

## RINGKASAN

**YOGI PRADANA.** “Penambahan Sulfur dalam Fermentasi Onggok sebagai Upaya untuk Meningkatkan Produk Fermentasi Rumen secara *In Vitro*” merupakan penelitian yang bertujuan mengkaji pengaruh penambahan sulfur dalam fermentasi onggok terhadap konsentrasi *Volatile Fatty Acid* (VFA) total, N-Amonia (N-NH<sub>3</sub>), dan Sintesis Protein Mikroba. Penelitian dilaksanakan mulai 16 Desember 2016 sampai 30 Januari 2017 di Laboratorium Ilmu Nutrisi dan Makanan Ternak Fakultas Peternakan Universitas Jenderal Soedirman, Purwokerto.

Materi yang digunakan dalam penelitian adalah cairan rumen kambing Jawarandu jantan sebanyak 3 ekor yang diambil di Rumah Pemotongan Hewan (RPH) Sokaraja segera setelah kambing dipotong. Perlakuan yang diberikan yaitu P0 = pakan yang mengandung onggok tidak difermentasi, P1 = pakan yang mengandung onggok fermentasi tanpa sulfur, P2 = pakan yang mengandung onggok fermentasi ditambah sulfur 0,2 %, dan P3 = pakan yang mengandung onggok fermentasi ditambah sulfur 0,4 %

Metode penelitian yang digunakan eksperimental *in vitro*. Rancangan penelitian yang digunakan yaitu Rancangan Acak Lengkap. Data yang diperoleh dianalisis menggunakan analisis ragam dilanjutkan dengan uji Beda Nyata Jujur (BNJ). Berdasarkan analisis variansi dan uji Beda Nyata Jujur perlakuan berpengaruh nyata ( $P < 0,05$ ) terhadap konsentrasi VFA total, N- N -NH<sub>3</sub>, dan sintesis protein mikroba. Semakin tinggi taraf sulfur yang ditambahkan pada fermentasi onggok konsentrasi VFA total dan sintesis protein mikroba semakin meningkat sedangkan N -NH<sub>3</sub> semakin menurun.

Kata kunci : Onggok, fermentasi, sulfur, VFA, ammonia, sintesis protein mikroba

## SUMMARY

**YOGI PRADANA.** “Supplementation of Sulphur in Cassava by-Product Fermentation Process to Increase Rumen Fermentation Products by *In Vitro* Method” is an experimental study conducted to investigate the effects of supplementation with sulphur in cassava by-product fermentation process on the concentrations of total Volatile Fatty Acid (VFA), N- ammonia (N- NH<sub>3</sub>), and Microbial Protein Synthesis, from December 16<sup>th</sup>, 2016 until January 30<sup>th</sup>, 2017 at the Laboratory of Nutrition and Feed Sciences, Faculty of Animal Science, Jenderal Soedirman University, Purwokerto.

The materials used in this experiment were rumen fluid of 3 male Jawarandu goats from Slaughter House of Sokaraja, taken immediately after the goat were being slaughtered. The treatments consisted of P<sub>0</sub>= Feed which contained cassava by-product without fermentation (control), P<sub>1</sub>= feed which contained cassava by-product fermentation, P<sub>2</sub>= feed which contained cassava by-product fermentation + sulphur 0.2 %, and P<sub>3</sub> = feed which contained cassava by-product fermentation + sulphur 0.4 %.

The experiment used *in vitro* method and was designed with Completely Randomized Design. The data was analyzed with an analysis of variance and followed by *Honesty Significant Difference* (HSD) test. According to the variance analysis and *Honesty Significant Difference* (HSD) test, treatments significantly affected VFA and N-NH<sub>3</sub> concentrations and Microbial Protein Synthesis ( $P < 0.05$ ). The higher level of sulphur added to cassava by-product fermentation process, the VFA concentration and Microbial Protein Synthesis increased, however, N-NH<sub>3</sub> concentration decreased.

Key word : Cassava by product, fermentation, sulphur, VFA, ammonia, microbial protein synthesis