

Milk Production of Sahiwal x Holstein Crossbreed in Two Different System on Local Farm Kudat, Sabah-Malaysia

Dayang Siti Hanizar, Idat Galih Permana & Despal

Department of Animal Nutrition and Feed Technology, Faculty of Animal Science, Bogor Agricultural University

Jl. Agatis Kampus IPB Darmaga – Bogor. Telp. +62.251.8626213

Email: permana@ipb.ac.id

INTRODUCTION

- Dairy industry in Sabah-Malaysia is growing forward to increase milk production. Now, Sabah is a major producer of fresh milk for public school milk program.
- Main breed of dairy cattle in Sabah is SxF crossbreed, which crossing from local Sahiwal with Australian and New Zealand Friesian Holstein.
- Dairy cattle farming management on local farm Kudat are intensive and semi-intensive system. Oil palm and rubber plantations have the potential to supply forage. The forage growing under the palm trees can be used as animal feed by cutting or used as a grazing area.
- Differences in production systems has an impact on the adequacy of nutrients supply to the dairy cows.



OBJECTIVES

The objective of the study was to study the nutrient intake and performance of dairy cattle on two different production systems on local farm Kudat, Sabah-Malaysia.

METHODOLOGY

Location: intensive and semi intensive farms in Kudat, Sabah-Malaysia

Animals: 90 heads of Crossbreed SxF dairy cattle.

Feeding Management:

- **Intensive dairy production system:** the animals were kept in colony stable and fed with napier grass, palm kernel meal (PKC) and mineral block.
- **Semi-intensive system:** the animals were kept on grazing area under oil palm plantation for 6-9 hours, in the evening kept in stable and fed additional napier grass and PKC.
- The dairy cows were milked using milking machine twice a day.

Data Collection: by interview and observation directly at dairy farms.

Variables Measured: body weight (BW), body scoring condition (BCS), feed intake, milk production and income over feed cost (IOFC).

Data Analysis: using T-test analysis.

RESULTS

Feed Consumption:

- The intake of forage, PKC, total DMI, CP, CF and TDN of dairy cattle on intensive system were significantly higher than on semi-intensive system (Table 1).
- The percentage of DMI of BW on intensive system was sufficient (3.05% of BW), while on semi-intensive system was very low (2.03% of BW).

Table 1. Dry Matter and Nutrient Consumption of Dairy Cows on Intensive and on Semi-Intensive Farms in Sabah-Malaysia

Variables	Intensive System	Semi-intensive System	P-value
Forage intake (kg DM ⁻¹ head ⁻¹ day ⁻¹)	7.31±0.95	2.81±1.04	< 0.01
PKC intake (kg DM ⁻¹ head ⁻¹ day ⁻¹)	9.24±1.49	7.93±1.41	< 0.01
Total DM intake (kg DM ⁻¹ head ⁻¹ day ⁻¹)	15.87	10.16	-
CP intake (g ⁻¹ head ⁻¹ day ⁻¹)	2.21	1.15	-
CF intake (g ⁻¹ head ⁻¹ day ⁻¹)	3.12	1.33	-
TDN intake (kg ⁻¹ head ⁻¹ day ⁻¹)	10.35	6.14	-
Feed intake / body weight (%)	3.05	2.03	-

Dairy Cow Performances:

- The BW, BCS and milk production of dairy cattle on intensive system were relatively higher than in semi-intensive farming system.
- Total Feed Cost in semi-intensive farming system was slight higher than in intensive, furthermore IOFC on intensive system was higher than on semi intensive farming system.

Table 2. Dairy Cow Performances and IOFC on Intensive and on Semi-Intensive Farms in Sabah-Malaysia

Variables	Intensive System	Semi-intensive System	P-value
Body weight (kg)	520±100	499±32	-
Body condition score (BCS)	3.1±0.28	2.9±0.21	-
Milk production (liter head ⁻¹ day ⁻¹)	19.7±1.1	18.1±0.5	< 0.01
Total Feed Cost (MYR head ⁻¹ day ⁻¹)	37.20	38.70	-
Income Over Feed Cost (MYR head ⁻¹ day ⁻¹)	12.10	8.02	-

CONCLUSIONS

Dry matter intake and milk production on dairy intensive farming in Sabah-Malaysia were higher than on semi-intensive system. Base on income over feed cost, the intensive dairy farming was more profitable.