

Yeast Choice Impacts Fermentation Outcomes in Makgeolli

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Figure 1. Makgeolli Fermentation Vessels



Figure 2. Centrifugation of Samples

Overview / Rationale

Makgeolli (**Fig. 1**) is a traditional Korean rice wine. Our goal was to determine the effect of yeast and rice type on the fermentation outcome.

Methods

Triplicate white rice & yeast, white rice, brown rice, and brown rice & yeast samples were constructed. Each triplicate contained rice, nuruk, water, and yeast and the samples were incubated at room temperature. A 1:10 serial dilution was performed and samples were centrifuged @ 10,000 RPM for 5 min. (**Fig. 2**) before for HPLC analysis. We sampled after 0, 7, and 14 days of fermentation (**Figs. 3-6**).

Results

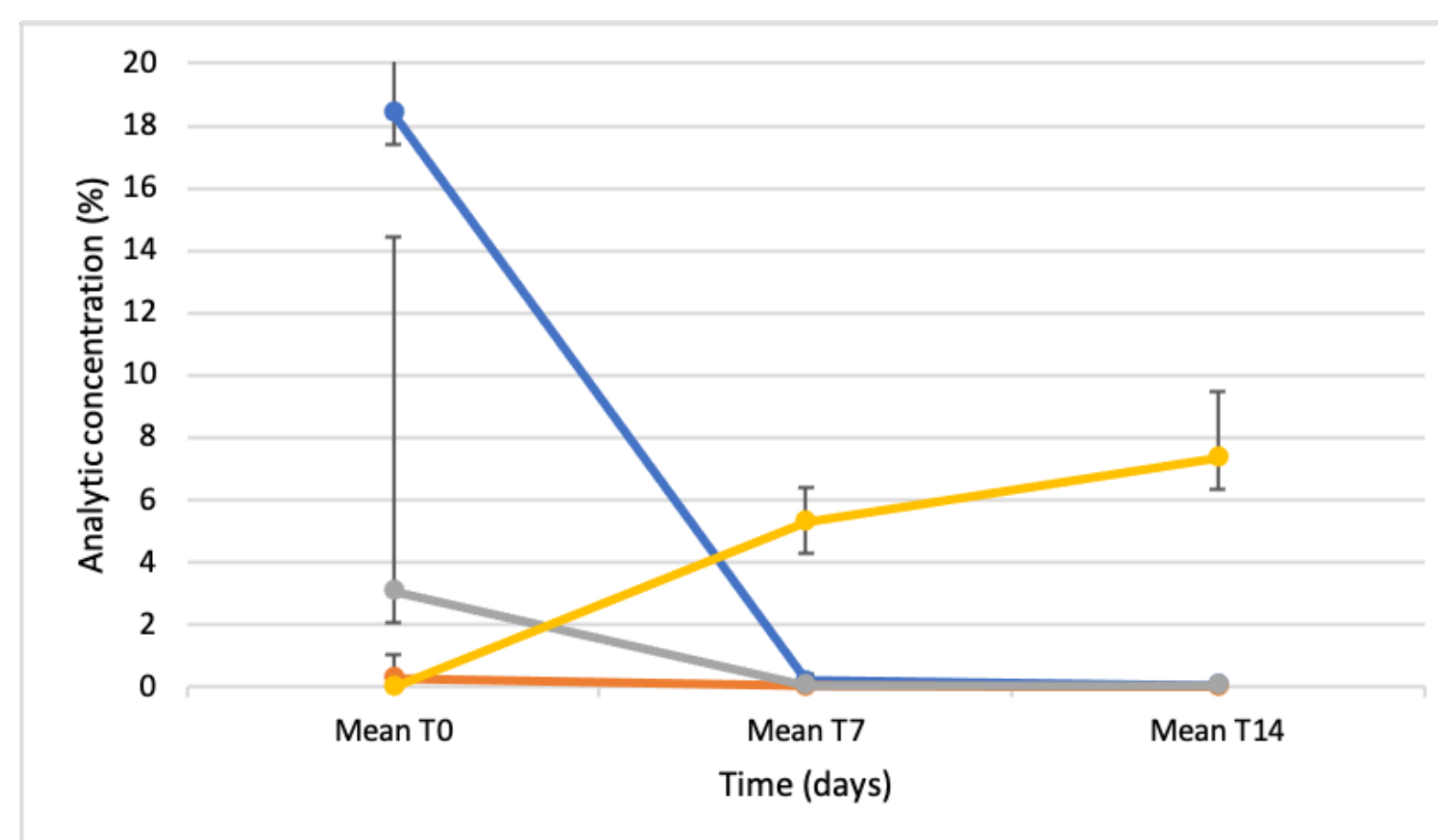


