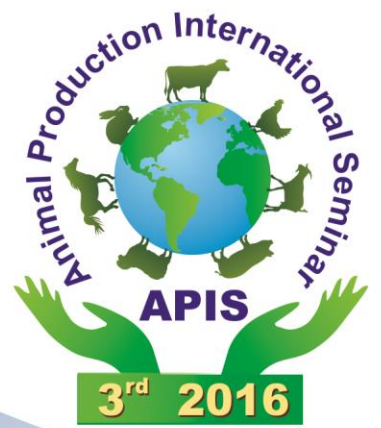




PROCEEDING



The 3rd Animal Production International Seminar
The 3rd ASEAN Regional Conference on Animal Production
3rd APIS & 3rd ARCAP – 2016

Enhancing Synergistic Roles of Stakeholders
for Development of Sustainable Livestock Production

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RECTOR SPEECH

Assalamualaikum warohmatullahi wabarakatuh
Distinguished Guests and Delegates, Ladies and Gentlemen,

It gives me great privilege and pleasure to extend to you all a very warm welcome on behalf of Brawijaya University and to say how grateful we are to the organizing committee of The Third Animal Production International Seminar (3rd APIS) and The Third ASEAN Regional Conference on Animal Production (3rd ARCAP) who made this important event happening from today onward. Your attendance in this conference will not be enough before exploring the serendipity of Batu city which has attracted so many visitors in the recent years. It offers you many attractive places to visit varying from leisure facilities to smallholder dairy farms that relevant to the topic of this conference.

The issues of livestock production and food security have been a hot topic of debates all over the world to challenge our capability to feed human population living on earth that is believed will reach 25 billion people by the middle of this millineum. The global call on quality human resources especially in developing countries may not be achieved without adequate supply of animal protein. This has urged animal scientists to make significant effort to increase animal production by inventing new technologies and approaches but have no negative impact on our natural resources because the majority of smallholder farmers face with scarcity of cultivable land to produce adequate quantity and quality fodder for their animals. The practice of uncontrolled fodder scavenging from forest and open land may provoke a serious natural disaster such as landslide, flood and loss of water resources for human beings. Through this stage I would like to extend my concern to all distinguished guests and delegates to pay more attention on sustainable development of animal production that assures our young generation lives on earth safely and happily.

As the rector of Brawijaya University, I am also delighted to welcome you in our green campus sometime in the middle of the conference to hasten mutual collaboration between Brawijaya University and either national or international partners . We are fully aware that in a modern life higher education quality should be built on the basis of collaboration for many reasons. Brawijaya University has 14 faculties that can be grouped into four science trees, that is engineering, humanity, economics, and life sciences. They have been growing significantly not only in the number of student enrollements but many prestigious achievement on research findings, student competitions and administrative transparency are our flagships in the last ten years. Nevertheless, we also realize that first and foremost constraint for any institution is the limit of resources and thereby underpinning the importance of establishing mutual collaboration. It is our opportunities to meet delegates from varying places of origin that open initial discussion for further networking on relevant topics of interests concordance to the main topic of this conference and beyond.

To conclude my address, once again I would like to express my sincere gratefuls to all delegates, partners and conference committee who have made this important international conference occurs. I do hope that your stay and participation in these seminar and conference will be fruitful and unforgettable.



By the name of Almighty Allah Swt. I declare that The Third Animal Production International Seminar (3rd APIS) and The Third ASEAN Regional Conference on Animal Production (3rd ARCAP) are officially open.

Thank you very much

Wassalamualaikum warohmatullahi wabarokatuh.

Batu, 19 October 2016

Brawijaya University

Rector

Prof.Dr.H. Mohammad Bisri, MS.

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Themes:

Enhancing Synergistic Roles Of Stakeholders for development Of Sustainable Livestock Production

Chairman:

Dr.Ir. Manjuki, M.Sc (Brawijaya University, Indonesia)

Date:

19-21 October 2016

Venue:

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Oral Presentation 5 Focus Session: Feed and Nutrition (2)

