UJI KEASLIAN SUSU SAPI SEGAR PADA WARUNG SUSU DI KOTA SEMARANG

TESTING THE AUTHENTICITY OF FRESH COW MILK AT MILK STALLS IN SEMARANG CITY

TUGAS AKHIR S1

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20.I1.0038

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memperoleh gelar Sarjana Teknologi Pangan

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RINGKASAN

Susu merupakan salah satu produk pangan yang dihasilkan oleh mamalia seperti sapi, kambing, domba, kuda, dan berbagai mamalia lainnya. Sebagai produk pangan, susu memiliki kandungan gizi yang tinggi seperti karbohidrat, lemak, protein, vitamin A, vitamin D, dan beberapa mineral penting seperti kalsium dan fosfor. Produksi susu sapi di negara berkembang seperti Indonesia cenderung rendah. Hal ini diakibatkan karena kondisi lingkungan yang tidak mendukung untuk produksi susu dalam jumlah besar serta tidak adanya teknologi maju yang dapat mendukung produksi susu secara massal. Pemalsuan atau adulterasi pada susu sapi banyak dilakukan karena susu sapi memiliki karakteristik yang mudah rusak dan memiliki umur simpan yang singkat. Terdapat beberapa jenis adulterasi yang dapat dilakukan untuk susu sapi yaitu penambahan air, jenis susu lain, urea, melamin, dan masih banyak lagi. Penelitian dilakukan untuk mengevaluasi keaslian sampel susu segar dari Kota Semarang. Pengujian sampel menggunakan metode Pengujian Susu Segar pada SNI 01-2782-1998 serta alat *Fourier Transform InfraRed* kemudian hasil yang didapat akan dibandingkan dengan SNI 3141-01 :2011mengenai susu segar. Sampel diambil dari enam warung susu di kota Semarang dengan metode *random sampling*. Susu murni dari peternakan sapi di Semarang dipilih sebagai kontrol. Evaluasi secara organoleptik dilakukan dengan uji desktriptif, dimana panelis yang dipilih harus mempunyai kebiasaan minum susu segar. Untuk mencapai suatu kesepakatan tentang deskripsi organoleptik susu dilakukan melalui *focus group discussion* (FGD). Uji berat jenis, kadar protein, kadar lemak, bahan kering tanpa lemak (BKTL), titik beku, pH, uji alkohol dilakukan pada semua sampel susu dan kontrol. Berdasarkan hasil penelitian yang dibandingkan dengan standar mutu susu segar dari SNI 3141-01 :2011dan data hasil pengujian FTIR, semua sampel susu yang diambil dari warung-warung susu di Kota Semarang terindikasi mengalami pemalsuan melalui penambahan air.

SUMMARY

Milk is a food product produced by mammals such as cows, goats, sheep, horses and various other mammals. As a food product, milk has high nutritional content such as carbohydrates, fat, protein, vitamin A, vitamin D, and several important minerals such as calcium and phosphorus. Cow's milk production in developing countries like Indonesia tends to be low due to environmental conditions that do not support the production of milk in large quantities and the absence of advanced technology that can support mass milk production. Adulteration or adulteration of cow's milk is often done because cow's milk has characteristics that are easily damaged and have a short shelf life. Various methods of cow's milk adulteration exist, including dilution with water, addition of other milk types, urea, melamine, and numerous other substances. . The research was conducted to evaluate the authenticity of fresh milk samples from Semarang City. The samples underwent testing following the Fresh Milk Testing procedure outlined in SNI 01-2782-1998, and the outcomes were compared with those outlined in SNI 3141-01:2011. FTIR is employed for identifying functional groups of fatty acids present in samples, which are subsequently contrasted with those found in pure fresh milk augmented with water or coconut milk at specific concentrations. Samples were collected from six milk stalls in Semarang City using random sampling method. As a control, pure milk sample from a recognized milk farm was used. Descriptive tests were utilized for organoleptic assessment, requiring panelists with a history of consuming fresh milk. Consensus on milk's organoleptic attributes was achieved through a focus group discussion (FGD). Specific gravity, protein content, fat content, non-fat dry matter (BKTL), freezing point, pH, and alcohol tests were conducted on both milk and control samples. Based on research results compared with fresh milk quality standards from SNI 3141-01:2011 and FTIR test data, all milk samples taken from milk stalls in Semarang City were indicated to be adulterated through the addition of water.