counts on VRBG, suggesting that the same bacteria grew on both these media. I suggest simplifying your data representation and descriptions so that this data is not included if it is not informative. Your main results are lost when everything is

included. Similarly for 'Two other, unidentified, compounds were detected by using HPLC-UV, at retention times 26 min and 28 min, named RT26 and RT28.'

- I like the presentation of figures 2 and 4, but suggest that the elementary presentation of results in figure 3 needs to be improved away from a stacked column graph which made in excel which is very difficult to interpret and apply statistical tests.
- How were the yeast identified?
- The use of PCA to represent metabolic/volatile data is fine, but as there is little separation in some cases, perhaps a better method could be made. You don't really talk this through in your discussion- I suggest you delete this representation.
- Are carrot and cabbage comparisons relevant to your aims? Given your aims are salt addition and cutting type, I don't think so. You could clean up and trim these results from your descriptions to streamline your results. Indeed, you state in your discussion '*However, the experiment was not designed to address the comparison of carrot and cabbage in itself, since the vegetable cultivar, culture conditions, harvest and storage conditions (time, temperature) can also impact their fermentation*'.
- I'm missing the rationale for combining your results in a PCA (figure 5). Sure it gives you a 'global picture', but how does this help answer your research questions?
- Figure 7 is glorious and comprehensive. But do you need both a and b? why not send one to supp data and focus on the one that helps you tell your story.
- Figure 8 is confusing for me. Why do you need to pool your data and present it in this way?

## Discussion

In general, I find the discussion long and detailed. Keep the detail but edit thoroughly to be concise and direct about the results. I like the informative subheadings, but the paragraphs underneath them are not well formed and tend to blurt the information without structure or narrative considerations. It is so very difficult to follow the story of your paper when these dense lines of text, without highlights and signposts are presented and hides the value of your paper.

I really like the section titled 'A thin cutting favours...etc'. this part should be preserved, and the preceding sections considerably edited and shortened. Remember that this is your main result and outcome for the paper! The section on the vitamins can be considerably shortened.