EFFECT OF BANANA PEEL (*Musa paradisiaca*)
FERMENTATION USING *Rhizopus oligosporus* WITH
DIFFERENT INCUBATION TIME ON AMMONIA
CONCENTRATION, MICROBIAL PROTEIN
SYNTHESIS AND VOLATILE FATTY ACID IN VITRO

Mohammad Rifki Afghani¹, Siti Chuzaemi² and Marjuki²
¹Student of Animal Husbandry Faculty, Brawijaya University Malang
²Lecturer of Animal Husbandry Faculty, Brawijaya University Malang
Email : rifki.bocor@gmail.com

ABSTRACT

The purpose of research was to evaluate and determine effect of banana peel fermentation with *Rhizopus oligosporus* with different incubation fermentation time on ammonia gas concentration, volatile fatty acid (VFA) and microbial protein synthesis value tested by using *in vitro* technique. The materials used were banana peels and *Rhizopus oligosporus*. The method was experiment using Randomized Block Design with 4 treatments (3 days, 7 days, and 10 days fermentation) and 3 replications based on the time of collecting rumen fluid, If there was significant influence then it was further tested by Duncan Multiple Range Test Method. The Results from this fermentation showed by banana peel fermentation using *Rhizopus oligosporus* of had significant effect (P< 0,01) on ammonia gas coecentration in 24 hour incubatoin and VFA value. There were no significant effect (P>0,05) of
treatments on microbial protein synthesis. The result was the experiment with different incubation time treatments of banana peels by using *Rhizopus oligosporus* could reduce ammonia and VFA concentration, while the value of microbial protein synthesis increased. The treatment from microbial protein synthesis value highest to lowest value of microbial protein synthesis were P3 to P0 which 33,18; 32,91; 32,46; 32,05 g N microorganism/ kg Organic Matter digestion in the rumen. Ammonia gas production highest to lowest were P0 to P3 which 6,86; 6,63; 6,53; 6,21 mM/ml rumen fluid, value of volatile fatty acid highest to lowest were P0-P3 which acetic acid 15,1-7,23 ml Mol/l, butyric acid 1,28-0,54 ml Mol/L, and propionic acid 9,74-3,72 ml Mol/L.

Keywords : banana peels, fermentation, *Rhizopus oligosporus*, microbial synthesis protein, *in-vitro*