

The increasing fuel demand and depletion of fossil fuels urge for an alternative method to fulfil the need of society. In the current research, sawdust has been used for the production of bioethanol. Sawdust was subjected to pre-treatment using microwaves assisted acid and alkali pre-treatment methods. Sawdust pre-treated with 2% calcium hydroxide for 3 min showed maximum delignification *i.e* 84%. This pre-treated substrate with 40 mesh size was analysed for saccharification potential. The parameters affecting the rate of saccharification were optimized. Non-sequential addition of cellulases showed best yield of saccharification upto 8.15% as compared to sequential addition of cellulases. Cellulases concentration of Endo-1,4- β -glucanase (200 U), Exo-1,4- β -glucanase (300 U) and β -1,4-glucosidase (1000 U) were optimized for 0.25g substrate at 75°C for 5 h which showed 17.15% rate of saccharification. After saccharification, the optimized hydrolysate was analyzed for bioethanol production; fermentation was carried out using *S. cerevisiae*. The maximum bioethanol production was observed at 72 h having 9.4% yield. There was a 2.1 folds increase in the saccharification.