

Pretreatment of empty palm fruit bunch for lignin degradation

Abstract

The potential of three chemical pretreatment methods for lignin degradation of empty palm fruit bunch (EPFB) was investigated. In method 1, sodium hydroxide (NaOH) and calcium hydroxide (Ca(OH)₂) bases were exclusively used as degradation agents. In the second method, hydrogen peroxide (H₂O₂) was simultaneously added with the base while the third method H₂O₂ was consecutively added into the EPFB–base mixtures after 24 h. The percentage of lignin degradation were 65%, 72% and 99% by using NaOH and 9%, 31% and 44% by using (Ca(OH)₂) for methods 1, 2 and 3 respectively. For the same conditions, NaOH demonstrated better performance than Ca(OH)₂ and method 3 was the most superior.