A feeding trial was conducted to investigate the effects of diets containing two sources (S) of protein, soybean meal (SBM) and groundnut cake (GNC) combined with 7.5 and 15% levels (L) of inclusion of wheat offal on growth performance, carcass characteristics and economics of production of broilers. A total of two hundred and four chicks of Anak line were assigned to four dietary treatments each replicated three times in a factorial experiment. Birds were provided with feed and water *ad libitum* and the experiment lasted for seven weeks. Protein sources affected the relative organ weights as well as the carcass characteristics except for the caeca, gut and liver. Broilers fed SBM based diets had significantly higher (P<0.05) daily feed intake (94.64 vs 110.71 g), (P<0.001) daily weight gain (33.90 vs 52.2 g) and better (P<0.001) feed conversion ratio (2.12 vs 2.82 g) than those on GNC based diets. The cost of feed intake per bird (N/kg feed) was significantly higher (P<0.001) on SBM based diets than those containing GNC, but the cost of feed per kilogram of bird sold (N/kg gain) was significantly lower (P<0.001) on SBM based diets because birds on these diets achieved significantly greater (P<0.001) weight gain than those on diets containing GNC. Wheat offal levels had no effects on any of the parameters studied. In conclusion, soybean meal is a better protein source than groundnut cake and broiler feeds could contain up to 15% level of wheat offal at the starter phase without reduction of growth performance.