DETECTION OF THE PRESENCE OF \textit{bla}^{\text{TEM}} GENE AS Extended Spectrum Beta-lactamase GENES ENCODER OF \textit{Klebsiella pneumoniae} ISOLATED FROM SWAB OF FOOD-PRODUCING ANIMALS

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ABSTRACT

\textit{Klebsiella pneumoniae} is one of nine bacteria in resistance to antibiotics in concern. This research aims to detect any gene of \textit{bla}^{\text{TEM}} in bacteria of the \textit{Klebsiella pneumoniae} isolated from swab of food-producing animals. In this study, 195 swab samples taken from 17 locations of sampling. A cultivated sample obtained on selective medium and has done through the test identification, antibiotic sensitivity test method using Kirby-Bauer of agar diffusion against antibiotics of Ampicillin, Cefotaxime, Amoxicillin, Meropenem and Trimetrophrim-Sulfamethoxazole and afterwards tested with PCR method for detecting the gene it is causing antibiotic resistance. The results showed that 195 samples were found positive of \textit{Klebsiella pneumoniae} isolates by as much as 10 sample i.e., 4 samples of dairy cows (SP-S1, SP-S3, SP-B2, SP-G4), two samples of beef cattle (SPT-K1, SPT-K2), 1 chicken samples (A-W5) and 3 samples of fish (IN-P2, IN-P3, IN-S3). Ten positive isolates were found indicating the resistant to Amoxicillin as much as 90% (9/10) and PCR tests also showed 9 sample (90%) have a positive gene \textit{bla}^{\text{TEM}}. Nine samples of the whole of the positive samples were resistant to the antibiotic Amoxicillin, i.e., SP-S3, SP-B2, SP-G4, SPT-K1, SPT-K2, A-W5, IN-P2, IN-P3, and the IN-S3. Based on the results of this research, with the discovery of antimicrobial agent resistance i.e. ESBL genes of encoder (\textit{bla}^{\text{TEM}}), researchers believe that the vast majority of isolates \textit{Klebsiella pneumoniae} producing food animals have had ESBL encoding gene.

\textbf{Key words:} \textit{Klebsiella pneumoniae}, ESBL, food-producing animals, antibiotic resistance, PCR method.