Friday, 21 October 12:30-14:40 Room: Panderman 2

Time	Title	Presenter	Code
2.30-2.40	Legumes wafer for improvement the post-weaning etawah crossbreed goats performance ¹ ¹ Brilian Desca Dianingtyas, Yuli Retnani, and Dwierra Evvyernie	Brilian Desca ✓ Dianingtyas	FN – 352 ✓
2.40-2.50	Utilization of cricket meal in creep feed diet of growing etawah cross breed goats ¹ ¹ Dewi Apri Astuti, Widya, L. Khotidjah, A. Angraeny, K. Komalasari, and Dewi Apri Astuti	Dewi Apri Astuti	FN – 332
2.50-13.00	Performance of first cutting of Pennisetum purpureun cv. Mott under different level of light and nitrogen fertilizer ¹ ¹ David A. Kaligis, Selvie D. Anis, Johanis R. Tulung, and Sahrun Dalie	David A. Kaligis	FN – 360
13.00-13.10	Amino acid characterization of tofu waste fermentation using effective microorganism-4 and Lactobacillus plantarum culture ¹ ¹ Eka Fitasari and Budi Santosa	Eka Fitasari (MODERATOR 2)	FN – 325
13.10-13.20	In vitro digestibility profiles of cricket meal as protein source in the ration ¹ ¹ Dewi Apri Astuti, M. Miftakhul Solikhin, and Yuni Cahya Endrawati	Dewi Apri Astuti	FN – 331
13.20-13.30	Production of roughage feed under different drying methods and evaluation of the feeding value ¹ ¹ Jayaweera B. P. A.	Jayaweera B. P. A.	FN – 333
13.30-13.40	In vitro nutrient digestibility of Chromolaena odorata-based silage treated with Corypha gebanga meal and rumen content ¹ ¹ Yelly M. Mulik, Muhammad Ridla, Iwan Prihantoro, and Marthen L. Mullik	Yelly M. Mulik	FN – 335
13.40-13.50	Production, characterization and purification of xylanase from Staphylococcus aureus MBXi-K4 ¹ ¹ Indah Wijayanti, Maggy T Suhartono, Khaswar Syamsu, and Yulin Lestari	Indah Wijayanti (MODERATOR 1)	FN – 336
13.50-14.00	To estimate intestinal truly absorbed protein of alfalfa hay and alfalfa silage using new dutch system (DVE/OEB) ¹ ¹ P. Kheyrandish, M. Danesh Mesgaran and A. Vakili	Parisa Kheyrandish	FN – 340
14.00-14.10	Chitosan protection to saga leaves extract (Abrus precatorius Linn) and Lingzhi mushroom (Ganoderma lucidum) from rumen microbial degradation ¹ ¹ Evvyernie D., Sukria H. A., Harlina E., Suningsih N., and Zetira H.	Dwierra ✓ Evvyernie	FN – 342 ✓
14.10-	Effects of different types of cakes in rations on the	Amani Osman	FN – 348

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Legumes Wafer for Improvement The Post-Weaning Etawah Crossbreed Goats Performance

Dianingtyas, B. D¹, Retnani, Y.², Evvyernie, D.²

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Abstract

This research aimed to evaluate the effect of feeding legumes wafer to improve the performance of post weaning Etawah Crossbreed goats. The research was designed using completely randomized block with 4 treatments and 4 blocks of 16 heads post weaning Etawah Crossbreed goats with average body weight 13.10 ± 0.91 kg. The treatments were T0 (basal diet = control), T1 (T0 + 13.79% *Indigofera zollingeriana* wafer), T2 (T0 + 15.66% *Leucaena leucocephala* wafer) and T3 (T0 + 14.12% *Calliandra calothyrsus* wafer). The post weaning Etawah Crossbreed goats performances observed dry matter and organic matter intake, average daily gain (ADG), feed efficiency (FE), income over feed cost (IOFC). The results showed that the performance of the goats especially ADG, FE, and IOFC significantly increased ($P < 0.05$) by supplementation of legumes wafer. The best performance of the goat was achieved by supplementation of *Leucaena leucocephala* wafer (18.36% dry matter intake, 29.20% organic matter intake, 66.18% ADG, 41.63% FE, 19.09% IOFC). As conclusion, all of legumes wafer have a potency to improve the post-weaning Etawah Crossbreed goats performance, and the *Leucaena leucocephala* wafer is the best wafer.

Keywords: post-weaning Etawah Crossbreed goats, performance, wafer supplement of legumes.

Introduction

Milk consumption is still low in Indonesia society which is around 11.09 litres per capita per year compared to some countries in ASEAN (Association of South East Asian Nations) are around 20 litres per capita per year (Kemenperin, 2014). The biggest contributor of national milk consumption is derived from dairy cattle. Whereas in addition to the supplied from dairy cattle, small ruminants such as dairy goats can also contribute to the fulfillment of the needs of the milk consumption of Indonesia society. One of the dairy goats as potentially for produces milk is Etawah Crossbreed goat.

The growing phase of post weaning goat is the initial phase to determine the success rate of productivity of a goat, either as a candidate for dairy goat or breeding (Mathius *et al.*, 2002). Mellado *et al.* (2011) showed that this growth period is very influential on the productivity of the dairy goats that is the level of production of milk produced at the same time profile breeders. So it takes an effort to increase the growing phase of post weaning goat, one of them, namely through the quality improvement of the feed. The use of an additional source of protein as legume for livestock can be used as one of the efforts to improve the

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quality of feed. Legume which can be utilized as an alternative forage feed include *Indigofera zollingeriana*, *Leucaena leucocephala* and *Calliandra calothyrsus*.

Forage as feed ruminants have a weakness that its availability depending on the season, easily a foul, and voluminous. So the necessary processing technology forage that can be applied throughout the year with the manufacture of wafers. Wafer feed is one of the results of feed preservation technology to make it more durable during storage, easy to stored, easy to distributed, and easy to given to the animal. The research objective was to evaluate the effect of feeding legumes wafer to improve the performance of post weaning Etawah Crossbreed goats.

