The investigation of meat classification based on significant authentication features using odor-profile intelligent signal processing approach

Nur Farina Hamidon Majid, Muhammad Sharfi Najib, Suhaimi Mohd Daud, Nurdiyana Zahed, Muhamad Faruqi Zahari, Suziyanti Zaib, Mujahid Mohamad, Tuan Sidek Tuan Muda, Hadi Manap
Universiti Malaysia Pahang, Pekan, Pahang 26600, Malaysia

ABSTRACT

Meat is the flesh or another edible part of an animal and includes uncooked meat prepared or otherwise but does not include meat products. Meat is the most valuable livestock product and for many people serves as their first-choice source of animal protein. Fraud meat products are causing annoyance to consumer's, especially Muslim users. There are many cases that have been brought to the public attention regarding fraud on meat products such as incidences of meat that is labeled, certified or sold as halal may not be so. This project sets out to identify two types of different meat which is beef meat and pork meat. Therefore, the significant authentication features using odor-profile intelligent signal processing approach which is Electronic Nose (E-nose) was used to measure odor-profile from meat. E-nose is one of the chemical-based sensor arrays instruments which have a capability to measure odor-profile based sample data. The data measurement of odor-profile for different meat samples was collected based on the designated experimental procedure. Then, the normalized and their unique features were extracted using statistical tools for feature extraction. The input of features will be inserting into Case-Based Reasoning (CBR) library and intelligently classified using CBR method and will be validated based specific performance measure. From the CBR performance measures result, it is observed that the classification of CBR is 100%.