EVALUATION OF XYLANASE, ALPHA-AMYLASE AND CELLULASE PRODUCTION FROM *Cellulosimicrobium sp.* USING A SWEET POTATO ROOT RESIDUES MEDIUM.

Debora Conde Molina[1], Gisela Tubio[2], Graciela Corbino[3].
1– Facultad Regional Delta, Universidad Tecnológica Nacional, Argentina.
2– Facultad de Ciencias Bioquímicas y Farmacéuticas, Universidad Nacional de Rosario, Argentina.
3 – Estación Experimental Agropecuaria San Pedro, Instituto Nacional de Tecnología Agropecuaria, Argentina.
e-mail: *dconde@frd.utn.edu.ar*

Enzymes such as xylanase, alpha-amylase and cellulase are widely used in the food industry, mainly in baking. Most enzyme production processes have focused on fungi as producer of enzymes, however, bacterial producers have been less studied. On the other hand, search for low-cost and easily available raw materials that can be used as fermentable substrates is one of the most interesting challenges in biotechnology. In this work, we evaluated a biotechnological process for the valorization of sweet potato root residues as carbon source in order to obtain xylanase, alpha-amylase and cellulose from *Cellulosimicrobium sp.* The three enzymes evaluated were detected from *Cellulosimicrobium sp.* CO1A1 when bacteria were harvested at 5 days of incubation. Enzyme activities were not detected in the supernatant culture, however, they were registered in the cell pellet, being 2.1 ± 0.1 U/mL for xylanase, 1.6 ± 0.1 U/mL for alpha-amylase and 0.8 ± 0.1 U/mL for cellulose. We conclude that *Cellulosimicrobium sp.* CO1A1 is able to produce xylanase, alpha-amylase and cellulose using an alternative low-cost carbon source. Further testing will

be needed to study xylanase production from *Cellulosimicrobium sp.* in order to generate a value-added product from the transformation of a residue product of agricultural activity.