

# Salt affects the pH of Fermented Sauerkraut

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Figure 1: Sauerkraut Fermentation

## Overview

To test the effects of salt concentration on sauerkraut production (Fig. 1, eq. 1), we varied salt in cabbage the fermenting it for 10 days. We found that higher salt content accelerated the fermentation process but didn't significantly affect sauerkraut fermentation (Figs. 3-5).

## Methods

Three treatments were applied to create sauerkraut. Triplicate samples of 225 g cabbage were combined with no salt, 5.29 grams of salt, and 10.58 grams of salt. The fermented Sauerkraut was monitored over 10 days by HPLC to measure the decrease in sugars and accumulation of fermentation products (Figs. 2, 6).



Figure 6: HPLC Machine

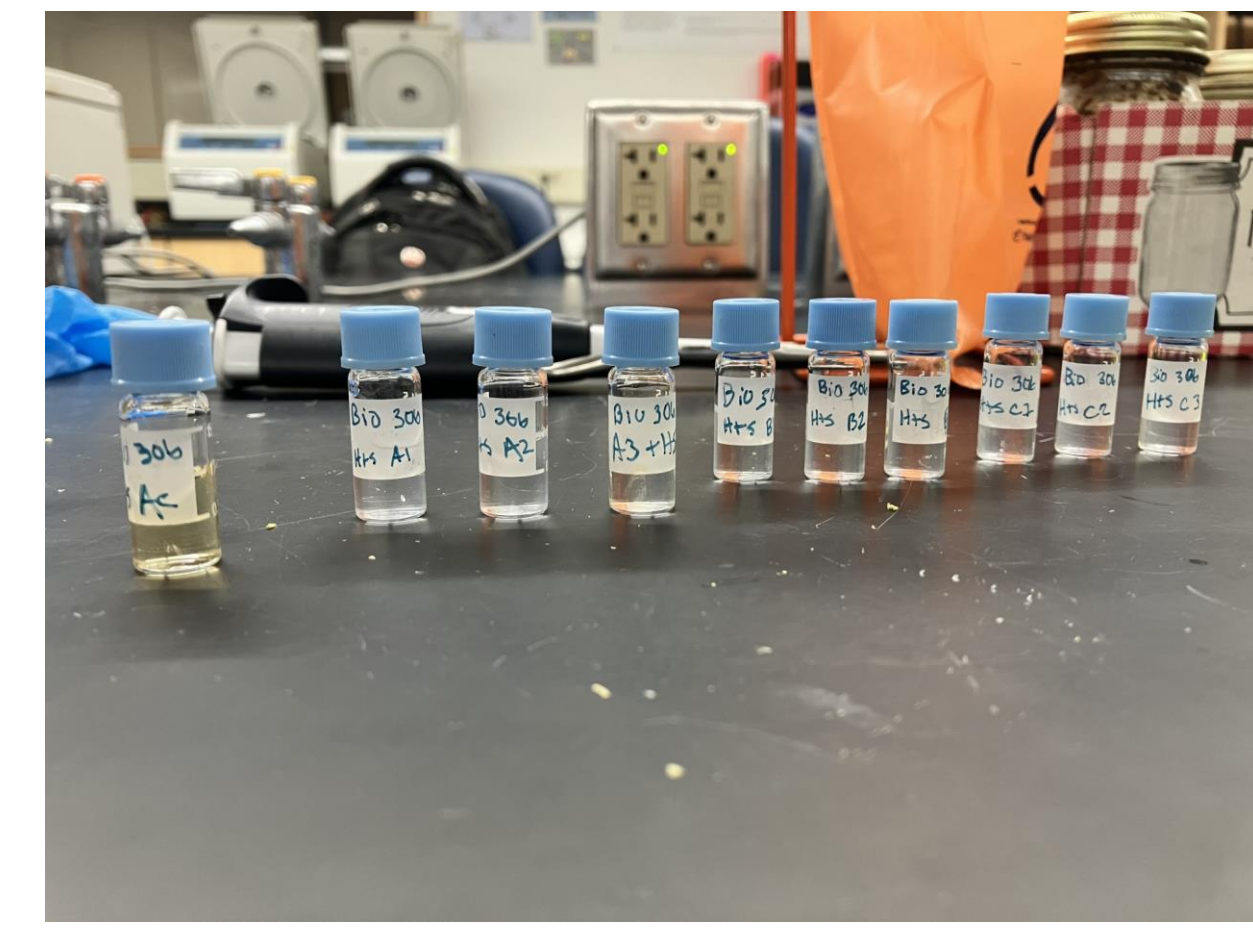


Figure 2: HPLC Samples

