

INTISARI

APLIKASI LIDAH ELEKTRONIK UNTUK MEMBEDAKAN TEH HITAM BOHEA, PF 1 & PF2 MENGGUNAKAN *DEEP NEURAL NETWORK*

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Penelitian terkait aplikasi lidah elektronik telah dilakukan untuk membedakan teh hitam berdasarkan Standar Nasional Indonesia (SNI). Penelitian dilakukan dengan menganalisa tiga jenis teh hitam antara lain BOHEA, PF1, dan PF2 menggunakan perangkat lidah elektronik. Perangkat lidah elektronik tersusun atas 16 larik sensor rasa yang dibuat dengan menggabungkan membrane *lipid* dan elektroda referensi. Data berupa beda potensial tiap sensor diverifikasi menggunakan *Deep Neural Network* (DNN). Data tersebut digunakan untuk melatih model dan validasi internal menggunakan *cross validation* (80% data) dan validasi eksternal (20% data). Dari pengujian sampel hitam menggunakan metode DNN didapatkan nilai akurasi sebesar 97,95%. Dengan demikian, lidah elektronik dapat digunakan untuk membedakan jenis teh hitam.

Kata Kunci : Lidah Elektronik, Membran *Lipid*, Teh Hitam, *Deep Neural Network*, Akurasi.

ABSTRACT

ELECTRONIC TONGUE APPLICATIONS TO DISTINGUISH BLACK TEA BOHEA, PF 1 & PF2 USING DEEP NEURAL NETWORK

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Research on electronic tongues application has been carried out to distinguish black tea based on Indonesian National Standard (SNI). Research was conducted by analyzing three types of black tea i.e. BOHEA, PF1, and PF2 using electronic tongue devices. Electronic tongue device is composed of 16 array of taste sensors made by combining lipid membrane and reference electrode. Potential data for each sensor were verified using Deep Neural Network (DNN). Data is used to train model and internal validation using cross validation (80% data) and external validation (20% data). From testing black tea samples using DNN method obtained an accuracy value of 97.95%. Thus, an electronic tongue can be used to distinguish between types of black tea.

Keywords: Electronic Tongue, Lipid Membrane, Black Tea, Deep Neural Network, Accuracy.