

ABSTRAK

DETEKSI INFEKSI *Toxoplasma gondii* DENGAN METODE POLYMERASE CHAIN REACTION PADA AYAM KAMPUNG DI PASAR TRADISIONAL KECAMATAN WIROBRAJAN, GANDOMANAN, SERTA MANTRIJERON, KOTA YOGYAKARTA

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Toksoplasmosis merupakan penyakit zoonosis disebabkan oleh *Toxoplasma gondii* yang dapat menyerang hewan berdarah panas, termasuk manusia. Penularan toksoplasmosis terjadi secara kongenital (via plasenta induk) atau perolehan (memakan ookista infeksi *Toxoplasma gondii*). Penelitian ini bertujuan untuk mendeteksi infeksi *Toxoplasma gondii* dengan metode *polymerase chain reaction* (PCR) pada ayam kampung yang dijual di pasar tradisional Kota Yogyakarta.

Otot ayam kampung yang dikoleksi dari lima pasar tradisional di Kecamatan Wirobrajan, Gondomanan, serta Mantrijeron, kemudian dilakukan isolasi *Deoxyribonucleic Acid* (DNA) melalui lima tahapan, yaitu : disosiasi jaringan, lisis sel, pengikatan DNA, pencucian DNA, dan elusi DNA. Hasil isolasi DNA digunakan sebagai *template* untuk proses amplifikasi dengan metode PCR. Produk PCR (*amplicon*) kemudian dielektroforesis dan divisualisasi dengan *ultraviolet* (UV) *transilluminator*.

Visualisasi elektroforesis menunjukkan adanya pendaran pita DNA berukuran 403 bp sebagai target amplifikasi terhadap gen B1 *Toxoplasma gondii* yang spesifik untuk mendeteksi infeksi parasit tersebut. Penelitian ini menunjukkan sampel dari tiga pasar (Serangan, Legi, dan Pathuk) positif terinfeksi *Toxoplasma gondii*, sedangkan sampel dari dua pasar (Condrongaran dan Gading) hasilnya negatif.

Kata kunci: elektroforesis DNA, Kota Yogyakarta, otot ayam kampung, PCR, toksoplasmosis.

ABSTRACT

DETECTION OF *Toxoplasma gondii* INFECTION USING POLYMERASE CHAIN REACTION METHOD ON FREE-RANGE CHICKEN SOLD AT TRADITIONAL MARKETS OF WIROBRAJAN, GANDOMANAN, AND MANTRIJERON DISTRICTS, YOGYAKARTA CITY

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Toxoplasmosis is a zoonotic disease caused by *Toxoplasma gondii*. This protozoan is capable of infecting all warm-blooded animals, also humans. Transmission of toxoplasmosis can occur congenitally (via parent placental) or acquired (eating the infective oocysts of *Toxoplasma gondii*). This research aims to detect *Toxoplasma gondii* infection using a polymerase chain reaction (PCR) method in free-range chicken sold at a traditional market in Yogyakarta City.

Muscle samples of free-range chicken were collected from five traditional markets in Wirobrajan, Gondomanan, and Mantrijeron districts. Deoxyribonucleic Acid DNA isolation was carried out on the samples through five stages: tissue dissociation, cell lysis, DNA binding, DNA washing, and DNA elution. The result of DNA isolation was used as a template for the amplification process using the PCR method. The PCR product (amplicon) was then electrophoresed and visualized with ultraviolet (UV) transilluminator.

Electrophoresis visualization showed the presence of DNA band luminescence measuring 403 bp as a target for amplification of the specific B1 gene of *Toxoplasma gondii* to detect infection with the parasite. This research showed three samples from (Serangan, Legi, and Pathuk) markets are positive infected by *Toxoplasma gondii*, on the opposite, two samples from (Condrongaran and Gading) markets show negative results.

Keywords: DNA electrophoresis, free-range chicken muscles, PCR, toxoplasmosis, Yogyakarta City.