Studies on purification strategies that use simple, single step and low cost processes, which can produce high purification factors (PF) and high enzyme recovery (ER) yields are of great interest to biotechnology industry. This study aims to investigate the purification of pectinases (exo-polygalacturonase (exo-PG), pectin methylesterase (PME), pectin lyase (PMGL)) produced by Asperillus niger ATCC 9642, using aqueous two phase systems (ATPS) consisted of polyethylene glycol (PEG) and potassium phosphate buffer pH 6.0. After thorough mixing, the system was let to stand overnight at 5°C for complete phase separation. The best results for exo-PG purification were obtained with 16% PEG Mw 4000 10% phosphate buffer and 4.8% NaCl, which yielded a PF 1.37 and 49% ER. For PME the SAB with 18% PEG Mw 6000 and 10% phosphate buffer and 16% PEG Mw 10,000 and 8% phosphate buffer, without addition of NaCl, yielded PF 4.8 and 21.6, at top and bottom phases, respectively. Enzyme recoveries higher than 100% could be obtained in this systems, suggesting the removal of enzyme inhibitors. For PMGL a PF of 4.7 was obtained using 18% PEG Mw 10,000 and 10% phosphate buffer and 16% PEG Mw 1500 and 8% phosphate buffer, respectively.