The 3rd ISTAP, Faculty of Animal Science, Gadjah Mada University, 2002 *ISBN : 979 – 97243 – 2 - 5*

IMPROVED PERFORMANCE OF LAMBS GIVEN BIOPLUS AND RUMENOX

M. Winugroho, Sesi Annisa, Sri Marijati[1]

Abstract

This study was to evaluate how far local probiotics Bioplus and Rumenox (a mixture of *Saccharomyces cerevisiae* yeast and dried colostrum) could improve feed digestibility and average daily gain (ADG) of young animals. Twenty four of 6 mo old lambs weighing about 9.5 kgs were divide randomly into 2 groups of 12 (based on sex and average LW). They were kept in individual pens and consumed 485 g DM intake consisting of fresh chopped king grass, commercial concentrate and soya bean waste (57 : 36 :7 DM). Water was available at all time. The grass was offered after both concentrate and soya bean wastes were consumed. Each lamb in either group was given 50 g Bioplus at the beginning of the trial and 4 g Rumenox daily for 8 weeks. To estimate the ADG, the animals were weighted before and after the trail. Feed efficiency was also estimated. The digestibility value was estimated at the last week of the study. Means were tested statistically by using t-test. Dry matter digestibility increased significantly from 52 to 60 ($P< 0.05$) while the ADG improved from 45 to 77 g/day ($P< 0.05$). Consequently, feed efficiency increased from 0.09 to 0.16 ($P< 0.05$). It was concluded that additional Bioplus and Rumenox in the diet were recommended in the diet of the animals.

Key words: Lambs, Probiotics-colostrum powder, ADG

Introduction

This study was to evaluate how far local probiotics Bioplus and Rumenox (a mixture of *Saccharomyces cerevisiae* yeast and dried colostrum) could improve feed digestibility and average daily gain (ADG) of young animals. Bioplus is a mixture of rumen microbes which are able to digest fiber better (Winugroho et al, 1993). It improved average daily gain of beef cattle which fed with high fiber in the diet (Winugroho et al, 1997). Additional of *S. cerevisiae* yeast was recommended when concentrate was high in the diet (Winugroho et al, 1997; Ratnaningsih, 2000). In both studies improved ADG and feed efficiency were observed. In this study, colostrum powder was added to supply any amino acids essential both for rumen microbes and animals.

[1] Research Institute for Animal Production, Bogor

Materials and Methods

Animals

Twenty four of 6 mo old lambs weighing about 9.5 kgs were divided randomly in groups of 12 (based on sex and average LW)

Feed and management

The lambs were kept in individual pens and consumed 485 g DM intake consisting of fresh chopped king grass, commercial concentrate and soya been waste (57:36:7 DM). Water was available at all time. The grass was offered after both concentrate and soya bean wastes were consumed.

Treatment

Each lamb in either group was given 50 g Bioplus at the beginning of the trial and 4 g Rumenox daily for 8 weeks.

Measurements

To estimate the ADG, the animals were weighted before and after the trial. Feed efficiency was also estimated and it was defined as ADG obtained from 1 kg DMI. The digestibility value was calculated in the last week of the study. Means were tested statistically by using t-test.

Result and Discussion

Chemical composition of king grass, soya bean waste and commercial concentrate was presented in Table 1.

Table 1. Chemical analysis of feed ingredients (%)

INGREDIENTS	DM	CP	FAT	CF
King grass	18.2	10.8	1.9	33.9
Soya bean waste	20.4	16.1	9.8	15.3
Commercial concentrate	87.0	16.0	4.0	7.0

Source: Research Institute for animal Production, Ciawi

With such chemical composition, the diet contained approximately 13.2% CP, 4.8 % fat and 25.3% fibre contents. Feed digestibility, ADG and feed efficiency and were presented in table 2.

Tabel 2. Feed intake, digestibility, ADG and feed efficiency of lambs given probiotics & colostrum powder (Rumenox)

MEASUREMENT	CONTROL	RUMENOX
DM intake (g/d)	484	485
DM digestibility (%)	52.4 a	60.1 b
ADG (g/d)	45 a	77 b
Feed efficiency (g ADG/DMI)	0.09 a	0.16 b

Different superscripts within a row $P < 0.05$

According to Kearl (1982) to meet a 50 g ADG, sheep requires DMI about 4% of their liveweight. Higher feed digestibility and ADG values are consistent to the earlier findings (Winugroho *et al,* 1993: 1997). While better feed efficiency is also consistent to results reported by (Ratnaningsih, 2000).

The main reason why colostrum powder was added in treated diet was the possible excellent amino acid profiles. Lack of essential amino acids for both rumen microbes and animals are often reported. It was concluded that additional Bioplus and Rumenox in the diet were recommended in the diet of the animals.

Acknowledgement

The authors thank the ruminant technicians and casuals involved in the study.

References

Kearls, L.C. 1992. Nutrient requirement of ruminant in developing countries. International Feedstuffs Institute., Utah Agriculture Experiment Station, Utah State University, Logan :p. 45-58.

Ratnaningsih, A. 2000. Pengaruh pemberian probiotik *Saccharomyces cerevisiae* Dan Bioplus pada ransum ternak domba. Skripsi S1, Fakultas Peternakan Universitas Padjadjaran, Bandung.

Winugroho, M., M. Sabrani., P. Punarbowo, Yeni Widiawati and A. Thalib. 1993. Non genetic approach for selecting rumen fluid containing specific microorganisms (Balitnak Method). Ilmu dan Peternakan 6:5-9.

Winugroho, M., M. Sabrani dan E. Suharya. 1997. Pedoman teknis penyiapan induk penghasil bakalan lokal (BALOK). Direktorat Jenderal Bina Peternakan, Jakarta, hal 1 –10.