

P361. Evaluation of *Aloe vera* juice as a substrate for *Enterococcus faecium*

Ruth Cuvas Limón¹, Clarisse Nobre², Rosa. M. Rodríguez –Jasso¹, Araceli Loreda Treviño¹, Héctor A. Ruiz¹, Mario Cruz H. ³, José A. Teixeira², Ruth E. Belmares¹

¹ Food Research Department, Universidad Autónoma de Coahuila, Saltillo México

² Centre of Biological Engineering, University of Minho, Braga Portugal

³ Food Research Department, Universidad Autónoma Agraria Antonio Narro, Saltillo México

E-mail: rcuvas@uadec.edu.mx

Fermented plant material beverages stand out from fermented food in general, since their consumption presents no risk of intolerance and allergies associated with dairy food. *Aloe vera* has been used to varied medical purposes due to their bioactive compounds. Lactic acid bacteria, generally used in fermented beverages, are known also for their potential health and nutritional benefits. This study aimed to evaluate *Aloe vera* juice grown in Mexico as a substrate for *Enterococcus faecium* isolated from breastmilk. To obtain the juice, *Aloe vera* gel was treated enzymatically with cellulase. The juice was inoculated with *E. faecium* at 37°C and initial pH 4.7 ± 0.2 . Biomass growth and pH were evaluated along the fermentation. Fermentation was also run with *Aloe vera* juice supplemented with 20 g/L of glucose. Glucose consumption and organic acids produced were analyzed by HPLC, and Total phenols were determined by Folin- Ciocalteu colorimetric method. Results obtained with *E. faecium* were compared with fermentations run with a commercial *Lactococcus Lactis* strain. Glucose from the *Aloe vera* juice was consumed in 24 h by the *E. faecium*, with a production of 2.25 g/L of lactic acid. In the juice supplemented with glucose, *E. faecium* did not consumed all the glucose up to 60 h fermentation, and produced 7.3 g/L of lactic acid. The pH dropped to 3 units in both treatments. There was a significant difference between the total phenols determined for both fermentations. A total of 192.50 ± 0.04 mg GAE/L was found for the fermentation run with the *Aloe vera* juice and 196.53 ± 0.06 mg GAE/L for fermentation with addition of glucose to the juice. For fermentations run with the commercial strain of *L. Lactis*, a higher amount of total phenols was determined, 222.30 ± 0.05 mg GAE/L and 226.90 ± 0.02 mg GAE/L for treatment without and with supplementation of glucose. Other acids of interest were also produced by both bacteria such as succinate, format, acetate, propionate, and iso- butyrate. *Aloe vera* showed to be suitable for the growth of the probiotic *E. faecium* bacteria, boosting bioactive metabolites in the obtained juice, which after process optimization may result in a new functional beverage.