

ABSTRAK

Perkembangan mikroorganismesapi lokal antar daerah berbeda-beda karena pakan yang di konsumsi setiap daerah tergantung sumber tanaman dan pakan yang ada di daerah tersebut. Salah satu bakteri dalam rumen adalah bakteri selulolitik yang berperan penting dalam perombakan serat kasar. Penelitian ini bertujuan untuk mengidentifikasi spesies bakteri selulolitik sapi lokal dari jenis sapi bali kupang, sapi bali, sapi madura, dan sapi sumba ongol yang di ambil dari masing-masing daerah asal. Tahap penelitian meliputi isolasi bakteri selulolitik, skrining bakteri selulolitik, isolasi DNA, amplifikasi 16S rRNA, Sequensing dan identifikasi bakteri selulolitik, kontruksi pohon filogenetik. Hasil isolasi bakteri selulolitik dari cairan rumen sapi bali kupang, sapi bali, sapi madura, dan sapi sumba ongol mendapatkan isolat B-2C, BKA, SO-3E, dan M-2B sedangkan hasil identifikasi spesies keempat isolat menunjukan isolat B-2C teridentifikasi sebagai *Cellulosimicrobium sp* strain DMU II dengan similaritas 99,88%. Isolat BKA *Unconclution* karena terdapat double peak yang mengakibatkan pembacaan sanger sequencing menjadi noise. Isolat SO-3 teridentifikasi sebagai *Bacillus clausii strain* NIOT-DSB04 dengan similaritas 99,80%. Isolat M-2B teridentifikasi sebagai *Bacillus sp* strain T22 dengan similaritas 99,93%. Hasil penelitian diharapkan isolat bakteri selulolitik yang di kemudian hari dapat dimanfaatkan membantu mencerna serat kasar dalam rumen secara lebih efisien dalam bentuk *direct feed microbial*.

Kata kunci : Bakteri selulolitik, isolasi bakteri selulolitik, 16S rRNA

ABSTRACT

The development of local cattle microorganisms varies between regions because the feed consumed by each region depends on the plant and feed sources in the area. One of the bacteria in the rumen is cellulolytic bacteria which plays an important role in the overhaul of crude fiber. This study aims to identify cellulolytic bacteria species of local cattle from Bali cattle, Bali Kupang cattle, Sumba Ongol cattle and Madura cattle taken from each area of origin. The research stages include isolation of cellulolytic bacteria, screening of cellulolytic bacteria, isolation of DNA, 16S rRNA amplification, sequencing and identification of cellulolytic bacteria, construction of phylogenetic trees. The results of the isolation of cellulolytic bacteria from the rumen fluid of Bali cattle, Bali Kupang cattle, Sumba Ongol cattle and Madura cattle obtained B-2C, BKA, SO-3, and M-2B isolates, while the results of the identification of the four isolates showed that B-2C isolates were identified as *Cellulosimicrobium* sp strain DMU II with 99.88% similarity. Isolate BKA Unconclusion because there is a double peak which causes the Sanger Sequencing reading to become noise. The SO-3 isolate was identified as *Bacillus clausii* strain NIOT-DSB04 with 99.80% similarity. The isolate M-2B was identified as *Bacillus* sp strain T22 with 99.93% similarity. The results of the research are expected to isolate cellulolytic bacteria which in the future can be used to help digest crude fiber in the rumen more efficiently in the form of direct feed microbial.

Key words : Cellulolytic bacteria, isolation of cellulolytic bacteria, 16S rR