## Results

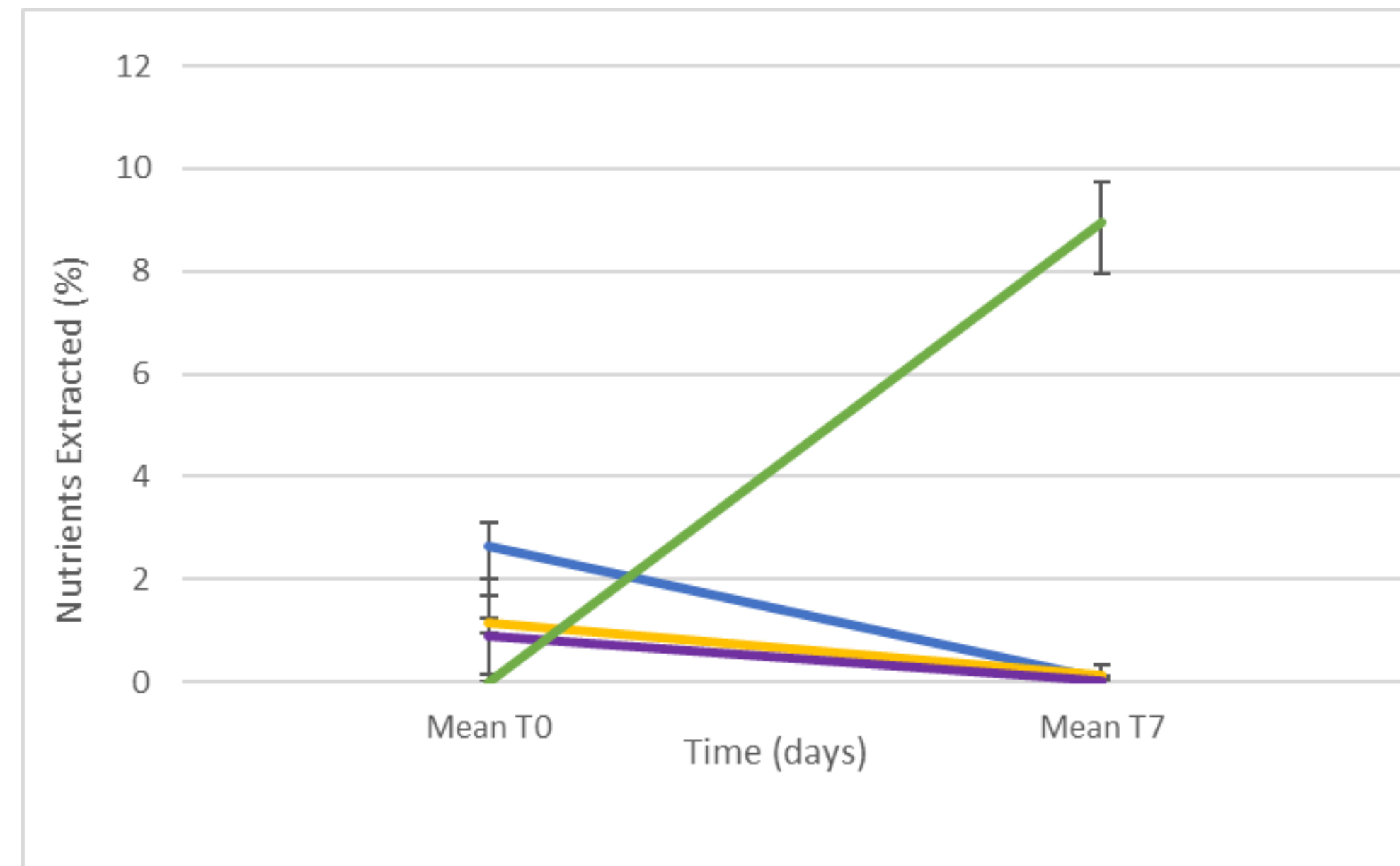


Figure 3: Salt 5.29 g/225 g Cabbage

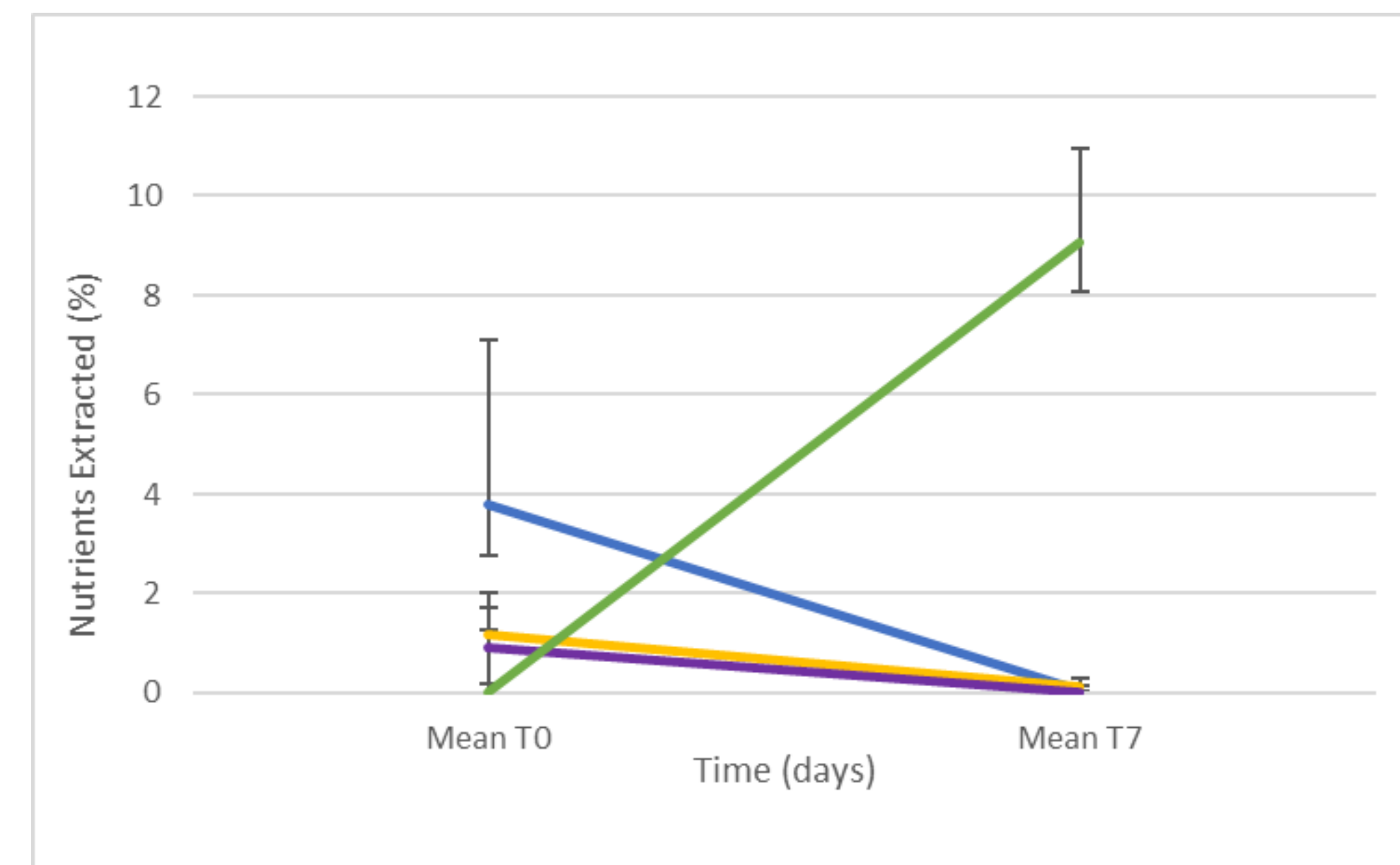


Figure 4: Salt 10.58 g/225 g Cabbage

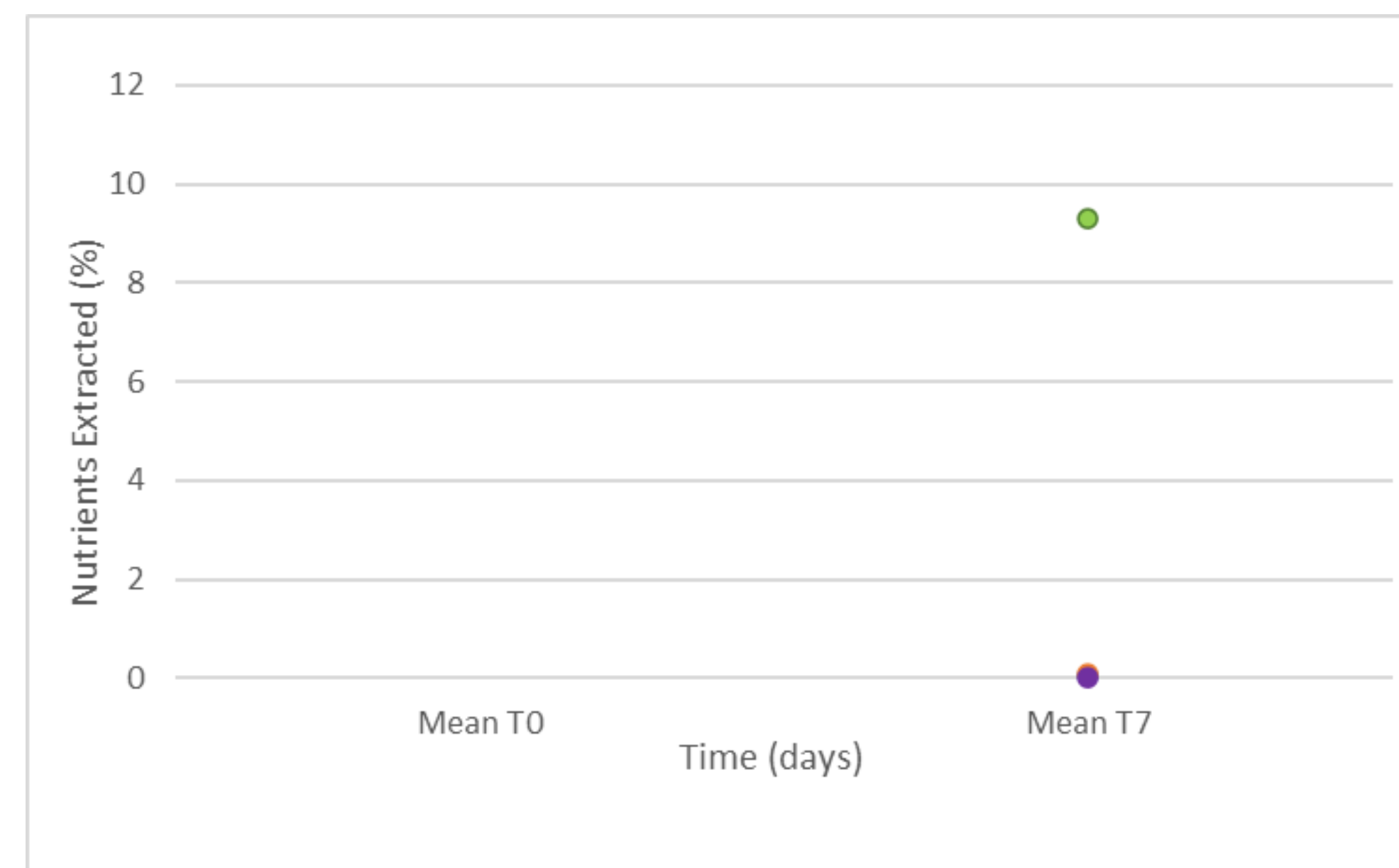


Figure 5: No salt/225 g Cabbage

Figures 3-5: Means +/- 95% Confidence Interval

## Legend

Blue: Dextrin    Yellow: Glucose    Purple: Fructose    Green: Ethanol

## Equation 1. Heterolactic Fermentation



## Conclusions

- There was a slight decline in sugar content and production of ethanol in all treatments
- Salt addition doesn't affect sauerkraut fermentation
- To make sauerkraut, use only the minimum amount of salt needed to start the fermentation process

## Citations

Killebrew, K. (2021, January 2). *How to make Sauerkraut*. The Daring Gourmet. <https://www.daringgourmet.com/how-to-make-sauerkraut/>