Methodology

Sixteen (16) post-weaning Etawah Crossbreed goats aged about 4 months with average body weight around 13.10±0.91 kg were maintained in individual cages shaped stage equipped. The experimental design used in this study was completely randomized block design with 4 treatments and 4 blocks as replications. The treatments were: T0 (basal diet = control), T1 (T0 + 13.79% *Indigofera zollingeriana* wafer), T2 (T0 + 15.66% *Leucaena leucocephala* wafer) and T3 (T0 + 14.12% *Calliandra calothyrsus* wafer). Parameters measured were dry matter and organic matter intake, average daily gain (ADG), feed efficiency and income over feed cost (IOFC). The data were analyzed using an ANOVA and the differences among treatments were examined with Duncan test.

Result and Discussion

Performance of post-weaning Etawah Crossbreed goats were presented in Table 1. It is shown that Dry matter intake of post-weaning Etawah Crossbreed goats in this research was almost similar among the treatments, with average 661.40 – 792.77 g/head/d. According to Suparjo *et al.* (2011) the range of dry matter intake is around 434 – 560 g/head/day and 556 – 603 g/head/d (Lee *et al.*, 2014). The dry matter intake affect the supply of nutrients for maintenance and growth of animal. The nutrient intake depends on the amount of dry matter intake and nutrient content are given to the animal. The dry matter intake was influenced by the difference of nutrient energy and protein (Negesse *et al.*, 2001), physiological condition of livestock, sex, and feed.

Table 1. Dry matter and organic matter intake, average daily gain, and feed efficiency of control and treatments diets.

Parameters	Treatments				Sign.
	T0	T1	T2	T3	
Intake (g/head/d)					
Dry matter	661.40±57.95	770.72±36.62	782.87±57.19	792.77±87.64	Ns
Organic matter	92.64±8.15 ^a	119.94±5.05 ^b	119.69±8.08 ^b	122.87±12.49 ^b	**
Average daily gain (g/d)	46.99±16.62 ^a	72.87±5.73 ^b	78.09±16.96 ^b	62.32±17.52 ^{ab}	**
Feed efficiency	6.99±1.82 ^a	9.43±0.76 ^{ab}	9.90±1.44 ^b	7.78±1.65 ^{ab}	**
IOFC (Rp/head/d)	18288±2695 ^a	20945±1173 ^{ab}	21779±2367 ^b	20910±2639 ^{ab}	**

Ns: Non significant, ** = significant (α 0.95)

The addition of legumes wafer either *Indigofera zollingeriana* wafer, *Leucaena leucocephala* wafer, and *Calliandra calothyrsus* wafer on post-weaning Etawah Crossbreed goats showed increasing average daily gain 32.62% to 66.18% higher than control. This is due to feed intake in post-weaning Etawah Crossbreed goats given wafer supplement of legumes are higher than without any given wafer supplement of legumes. Body weight gain was influenced by several factors, i.e. the total consumption of protein, sex, age, genetic, environmental, physiological condition of livestock and management (NRC, 1985).

The post-weaning Etawah Crossbreed goats are given legumes wafer have feed efficiency, higher than control. The higher value of feed efficiency indicated that more efficient feed is used to increase the daily body weight gain. *Leucaena leucocephala* wafer is the best in feed efficiency because the post-weaning Etawah Crossbreed goats given *Leucaena leucocephala* wafer have the highest ADG with the lowest organic matter intake. Feed efficiency was influenced by feed intake and average daily gain.

Income over feed cost (IOFC) is an advantage gained by breeders by analyzing income after deducting the cost of feed used during this research. The post-weaning Etawah Crossbreed are given legumes have IOFC were higher than control. *Leucaena leucocephala* wafer is the best in IOFC because the post-weaning Etawah Crossbreed goats given *Leucaena leucocephala* wafer have the highest ADG and feed efficiency.

Conclusion

The conclusion of this research is all of legumes wafer have a potency to improve the post-weaning Etawah Crossbreed goats performance, and the *Leucaena leucocephala* wafer is the best wafer.

Acknowledgements

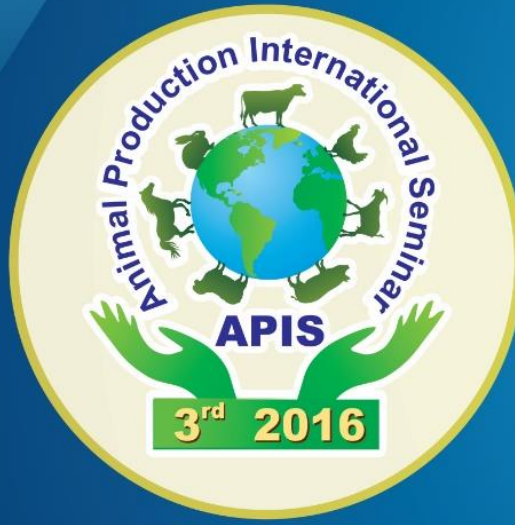
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