

4. KESIMPULAN

Berdasarkan hasil metrik evaluasi yang telah dilakukan maka dapat disimpulkan beberapa hal sebagai berikut:

1. Model YOLOv8 yang dilatih dengan 100 epoch dan batch ukuran 8 mampu mengklasifikasikan kesegaran buah (*fresh, semirotten, rotten*) dengan akurasi rata-rata 88%.
2. Evaluasi pada metrik umum menunjukkan presisi 74% dan recall 75% pada epoch ke-100. Sehingga Rata-rata presisi keseluruhan model dalam mendeteksi kesegaran buah adalah sekitar 73%.

5. SARAN

Model YOLOv8 yang dilatih dengan 100 *epoch*, 8 *batch* dan 5215 gambar memiliki tingkat akurasi sebesar 88%, ini menunjukkan dengan *epoch* yang terbatas model object YOLOv8 dapat masih bersaing dengan algoritma deteksi lainnya seperti gabungan ResNet, DenseNet, MobileNetV2, NASNet, dan EfficientNet yang memiliki akurasi sebesar 95,2 % [11]. Kemudian *Multilayer Perceptron* (MLP) dengan akurasi 97,2% [12], arsitektur Alexnet dengan akurasi 99.1% [13] dan YOLOv5 dengan akurasi sebesar 94.5% [14]. Oleh karena itu percobaan *epoch* dan *batch* yang lebih tinggi memiliki potensi menjadi penelitian selanjutnya, untuk dapat mengembangkan model YOLOv8 untuk deteksi buah dengan akurasi yang lebih tinggi.

DAFTAR PUSTAKA

- [1] J. Ni, J. Gao, L. Deng, and Z. Han, "Monitoring the Change Process of Banana Freshness by GoogLeNet," *IEEE Access*, vol. 8, pp. 228369–228376, Jan. 2020, doi: 10.1109/ACCESS.2020.3045394.
- [2] I. J. González-Hernández, R. Granillo-Macías, J. L. Martínez-Flores, D. Sánchez-Partida, and D. E. Gibaja-Romero, "Hybrid model to design an agro-food distribution network considering food quality," *International Journal of Industrial Engineering : Theory Applications and Practice*, vol. 26, no. 4, pp. 588–609, Jan. 2019.
- [3] V. L. Flax, C. Thakwalakwa, C. H. Schnefke, J. C. Phuka, and L. M. Jaacks, "Food purchasing decisions of Malawian mothers with young children in households experiencing the nutrition transition," *Appetite*, vol. 156, p. 104855, Jan. 2021, doi: 10.1016/j.appet.2020.104855.
- [4] V. Quick *et al.*, "Preserving farm freshness: Consumer preferences for local value-added products at urban farmers markets," *J Agric Food Syst Community Dev*, vol. 11, no. 2, pp. 113–134, doi: 10.5304/jafscd.2022.112.004.
- [5] H. N. J. Schifferstein, T. Wehrle, and C. C. Carbon, "Consumer expectations for vegetables with typical and atypical colors: The case of carrots," *Food Qual Prefer*, vol. 72, pp. 98–108, Mar. 2019, doi: 10.1016/j.foodqual.2018.10.002.
- [6] S. R. Jaeger, S. L. Chheang, C. M. Roigard, and M. B. Frøst, "Consumers' expectations and experiences of salad greens, herbs, and fruits from vertical farming: Comparison with organic produce," *Food Qual Prefer*, vol. 112, p. 105020, Dec. 2023, doi: 10.1016/j.foodqual.2023.105020.
- [7] X. Du, M. Davila, C. Williams, and Y. Weng, "Fresh Cucumber Fruit Physicochemical Properties, Consumer Acceptance, and Impact of Variety and Harvest Date," *ACS Food Science and Technology*, vol. 2, no. 4, pp. 616–629, Apr. 2022, doi: 10.1021/acscfoodscitech.1c00433.
- [8] H. Neetoo *et al.*, "A comparative assessment of the quality of minimally processed pineapples sold in wet markets and supermarkets of mauritius," *Current Research in Nutrition and Food Science*, vol. 7, no. 1, pp. 128–141, Apr. 2019, doi: 10.12944/CRNFSJ.7.1.13.
- [9] P. Choosung, T. Wasusri, W. Utto, P. Boonyariththongchai, and C. Wongs-Aree, "The supply chain and its development concept of fresh mulberry fruit in Thailand: Observations in Nan Province, the largest production area," *Open Agric*, vol. 7, no. 1, pp. 401–419, Jan. 2022, doi: 10.1515/opag-2022-0102.