Figure 3: White rice fermentation

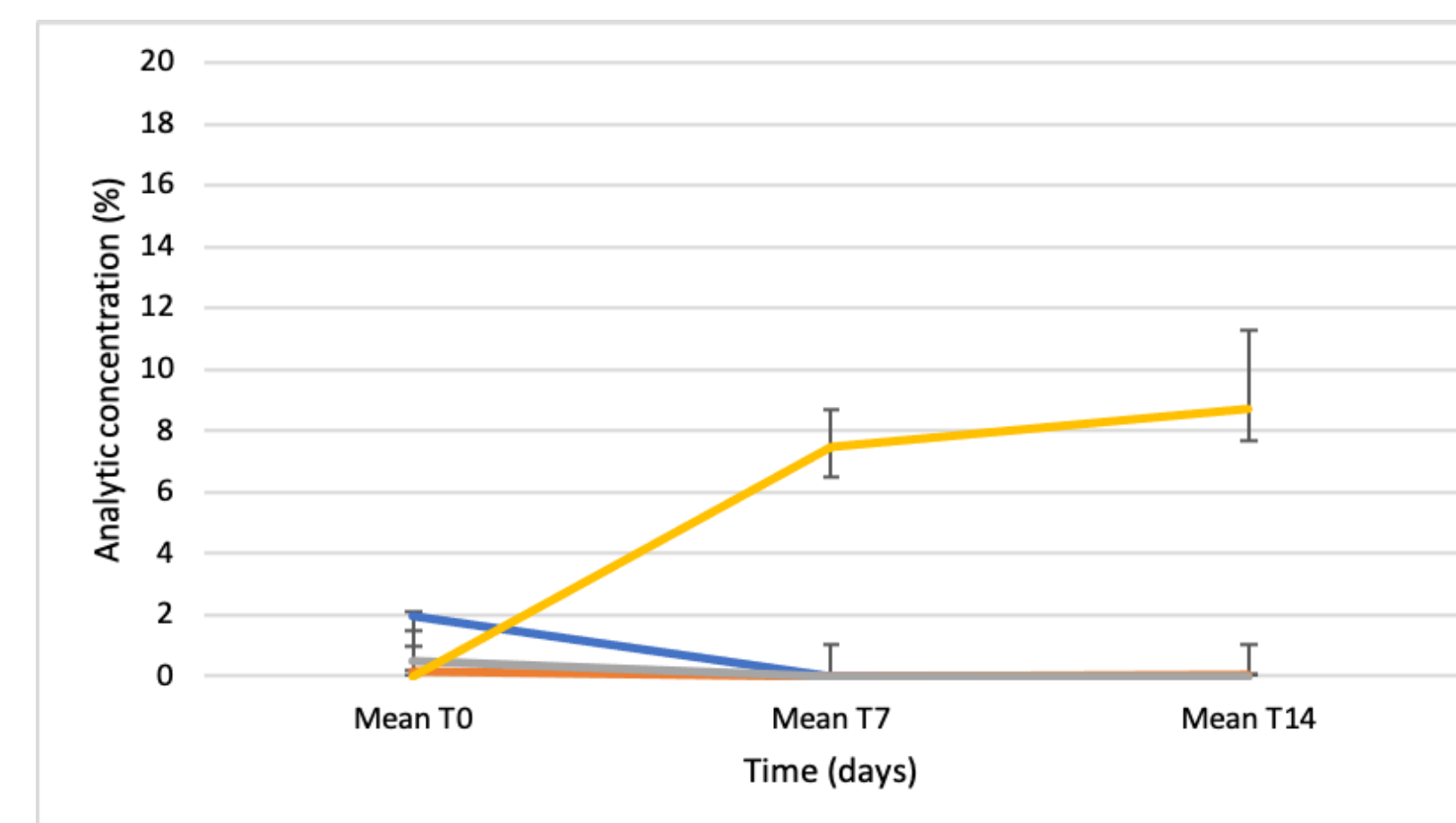


Figure 4: White rice fermentation with yeast

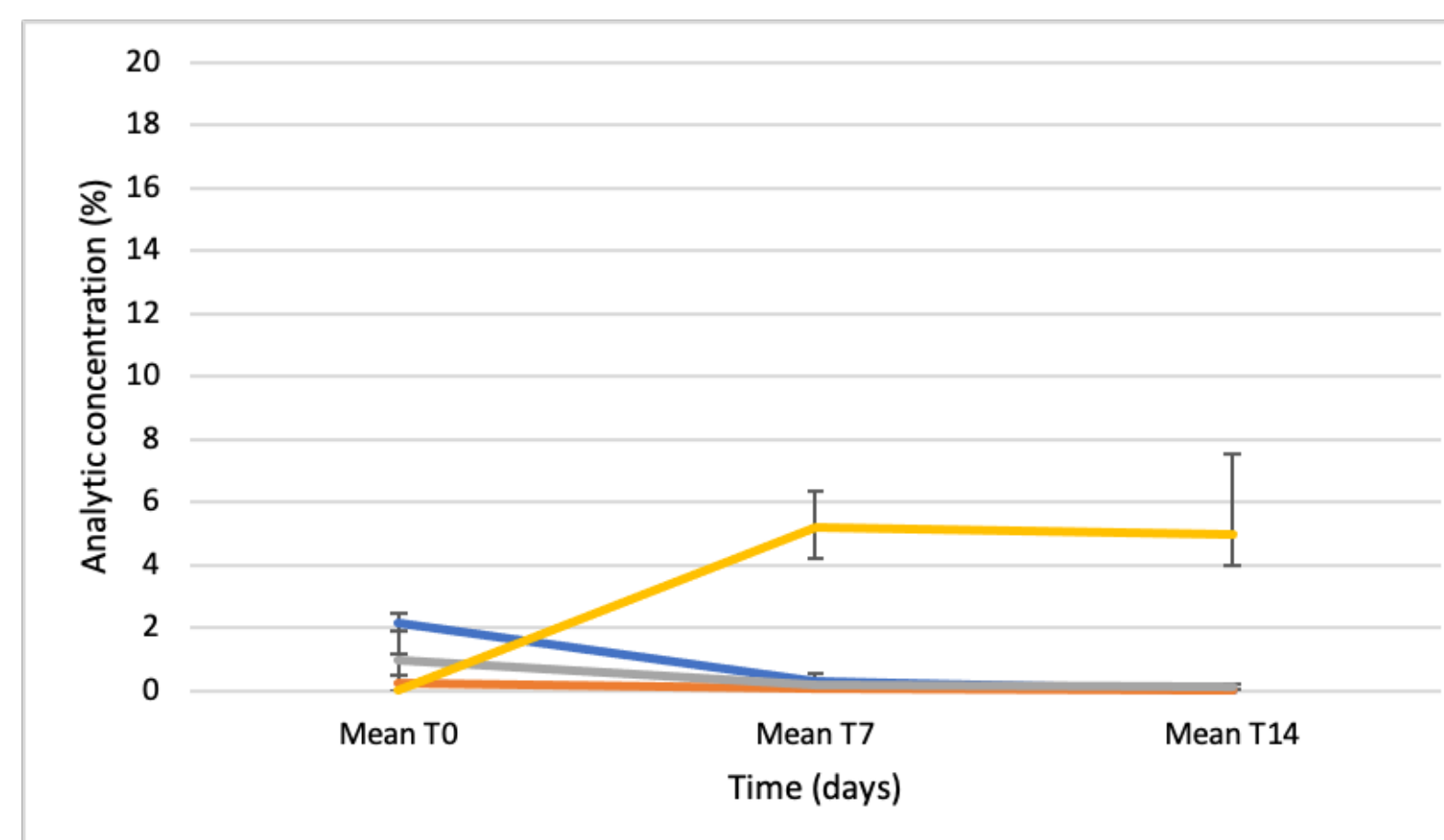


Figure 5: Brown rice fermentation

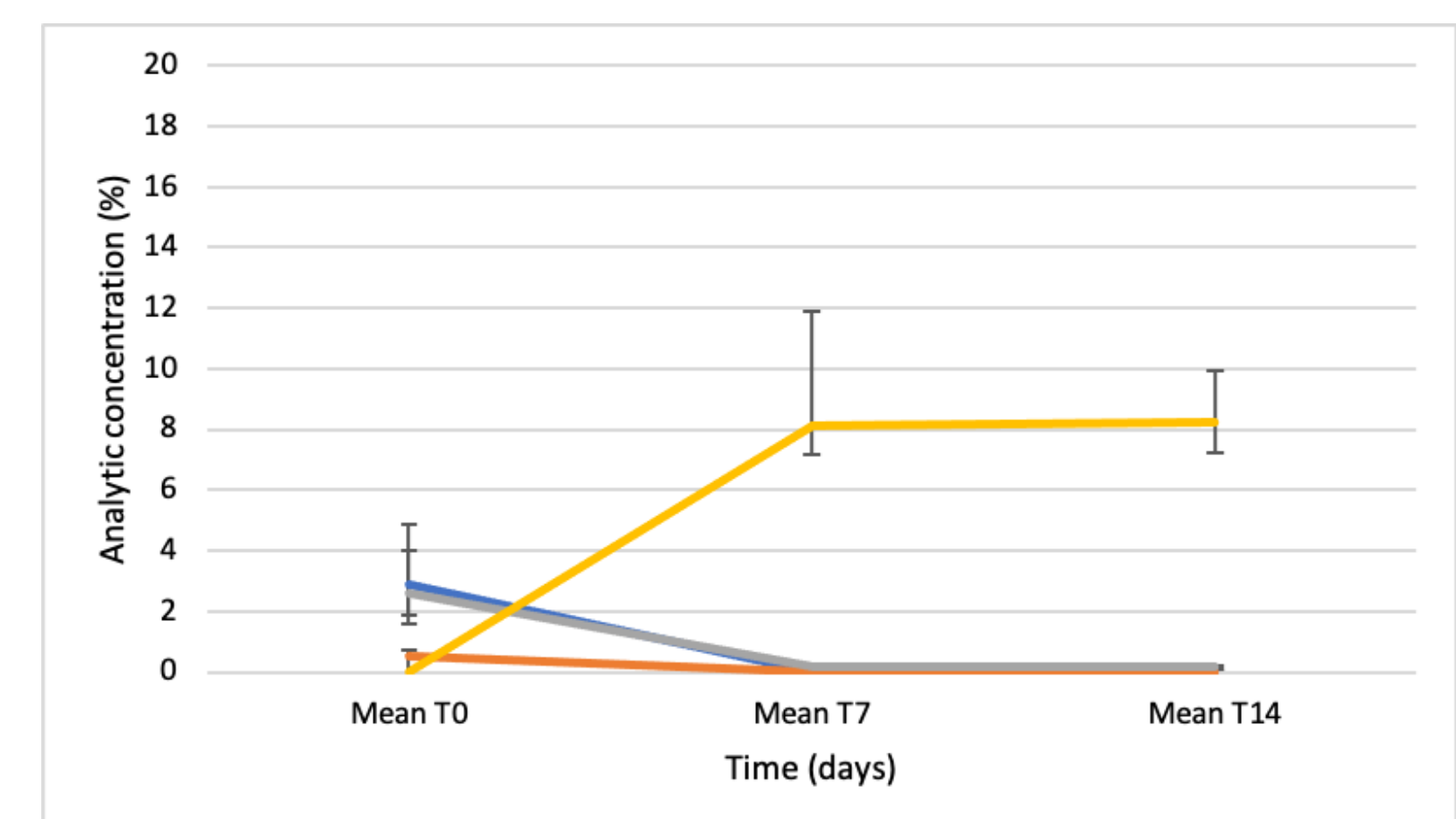
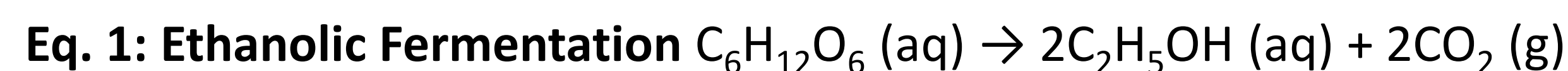


Figure 6: Brown rice fermentation with yeast

Legend: Blue= glucose, Orange= maltotriose, Grey= maltose, Yellow= ethanol
 Mean +/- 95% confidence interval



Conclusions

- Glucose, maltotriose, and maltose decreased as the ethanol concentration increased.
- More ethanol is produced in the samples containing yeast.
- The type of rice has no effect on the ethanol production.
- We recommend that additional yeast be used to ferment rice to make Makgeolli wine.

Citations / Acknowledgments

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