

TITLE: PROSPECTING OF ENZYMES PRODUCED BY STREPTOMYCES SP. ISOLATES FROM SILAGE

AUTHORS: SANTOS, I.N.¹; OLIVEIRA, S.M.¹; SILVA, D.F.¹; SOUSA JÚNIOR, J.J.V.¹; PONTES, A.F.¹; DIAS, A.L.¹; AQUINO, V.H.R.¹; SILVA, A.L.¹; LIBERAL, T.C.F.¹; ESCHER, S.K.S.¹

INSTITUTION: ¹UFOPA – UNIVERSIDADE FEDERAL DO OESTE DO PARÁ (RUA VERA PAZ S/N – SALÉ – SANTARÉM-PA– BRASIL)

ABSTRACT:

The *Streptomyces* sp. are Gram-positive bacteria, morphologically similar as the fungi to present filamentous structure and have as main habitat the soil. This bacteria are cosmopolitan microorganisms, widely distributed in nature and are capable to producing a variety of secondary metabolites, which exhibit various biological activities, that can be used in the pharmaceutical and agricultural industries to produce important enzymes for biotechnological processes and in the food industry, such as amylases, esterases, Lipases, proteases, pectinases, and L-glutaminase which stands out for having antitumor activity. Therefore, the microorganisms represent a viable source for obtaining enzymes at low cost, due to the great ease in the manipulation of these and their production in large scale. This study aimed to determine the enzymatic potential of *Streptomyces* sp. SIL 18A isolated from silage samples of *Sorghum* sp. The production of the enzymes amylase, caseinase, catalase, lipase, esterase, gelatinase, urease, cellulase, L-asparaginase, L-glutaminase and hemolysin in solid media containing the specific substrate was evaluated. For each test, three replicates were performed. The enzymatic index (EI) was determined by the ratio between the diameter of the halo hydrolysis (mm) and the diameter of the colony (mm), being considered with an enzymatic potential IE above 1.5. *Streptomyces* sp. SIL 18A showed activity for amylase (IE = 4.09), caseinase (IE = 2.01), esterase (IE = 5.17), hemolysin (IE = 2.09). The strain of *Streptomyces* sp. SIL 18A did not produce the enzymes lipase, urease, cellulase and L-glutaminase. It also showed positive activity in the qualitative assays for catalase, gelatinase, and L-asparaginase. In this study, the highest EI presented was for esterase production.

Keywords: *Streptomyces* sp., Silage, Enzymatic Potential.