

## Documents

Jefferi, N.Z., Amir, A., Purwanto, H.

**Detection Method of Kelulut Honey Adulteration**

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**Abstract**

The high demand for honey and its expensive market price have lured adulterated honey into the honey industry. Advancements in technology today made it very difficult for consumers to distinguish between pure and adulterated honey. The texture, scent and taste of adulterated honey can be created to be very similar to pure honey to disguise its identity. In this study, a user-friendly detection method has been developed to identify adulterated kelulut honey. Four types of adulterants at varied percentages have been mixed with pure kelulut honey (PKH). The adulterants are 25% syrup, 50% syrup, 25% vinegar and 50% vinegar, all samples were compared against an original sample that contains 100% PKH. The results have shown that the adulterated samples can be identified by comparing their wavelength values with the original sample using an infrared detection method. The outcome of this study will benefit the consumers to protect their healthcare and well-being from the hazardous effects of consuming adulterated kelulut honey because it can affect people's health of every age, race, gender, and income level. © 2023, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

**Author Keywords**

Adulterated Kelulut honey; Consumers healthcare; Infrared detection method

**Index Keywords**

Food products, Health care, Infrared detectors; Adulterated kelulut honey, Consumer healthcare, Detection methods, High demand, Honey adulteration, Infrared detection, Infrared detection method, Market price, Original sample, User friendly; Textures

**References**

- Fakhlaei, R., Selamat, J., Khatib, A., Abdull Razis, A.F., Sukor, R., Ahmad, S., Babadi, A.A.  
**The toxic impact of honey adulteration: A review**  
(2020) *Foods*, 9 (11), p. 1538.
- **Push-ing the Limits of the Maximum Punch-Through Design with an Advanced Buffer for Thin Wafer IGBTs**  
(2020) *Proc. Int. Symp. Power Semicond. Devices Ics*, pp. 509-512.
- **Push-ing the Limits of the Maximum Punch-Through Design with an Advanced Buffer for Thin Wafer IGBTs**  
(2020) *Proc. Int. Symp. Power Semicond. Devices Ics*, pp. 509-512.
- Dudeja, P., Gupta, R.K., Minhas, A.S.  
(2016) *Food Safety in the 21St Century: Public Health Perspective*, 1st edn. Academic Press
- Puścion-Jakubik, A., Borawska, M.H., Socha, K.  
**Modern methods for assessing the quality of bee honey and botanical origin identification**  
(2020) *Foods*, 9 (8), pp. 1-21.
- (2022) *Quinolone Honey Rapid Test Kit*, June
- **Push-ing the Limits of the Maximum Punch-Through Design with an Advanced Buffer for Thin Wafer IGBTs**

(2020) *Proc. Int. Symp. Power Semicond. Devices Ics*, pp. 509-512.

• Buda, R.A.

**Addi MM (2014) A portable non-invasive blood glucose monitoring device**

*IEEE Conference on Biomedical Engineering and Sciences*, pp. 964-969.

IEEE, Miri

• **Push-ing the Limits of the Maximum Punch-Through Design with an Advanced Buffer for Thin Wafer IGBTs**

(2020) *Proc. Int. Symp. Power Semicond. Devices Ics*, pp. 509-512.

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