

**Sistem Monitoring Berat Tanaman Pada *Farmbot* Dengan Citra Digital
Menggunakan Metode *Yolo* Dan *Regresi Polinomial* (*Monitoring Plant Weight
System on Farmbot Using Digital Images with YOLO and Polynomial
Regression Methods*)**

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ABSTRACT

This research aims to monitor the growth of lettuce plants using a farmbot with a combined approach of YOLOv3 and third-order polynomial regression. YOLOv3 is employed for plant detection, while the polynomial regression calculates the estimated plant weight based on the pixel area generated by YOLOv3. Additionally, the study integrates a mobile application to monitor plant weight, visualize plant growth, and access daily historical growth data. The research results indicate an accuracy of 2.9% for polynomial regression and 98.6% for YOLOv3, confirming their effectiveness in weight prediction and plant detection. With positive implications for agriculture, this technology is expected to enhance the efficiency and management of plant growth, providing valuable information for farmers to make informed decisions and supporting increased productivity and sustainability in agriculture.

Keywords : *farmbot, YOLOv3, polynomial regression, plant detection, pixel area, mobile application.*