

P-3. Development of Optimal Continuous Culture Method for Rumen Fluid Using Ferrite Particles

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In continuous culture of rumen fluid, the outflow of microorganisms from the reactor makes reduce the efficiency of cellulose degradation. Therefore, it was investigated to use ferrite particles (FP) to capture suspended particles and microorganisms and prevent them from flowing out of the reactor. The movement of FP is controlled by magnetically because it made of ferromagnetic iron oxide particle. The effects of addition of FB on rumen microorganisms were investigated by adding 0 to 10 vol% FP to the rumen solution. As a result, concentration of dissolved chemical oxygen demand (D-COD) and volatile fatty acid (VFA) increased in all conditions. In particular, D-COD and VFA concentrations increased rapidly with the addition of FP, which was more effective at higher concentrations of FP. These results suggest that addition of FP promoted the solubilization of paper by rumen microorganisms and took a step forward in the development of a continuous culture method.