

INTISARI

PENGEMBANGAN METODE *Loop-Mediated Isothermal Amplification* (LAMP) UNTUK DETEKSI DINI LEPTOSPIROSIS

**Muchamad Ardiyat Firmansyah
11/311913/KH/06979**

Leptospirosis merupakan penyakit zoonosis yang disebabkan oleh infeksi bakteri dari genus *Leptospira sp.*. Leptospirosis merupakan penyakit endemik di daerah beriklim tropis. Berbagai macam metode telah digunakan untuk mendiagnosa leptospirosis seperti *Microscopic Agglutination Tests* (MAT) dan *Polymerase Chain Reaction* (PCR). Metode tersebut masih memiliki kelemahan dan keberadaannya hanya terbatas di beberapa laboratorium di Indonesia. Pengembangan metode *Loop-Mediated Isothermal Amplification* (LAMP) bertujuan untuk menjadikan metode ini sebagai metode alternatif diagnosa cepat, akurat, dan ekonomis yang diperlukan dalam upaya pengendalian leptospirosis yang sangat berpotensi mengancam kesehatan publik dan mencegah terjadinya *outbreak* atau kejadian luar biasa leptospirosis. Prosedur penelitian dimulai dari pengoleksian sampel urin, perlakuan urin, dan penerapan metode *Loop-Mediated Isothermal Amplification* (LAMP). Sampel urin sapi yang diperoleh dari Kecamatan Wijimulyo sebanyak 8 sampel dan dari Kecamatan Moyudan sebanyak 6 sampel. Pada perlakuan urin dengan metode sentrifus, semua sampel memperlihatkan hasil positif terdapat DNA *Leptospira sp.* yang ditandai dengan warna hijau berpendar. Pada perlakuan urin dengan metode *boiling*, semua sampel memperlihatkan hasil positif terdapat DNA *Leptospira sp.* yang ditandai dengan kekeruhan. Hasil penelitian menunjukkan kemampuan *Loop-Mediated Isothermal Amplification* (LAMP) sebagai alat uji diagnosa leptospirosis sebagai langkah alternatif deteksi dini secara cepat, akurat dan ekonomis.

Kata kunci: *Leptospira*, Leptospirosis, *Loop-Mediated Isothermal Amplification* (LAMP), Urin sapi

ABSTRACT

DEVELOPMENT OF *Loop-Mediated Isothermal Amplification* (LAMP) METHOD FOR EARLY DETECTION OF LEPTOSPIROSIS

**Muchamad Ardiyat Firmansyah
11/311913/KH/06979**

Leptospirosis is a zoonoses disease caused by bacteria infection of the genus *Leptospira sp.*. Leptospirosis is an endemic disease in tropical area. Various methods for diagnosing leptospirosis such as *Microscopic Agglutination Test* (MAT) and *Polymerase Chain Reaction* (PCR). Those methods have weakness and limited presence in several laboratories in Indonesia. The development of methods of *Loop-Mediated Isothermal Amplification* (LAMP) aims to make this method as an alternative method of diagnosa quickly, accurately, and economically necessary in controlling leptospirosis which so potentially threaten public health and to prevent the outbreak or extraordinary incident of leptospirosis. The procedure start from cattle's urine sample collection, cattle's urine treatment, and implementation of *Loop-Mediated Isothermal Amplification* (LAMP) method. Cattle's urine samples obtained from Wijimulyo district were 8 samples and from Moyudan district were 6 samples. The treatment of the cattle's urine by the centrifuge method, all samples showed positive results has DNA *Leptospira sp.* which is marked with a fluorescent green. The treatment of the cattle's urine with boiling method, all samples showed positive results has DNA *Leptospira sp.* which is marked with a turbidity. The results show the ability of *Loop-Mediated Isothermal Amplification* (LAMP) as an early alternative diagnostic method of leptospirosis which is quickly, accurately and economically.

Keywords: *Leptospira*, Leptospirosis, *Loop-Mediated Isothermal Amplification* (LAMP), Cattle Urine

