

INTISARI

Produk hasil peternakan merupakan bahan pangan yang rentan terhadap pemalsuan, baik dengan bahan yang halal atau tidak halal. Deteksi spesies menggunakan metode *Polymerase Chain Reaction* (PCR) merupakan metode paling valid yang dapat digunakan saat ini. Penelitian ini bertujuan untuk mendeteksi kontaminasi bakso sapi dengan daging babi atau ayam pada warung bakso di Kabupaten Bojonegoro dan Boyolali dengan metode PCR. Sampel bakso masing-masing diambil 36 warung bakso di Kabupaten Bojonegoro dan 36 warung bakso di Kabupaten Boyolali. Bakso referensi sebagai kontrol positif disiapkan di laboratorium. Isolasi DNA dilakukan pada bakso sampel yang dikoleksi, bakso referensi, dan daging segar sebagai bahan uji spesifitas. Konsentrasi DNA diukur menggunakan spektrofotometer dan visualisasi hasil isolasi dan PCR dilakukan dengan agarose gel elektroforesis dan UV transiluminator untuk mengetahui keberadaan pita DNA. Isolat DNA diamplifikasi dengan PCR menggunakan primer spesifik ayam, sapi, dan babi berturut-turut sebagai berikut: forward 5' CTG GGT TGA AAA GGA CCA CAG T 3' dan reverse 5' GTG ACG CAC TGA ACA GGT TG 3'; forward 5' TTT CTT GTT ATA GCC CAC CAC AC 3' dan reverse 5' TTT CTC TAA AGG TGG TTG GTC AG 3', forward 5' AAA GGA CCC AAC GTT GTA GG 3' dan reverse 5' TAG TGC TAG GGA TAA GGC TAG G 3'. Hasil penelitian menunjukkan bahwa terdapat kontaminasi daging ayam pada bakso sapi pada 30 sampel dari Kabupaten Bojonegoro dan 33 sampel dari Kabupaten Boyolali. Hasil penelitian juga menunjukkan sejumlah 22 sampel dari Kabupaten Boyolali terkonfirmasi dengan PCR mengandung babi, sedangkan sampel bakso sapi dari Kabupaten Bojonegoro tidak terdeteksi adanya kontaminasi babi. Kesimpulan penelitian ini adalah implementasi metode PCR menggunakan ketiga primer spesifik tersebut mampu mendeteksi kontaminasi daging pada bakso yang beredar dipasaran. Terdapat kontaminasi daging ayam dan babi pada sampel bakso sapi yang beredar di pasaran.

Kata Kunci : Bakso, Deteksi, Kontaminasi, *Polymerase chain reaction*.

ABSTRACT

Animal products are foodstuffs that are vulnerable to adulteration, either with ingredients that are halal or not. Meatballs are one of the processed animal products that are susceptible to adulteration. Several studies have reported that there are adulteration of meatballs either with chicken or pork. Species detection using the Polymerase Chain Reaction (PCR) method is the most commonly used method nowadays. Therefore, this study aims to detect the contamination of beef meatballs with pork or chicken in commercial meatballs from Bojonegoro and Boyolali Regency using the PCR method. The samples of each meatballs were collected from 36 meatball shops in Bojonegoro Regency and in Boyolali Regency, respectively. Reference meatballs as positive control were prepared in the laboratory. DNA isolation on the collected meatball samples, reference meatballs, and fresh meat as a specificity test. The concentration of DNA was measured using a spectrophotometer and visualization of the results of the isolation and PCR was carried out with agarose gel electrophoresis and UV transilluminator to see the presence of DNA bands. DNA isolates were amplified by PCR using specific primers for chickens, bovine, and pork as follows: forward 5 'CTG GGT TGA AAA GGA CCA CAG T 3' and reverse 5 'GTG ACG CAC TGA ACA GGT TG 3'; forward 5 'TTT CTT GTT ATA GCC CAC CAC AC 3' and reverse 5 'TTT CTC TAA AGG TGG TTG GTC AG 3', forward 5 'AAA GGA CCC AAC GTT GTA GG 3' and reverse 5 'TAG TGC TAG GGA TAA GGC TAG G 3'. The results showed that there was contamination of chicken meat in beef meatballs in 30 samples from Bojonegoro Regency and 33 samples from Boyolali Regency. The results also showed that 22 samples from Boyolali Regency confirmed by PCR contained pork. The conclusion of this study is that the implementation of the PCR method using the three specific primers was able to detect meat contamination in the meatballs that were determined in the market. There is contamination of chicken and pork in commercial beef meatball samples.

Keywords: Meatballs, Detection, Contamination, Polymerase chain reaction.