Feature selection is an important concept in rough set theory; it aims to determine a minimal subset of features that are jointly sufficient for preserving a particular property of the original data. This paper proposes an attribute reduction method that is based on Ant Colony Optimization algorithm and rough set theory as an evaluation measurement. The proposed method was tested on standard benchmark datasets. The results show that this algorithm performs well and competes other attribute reduction approaches in terms of the number of the selected features and the running tim