

Effect of different legume resource and technical parameters on urea hydrolysis

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April 28, 2020

Abstract

Urea hydrolysis is widely used in agriculture, environment and other engineering fields, among which urease contained in beans can catalyze urea hydrolysis. The urea hydrolysis activity of legume plant leaching solution(LPLS) was investigated, including soybeans, black beans, mung beans, red beans as well as soybean hulls, soybean leaves, soybean stems and soybean pods. For the high urea hydrolysis activity and economic efficiency, soybean is most suitable for agricultural engineering and other fields than other beans and soybean-related parts extract. The urea hydrolysis activity increases with the concentration of LPLS, while decreases gradually with reaction time. When the heating temperature reaches 25, 35, 45, 55 and 65 , the urea hydrolysis activity is steady and the enzyme activity is high. Enzyme activity decreases after 65 ° C (i.e.75, 90 ° C). Meanwhile, the soaking time of LPLS has a little effect on the urea hydrolysis activity compared with other factors. These results make a positive contribution to domestic production urease experimental basis.

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