Food shortage, energy crisis, and environmental pollution are now major problems all over the world, which makes the utilization of cellulose quite urgent. Lignocellulosic biomass is the most abundant organic material on the earth and agricultural, industrial and municipal cellulosic wastes have been significantly accumulated because of high cost of their recycle process. Thus, they are the most promising feedstock for the production of energy, food and chemicals. Cellulases are most important enzyme for industry and inducible enzyme that produced by microorganisms on cellulosic material. Using of cheap agricultural wastes as carbon source is decrease cellulase production cost and provides waste utilization.

In this study, we aimed to purify and characterize of cellulase that is one of the most important enzyme in industry. For this purpose, cellulase was produced from local isolate Aspergillus niger under submerged fermentation using pretreated combination of red pine and black pine sawdust as a carbon source. Following of this step, cellulase concentrated from crude extract of culture medium with ammonium sulphate precipitation and then purified by gel filtration (Sephadex G-100). In following study optimum pH, temperature and thermal stability was determined.

At the end of this study, we purified cellulase with 4-fold. The optimal pH and temperature of enzyme was 4 and 60 °C, respectively. Obtained enzyme sustained their activity up to six hours.

**Keywords**: Aspergillus niger, cellulase, purification, local isolate, sawdust