Pectin lyase degrades pectic substances that are complex polysaccharides of middle lamella and primary cell walls of plants. In this study, alkaline thermostable pectin lyase from *Aspergillus niger* strain_WHAK1 was produced on wheat bran and citrus pectin in submerged culture. Pectin lyase was purified by ammonium sulfate fractionation, gel filtration and ion-exchange chromatography, and 76.5 purification fold was obtained. Optimum pH and temperature values of pectin lyase were 8.0 and 40°C at 60min, respectively. The enzyme was stable for 17 months at 4°C. Km and Vmax values were found to be 5.2mg/mL and 0.2(mmol/min)-1 mL, respectively. Molecular weight of pectin lyase was nearly 23.3 kDa. Effects on PL activity of metal ions (NaCl, KCl, CaCl2, MgCl2, CoCl2, CuCl2.H2O, FeCl3.6H2O, ZnSO4.7H2O, (NH4)2SO4, MnSO4), amino acids (l-tryptophan, l-cysteine hydrochloride monohydrate, l-arginine monohydrate), ascorbic acid, citric acid monohydrate, EDTA and resorcinol were studied. The presence of FeCl3, CaCl2and ascorbic acid significantly enhanced relative pectin lyase activity (%). The purified pectin lyase induced viscosity reduction in fruit juice samples, and it was effective for clarification of fruit juices. Pectin lyase showed substrate preference against fruit juice samples.