Abstract

Dehulling efficiency and loss were optimised for pigeon pea. The effects of dehulling time, moisture content and the use of mustard oil as a pre-milling treatment agent were studied and optimised using response surface methodology. A quadratic model satisfactorily described the dehulling efficiency with high value for the coefficient of determination R^2 (0.95) values. It predicted a maximum dehulling efficiency of 83.2% at 10.1% moisture content, 12.3 s. dehulling time and 0.3% mustard oil treatment. Moisture content and dehulling time affected dehulling loss significantly whereas the effect of mustard oil treatment was non-significant. A dehulling loss of 2.5% was predicted at optimum conditions. The results of the predicted optimum conditions were validated experimentally. Dehulling efficiency and loss at optimum conditions were observed to be 82.4±0.8% and 3.1±0.4%, respectively, and were close to the predicted values.