

BAB VI

PENUTUP

A. Kesimpulan

Berdasarkan hasil penelitian, implementasi dan pengujian aplikasi pendeteksi penyakit daun tanaman buah menggunakan model *Convolutional Neural Network* (CNN) berbasis YOLOv8n yang telah dilakukan, maka dapat disimpulkan bahwa model deteksi mampu mengenali sepuluh kelas penyakit tanaman buah. Penelitian ini berhasil membangun dataset yang terstruktur serta mengembangkan model deteksi penyakit daun berbasis YOLOv8n yang dapat diimplementasikan ke dalam aplikasi *mobile*. Hasil pengujian menggunakan 50 citra uji menunjukkan tingkat akurasi keseluruhan sebesar 84%, yang dihitung berdasarkan jumlah hasil benar dibandingkan dengan total pengujian. Hal ini menunjukkan bahwa model memiliki kemampuan klasifikasi yang baik untuk mendeteksi kondisi daun sehat maupun terinfeksi penyakit.

Hasil evaluasi model menunjukkan performa yang cukup stabil dan tidak mengalami *overfitting* secara signifikan karena perbedaan antara nilai akurasi *training* dan *validation* relatif kecil. Namun, beberapa kesalahan deteksi masih terjadi pada citra dengan kondisi pencahayaan terang dan buram. Dengan demikian, sistem pendeteksi penyakit daun ini menjadi solusi untuk membantu deteksi dini penyakit tanaman buah pada pertanian skala kecil tanpa koneksi internet.

B. Saran

Berikut adalah saran dari hasil pengembangan deteksi penyakit daun tanaman buah:

1. Menambah variasi dataset seperti kondisi daun dengan pencahayaan dan latar belakang berbeda.
2. Menguji secara langsung pada berbagai kondisi cuaca dan perangkat berbeda.

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Gambar 32. Uji Coba Deteksi Daun Tomat



Gambar 33. Uji Coba Deteksi Daun Stroberi



Gambar 34. Uji Coba Deteksi Daun Anggur



Gambar 35. Uji Coba Deteksi Daun Apel