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Optimization of Temperature and Cellulase pH from Rumen Bacteria Isolation of Beef Cattle

Optimization of Temperature and Cellulase pH from Rumen Bacteria Isolation of Beef Cattle

1. Mirni Lamid --> Dosen Fakultas Kedokteran Hewan / mirnilamid@yahoo.com
2. Ni Nyoman Tri Puspaningsih --> Dosen Fakultas Sains dan Teknologi
3. Widya Paramita --> Dosen Fakultas Kedokteran Hewan

Abstract

Biotechnology in animal feed using biological treatment such as cellulase is mainly aimed to increase degrade the cellulose; the second most abundant polysaccharide in nature. Information of using cellulase as biocatalyst for increasing animal feed quality as ruminants feed is limited. Cellulose is the major component of cell wall agroindustry waste after hemicellulose. This cellulase comes from Actinobacillus sp. that were isolated from rumen fluid of beef cattle. The aim of this research was to determine activity of cellulase and characterization of optimum temperature and pH. In this research identification with carboxyl methylcellulose (CMC) has been done. Methods for cellulase activity was 3,5-dinitrosalicylic acid (DNS). The results showed that Actinobacillus which have positive activity of cellulase. Characterization of Actinobacillus sp. had optimum temperature 45°C with activity 1.42 U/ml and optimum pH 6 with activity 0.57 U/ml.

Keyword : cellulase, carboxyl, methyl, cellulose, temperature, beef, cattle,

Daftar Pustaka :