

## **PENGARUH PENAMBAHAN BUNGKIL KEDELAI TERPROTEKSI BERBENTUK PELET TERHADAP KECERNAAN NUTRIEN SECARA *IN VITRO***

Kristiawan Febrianto  
17/413052/PT/07440

### **INTISARI**

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan bungkil kedelai terproteksi berbentuk pelet dalam ransum terhadap pencernaan nutrisi secara *in vitro* yang meliputi pencernaan bahan kering (KcBK), pencernaan bahan organik (KcBO), dan pencernaan protein kasar (KcPK). Penelitian dilakukan di Laboratorium Teknologi Makanan Ternak, Fakultas Peternakan, Universitas Gadjah Mada. Ransum yang digunakan terdiri dari hijauan, konsentrat, dan pelet dengan proporsi 55,07:36,72:8,21 dalam bahan kering. Hijauan yang digunakan adalah rumput raja, sedangkan konsentrat terdiri dari bungkil kedelai, bungkil kelapa, *pollard*, *corn gluten feed*, *corn gluten meal*, onggok, dan mineral. Bahan yang digunakan dalam pembuatan pelet adalah bungkil kedelai dan onggok. Cairan rumen yang digunakan berasal dari sapi Bali berfistula. Penelitian terbagi menjadi dua kelompok, yaitu kelompok kontrol (ransum dengan bungkil kedelai berbentuk pelet) dan kelompok perlakuan (ransum dengan bungkil kedelai terproteksi berbentuk pelet). Proteksi bungkil kedelai pada pelet menggunakan *formaldehyde* sebanyak 0,8%. Metode penelitian yang digunakan untuk mengukur pencernaan nutrisi secara *in vitro* adalah metode *Tilley* dan *Terry* dua tahap. Pengamatan dilakukan pada KcBK, KcBO, dan KcPK yang diinkubasi selama 48 (rumen) dan 96 jam (rumen dan pascarumen). Data yang diperoleh dianalisis menggunakan uji *Independent Sample T-test*. Hasil analisis menunjukkan bahwa penambahan bungkil kedelai terproteksi berbentuk pelet dalam ransum tidak berpengaruh nyata ( $P > 0,05$ ) terhadap KcBK inkubasi 48 jam ( $58,15\% \pm 0,75$  vs.  $57,47\% \pm 0,46$ ), KcBK inkubasi 96 jam ( $64,63\% \pm 0,54$  vs.  $63,78\% \pm 1,18$ ), KcBO inkubasi 48 jam ( $60,35\% \pm 0,68$  vs.  $60,29\% \pm 0,70$ ), dan KcBO inkubasi 96 jam ( $64,07\% \pm 0,65$  vs.  $63,49\% \pm 1,20$ ). Namun, berpengaruh secara nyata ( $P < 0,05$ ) terhadap KcPK inkubasi 48 jam ( $12,44\% \pm 0,08$  vs.  $8,55\% \pm 0,27$ ) dan KcPK inkubasi 96 jam ( $29,22\% \pm 0,49$  vs.  $34,50\% \pm 0,362$ ). Berdasarkan penelitian yang telah dilakukan, maka dapat disimpulkan bahwa KcBK dan KcBO inkubasi 48 jam serta 96 jam ransum perlakuan sama dengan ransum kontrol. KcPK inkubasi 48 jam ransum perlakuan lebih rendah dibanding ransum kontrol. KcPK inkubasi 96 jam ransum perlakuan lebih tinggi dibanding ransum kontrol.

Kata kunci: Bungkil kedelai terproteksi, *In vitro*, Pencernaan nutrisi, Pelet

## **THE EFFECT OF PROTECTED SOYBEAN MEAL PELLET ADDITION ON IN VITRO NUTRIENT DIGESTIBILITY**

Kristiawan Febrianto  
17/413052/PT/07440

### **ABSTRACT**

This study was designed to determine the effect of protected soybean meal pellets in the ration on in vitro nutrient digestibility, specifically dry matter digestibility (DMD), organic matter digestibility (OMD), and crude protein digestibility (CPD). This research was conducted at the Animal Feed Technology Laboratory, Faculty of Animal Science and Industry, Universitas Gadjah Mada. The ration used in the in vitro study consisted of forage, concentrates, and pellet in the proportion of 55,07:36,72:8,21 in dry matter. The forage used is king grass, while the concentrate consists of soybean meal, coconut meal, pollard, corn gluten feed, corn gluten meal, cassava, and minerals. The pellets consists of soybean meal and tapioca waste. This study used rumen fluid from Bali cattle with fistulas. This study was divided into two groups: the control group (ration with soybean meal in the form of pellets) and the treatment group (ration with protected soybean meal in the form of pellets). Soybean meal protection in pellets using formaldehyde as much as 0.8%. The research method used to measure nutrient digestibility in vitro was the Tilley and Terry method in two stages. Observations were made on DMD, OMD, and CPD which were incubated for 48 hours (rumen) and 96 hours (rumen and post rumen). The data obtained were analyzed using the Independent Sample T-test. The results of the analysis showed that the protection of soybean meal in the form of pellets in the ration had no significant effect ( $P > 0.05$ ) on DMD 48 and 96 hours incubation and OMD 48 and 96 hours incubation. However, it had a significant effect ( $P < 0.05$ ) on CPD 48 hours incubation ( $12,44\% \pm 0,08$  vs.  $8,55\% \pm 0,27$ ) and CPD 96 hours incubation ( $29,22\% \pm 0,49$  vs.  $34,50\% \pm 0,362$ ). Based on the research that has been done, it can be concluded that the DMD and OMD 48 hours and 96 hours incubation were the same treatment groups as the control group. CPD 48 hours incubation in the treatment group were lower when compared to the control group. CPD 96 hours incubation in the treatment group were higher when compared to the control group.

**Keywords** : Protected soybean meal, In vitro, Nutrient digestibility, Pellet