Fed batch fermentation was used to prevent the problem that occur in batch fermentation such as catabolite repression from substrate, end product inhibition and dissolved oxygen limitation. Furthermore it was used for produced high biomass and high product. In the previous study, we reported that the basal medium may contain inhibitor(s) that inhibited alkaline protease production. It is suspected that defatted soybean in the basal medium may be the important component for inhibition effect. The results showed that addition of nutrients into the medium contained 5 g/l defatted soybean did not affect alkaline protease production, alkaline protease production is still increased. It was possible that concentration of defatted soybean affected alkaline protease production. Alkaline protease production was inhibited at 10 g/l defatted soybean or above. Then fed-batch fermentation was used, initial concentration of carbon and nitrogen sources was reduced to 3 g/l glucose and 5 g/l defatted soybean, respectively. The nutrients consisted of 3 g/l glucose and 3 g/l defatted soybean were fed into the medium at 25, 37, 46, 61 and 72 hours. The results showed that alkaline protease production was not increased although the biomass was increased up to 18.32 g/l. This may be caused from the unsuitable feeding pattern, or the by product from the digestion of defatted soybean. Examples of the by product are amino acid, peptides and ammonium ion.