

Abstract

Xylanases are industrially important enzymes. They are produced by a wide range of fungi, particularly filamentous fungi, such as *Trichoderma reesei*, *Trichoderma viride* and *Phanerochaete chrysosporium*. Xylanases are enzymes that catalyze the hydrolysis of 1, 4- β -D-xylosidic bonds in xylan, resulting xylose, a primary carbon source in cellular metabolism. Cellulose and xylan are two polysaccharides that induce effectively the synthesis of xylanolytic enzymes produced by the fungi mentioned above. Xylan is found in high quantities in the cell wall of annual plants. One of the main parameters influencing the activity of xylanases is the hydrogen ion concentration, pH of these enzymes fluctuating from one species to another.

To assess the impact pH has on xylanase activity, especially on β -xylanase, filamentous fungi *Trichoderma reesei*, *Trichoderma viride* and *Phanerochaete chrysosporium* were grown at different levels of pH, on a modified Mandels medium, where the main carbon source consists of byproducts from local agricultural practices (wheat straws and corn stalks). A dynamic profile of the activity was mapped, during a ten day period. The results indicated that β -xylanase activity is influenced by both the hydrogen ions concentration and the nature of the carbon source.

Key words: *Trichoderma reesei*, *Trichoderma viride*, *Phanerochaete chrysosporium*, β -xylanase