



INTERIM REPORT FOR DR CHEILA CANARIO ON PINEAPPLE CIDER VINEGAR

CUSTOMER	DR CHEILA CANARIO
DATE RECEIVED	26-02-2021
REPORT DATE	07-04-2021
REPORT NUMBER	0001

Sample Information:

Date received:	26-02-2021
Product Description:	Pineapple Cider Vinegar (100 ml)
Product reference:	Interwaste-Cheila
Test start date:	01-03-2021
Appearance:	Yellow liquid
Odour:	Sweet to sharp/acidic

Sample Preparation:

The sample was received in good order on Friday 26 February 2021 in a sealed glass bottle. The bottle was stored on the bench top at room temperature as recommended by the client (Cheila Canario). The testing commenced on Monday 1st of March 2021. Sample was prepared fresh immediately prior to testing in a Sodium Phosphate Buffer (pH 6,0).





Activity assay:

The Azocasein method according to Wolz and Bond (1995) was used to measure activity of bromelain in the Pineapple Cider Vinegar. The activity was determined in triplicate and the data presented is the mathematical average of each determination. A Bromelain standard from SIGMA (B4882) was used as a control.

Protein determination:

Still to be conducted using the Bradford (1976) Assay.

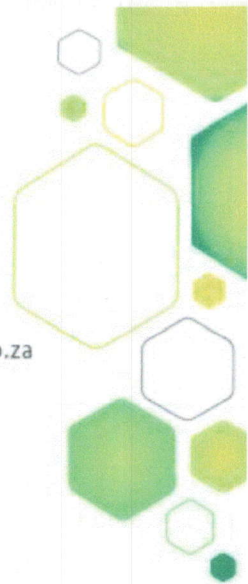
Results & Discussion:

Test	Internal Method Reference	Result
Initial Enzyme activity (Azocasein assay)	QC001	268,38 GDU*/ml
Final Enzyme Activity (After 28 days (Azocasein assay)	QC001	364,96 GDU*/ml
Activity loss/gain over 28 days (%)	N/A	36% (gain)
Total protein Content	QC002	TBC
pH	QC003	4,08

*GDU = Gelatin Digestion Units (universal units for Bromelain activity)

Overall, the bromelain enzyme activity appeared to increase steadily over the 28-day period by an average of 36% since the start of the testing (Figure 1). This implies the enzyme was relatively stable in the solution. A decline in activity was observed after 7 days, but following this, the activity continued to increase at a steady pace, suggesting this reading may have been false and possibly due to inadequate sampling. The colour, smell and pH remained the





same throughout the testing period. The only noticeable change was a build-up of sediment at the base of the liquid after approximately two weeks, which has continued to increase slowly over time. This sediment does not seem to interfere with the bromelain activity, however.

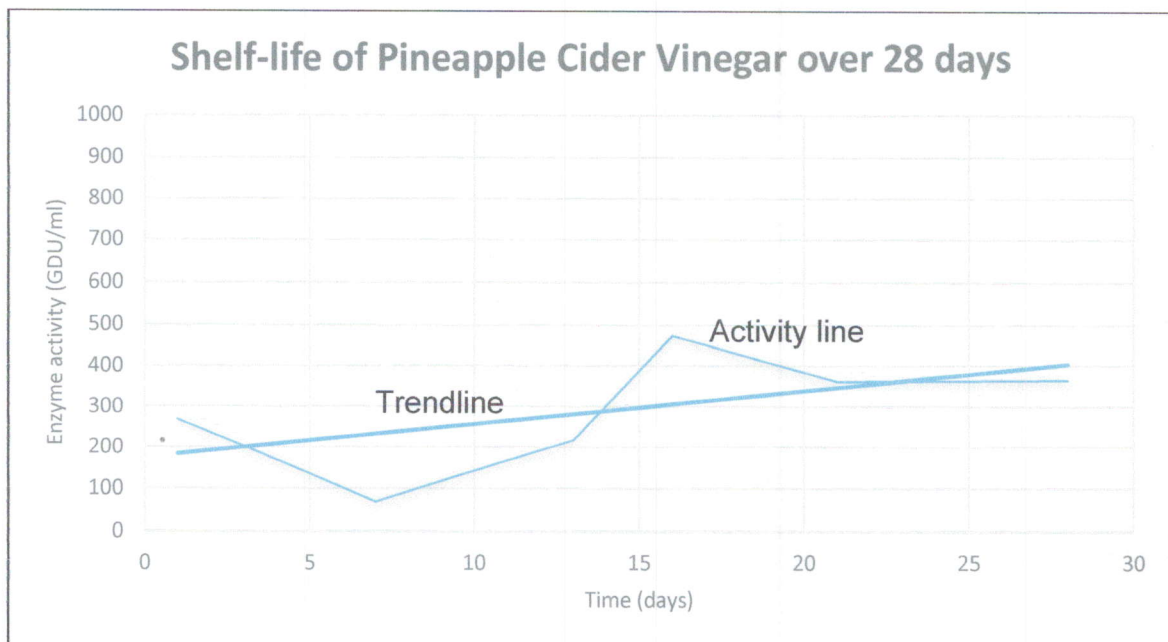


Figure 1. Enzyme activity of pineapple cider vinegar over 28 days.

The data presented in this report, confirms bromelain activity in the pineapple cider vinegar (between 268 GDU/ml and 365 GDU/ml) and that the enzyme was stable over 28 days. Additional activity tests need to be done to establish the stability threshold of the enzyme.



Approved by:



Candice Eades
Technical Director
Enzyme Technologies (Pty) Ltd

