

ABSTRACT

At Badan Karantina Ikan, Pengendalian Mutu, dan Keamanan Hasil Perikanan (BKIPM), counting shrimp is an important task in the monitoring and certification of fishery products. However, the currently applied manual counting method is time-consuming and prone to human error, impacting operational efficiency. With advancements in technology, a system capable of automatically and accurately counting shrimp is needed. This study develops an automatic shrimp counting model based on images using the YOLOv5 algorithm. The research process includes shrimp image data collection, model training, and result evaluation. In this study, several training scenarios were tested to identify the best model, with YOLOv5m identified as the optimal model. The training results showed precision, recall, and average precision (AP) values of 0.988, 0.992, and 0.994, respectively. After training, the model was tested using test data, resulting in precision, recall, and mAP values of 0.987, 0.987, and 0.994, with an error percentage of 5.71%, calculated based on the difference between the number of detected shrimp and the actual number. The implementation of this system is expected to facilitate the relevant division at BKIPM in the shrimp counting process and reduce reliance on manual methods.

Keywords : Shrimp, Automatic Counting, YOLOv5, BKIPM