

## **Abstract**

Corn is one of the agricultural products that can be used either as essential food sources in daily life or energy sources. The selection or sorting process must be carried out to produce high-quality seeds, which will then be distributed to areas with varying conditions and agricultural characteristics. Hence, it is a necessity to build corn seeds identification. In this article, we propose a corn seed identification that incorporates the advantage of combining the shape and colour feature. The identification consists of 3 (three) main stages, namely, ROI selection, feature extraction, and classification using the Artificial Neural Network (ANN) algorithm. The shape feature is obtained from eccentricity value or comparison value between a distance of minor ellipse foci and major ellipse foci of an object. Meanwhile, the color features are extracted based on the HSV (Hue-Saturation-Value) channel. From the experimental result, we successfully show that our proposed system achieves excellent performance for the identification of bad and good corn quality of BIMA-20 and NASA-29 species. The classification result of BIMA-20 Good vs. BIMA-20 Bad gives an accuracy of 89%, while the classification accuracy of BIMA-20 Good vs. NASA-29 Good is 97%.

**Keywords** : Artificial Neural Network, Eccentricity, Feature Extraction, Region of Interest