




FUNGAL HOME-MADE ENZYMATIC COCKTAILS FOR APPLE JUICE CLARIFICATION

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<https://doi.org/10.34302/crpjfst/2022.14.3.8>

Article history:

Received:

6 April 2022

Accepted:

29 July 2022

Published

September 2022

Keywords:

Bioprocess;

Sugarcane bagasse;

Cassava bagasse;

Aspergillus niger;

Endoxylanases

ABSTRACT

Sugarcane bagasse and cassava bagasse are lignocellulosic industrial residues that can be used as cheap substrates for organisms' growth. These lignocellulosic residues are also suitable for inducing enzyme secretion that can be applied in different bioprocesses such as juices clarification. The goal of our work was to use *Aspergillus niger* LBM 134 to produce xylanases, characterize them and employ these enzymes in the clarification of apple juice and pulp. *A. niger* LBM 134 was isolated from a natural environment and grown on sugarcane bagasse and cassava bagasse. The highest endoxylanase and β -xylosidase activity were $144 \pm 5,65$ and $0,74 \pm 0,05$ U mL⁻¹, respectively ($p < 0.05$). The optimum activity and high stability at acidic pH values make these enzymes suitable for biotechnological applications in juice industries. The enzymatic cocktails produced by the fungus grown on cassava bagasse reached the major clarification of apple juice ($36,66 \pm 4,01\%$) and pulp ($60,15 \pm 5,63\%$) ($p < 0.05$). These clarification percentages were due to the hydrolysis of hemicellulosic material carried out by the xylanases from *A. niger* LBM 134.
