

INTISARI

DETEKSI SPESIES BABI DENGAN UJI *PORCINE DETECTION KIT* DAN ANALISIS PROTEIN DENGAN UJI *KJELDAHL* PADA KUAS *BRISTLE*

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Manusia memanfaatkan rambut hewan untuk bahan baku produksi di industri, misalnya industri kuas dengan alasan efektifitas ekonomi. Penelitian ini bertujuan membuktikan bahwa kuas *bristle* berasal dari rambut babi dengan cara isolasi protein, deteksi spesies babi dengan uji *Porcine Detection Kit*, dan menganalisis persentase protein yang terkandung dengan uji *Kjeldahl*.

Penelitian ini menggunakan tiga kuas *bristle*. Sampel berupa 0,2 gram rambut kuas *bristle*. Isolasi protein dilakukan dengan cara sampel diekstraksi dengan 25 ml SDS 2%, ditambah 25 ml PBS (pH 7,8), dan diinkubasi pada suhu 65 °C selama 18 jam. Ekstrak sampel dikeluarkan dari inkubator dan dihomogenisasi pada suhu ruang selama satu jam. Ekstrak sampel ditambah H₂SO₄ 10% dengan perbandingan 1:1, kemudian dipanaskan dalam *waterbath* 40 °C selama satu jam sambil dikocok setiap ± 5 menit sekali. Ekstrak sampel ditambah 50 ml NH₄HCO₃ 50%, kemudian disentrifugasi 6000 rpm selama 5 menit yang membentuk lapisan atas dan bawah. Ekstrak sampel diuji dengan *Porcine Detection Kit* dan persentase proteinnya dihitung dengan uji *Kjeldahl*.

Hasil uji *Porcine Detection Kit* ketiga sampel menunjukkan hasil positif. Hasil uji *Kjeldahl* kuas pertama: protein lapisan atas 15,74%, protein lapisan bawah 12,10%, dan protein ekstrak yang tidak disentrifugasi 14,70%. Hasil uji *Kjeldahl* kuas kedua: protein lapisan atas 31,26%, protein lapisan bawah 28,58%, dan protein ekstrak yang tidak disentrifugasi 29,47%. Hasil uji *Kjeldahl* kuas ketiga: protein lapisan atas, protein lapisan bawah, dan protein ekstrak yang tidak disentrifugasi masing-masing 35,72%. Hal tersebut menunjukkan bahwa kuas *bristle* positif berasal dari rambut babi yang mengandung protein dengan persentase yang tinggi.

Kata kunci: *Porcine Detection Kit*, uji *Kjeldahl*, kuas *bristle*, rambut babi, isolasi protein

ABSTRACT

DETECTION OF PIG SPECIES WITH PORCINE DETECTION KIT TEST AND PROTEIN ANALYSIS WITH KJELDAHL TEST ON BRISTLE BRUSHES

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Humans use animal hair as raw materials for production in the industry, such as brush industry based on economic effectiveness. This research aimed to prove the bristle brushes came from pig's hair by protein isolation, detection of pig species using Porcine Detection Kit test, and analyzed the percentage of protein using Kjeldahl test.

This research used sample of three bristle brushes. Samples were 0.2 grams of bristle brush hair. Protein isolation was treated by the sample extracted with 25 ml of 2% SDS and 25 ml of PBS (pH 7.8), then incubated at 65°C for 18 hours. Samples were taken out from incubator and homogenized in room temperature for 1 hour. Sample extract was added with 10% H₂SO₄ as much as 1:1, and then heated in waterbath at 40°C for 1 hour and shaken every \pm 5 minutes. Sample extract was added with 50 ml of 50% NH₄CO₃, then centrifuged by 6000 rpm for 5 minutes that forming top and bottom layers. Sample extract was tested by Porcine Detection Kit and the protein percentage was calculated by Kjeldahl test.

Porcine Detection Kit result of three samples indicated the positive results. Kjeldahl test result of the first brush: protein of the top layer was 15,74%, protein of the bottom layer was 12,10%, and the uncentrifugated protein extract was 14,70%. Kjeldahl test result of the second brush: protein of the top layer was 31,26%, protein of the bottom layer was 28,58%, and the uncentrifugated protein extract was 29,47%. Kjeldahl test result of the third brush: protein of the top layer, protein of the bottom layer, and the uncentrifugated protein extract was 35,72% for each. It showed that the bristle brushes positively came from pig's hair containing high percentage of protein.

Keywords: Porcine Detection Kit, Kjeldahl test, bristle brushes, pig hair, protein isolation