In this study, the effect of stemming length on rockpile size distribution is investigated. Fourteen blasting rounds with 10 holes each are test blasted. In the first group of test eleven blasting rounds were performed where stemming length was 3 m long, and three groups of blast rounds with stemming length of 4.5 m long were tested at the same limestone quarry of Konya cement factory. In these tests, average length of blast holes was 11 m and diameter of holes was 89 mm. After the trial blasts, rockpile size distribution was measured with standard “compare photo” method and verified by Split Desktop software results. The analysis of measurements showed that large size boulder generation was increased with increase in stemming length. For instance, +70 cm size fragments were increased from 31% to 71% by increasing stemming length from 3 m to 4.5 m. It has been proved that the increase in high percentage of boulder formation means the cost of crushing, grinding and hauling will be increased as well as increased time loss. Evaluating blast efficiency resulted in important economical findings for cement sector.