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G. G. C. Premalal  
*Veterinary Research Institute, Sri Lanka*

Sujatha Premaratne  
*University of Peradeniya, Sri Lanka*

Anil Jayawardena  
*Department of Animal Production & Health, Sri Lanka*

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## Use of intensive fodder banks with hybrid napier Co-3 Grass for smallholder dairy production systems in the dry zone of Sri Lanka

G.G.C. Premalal<sup>1</sup>, Sujatha Premaratne<sup>2†</sup> and Anil Jayawardena<sup>3</sup>

<sup>1</sup>Pasture Division, Veterinary Research Institute, Peradeniya, Sri Lanka, <sup>2</sup>Department of Animal Science, Faculty of Agriculture, University of Peradeniya, Sri Lanka, <sup>3</sup>Livestock Breeding Division, Department of Animal Production & Health, Peradeniya, Sri Lanka. †E-mail: suep@pdn.ac.lk

**Key words :** fodder-banks, hybrid-napier, dry-zone

**Introduction** The 500m<sup>2</sup> intensive fodder bank system with hybrid Napier CO-3 (*Pennisetum purpureum* x *P. americanum*) grass was introduced to the country in 2000 by the Ministry of Livestock Development of Sri Lanka with an aim to get a sustainable feeding system using intensified all-year round fodder production for a unit of 2 milking cows. This fodder block holds approximately 500 grass plants on 1m spacing. Lack of intensive management with appropriate practices, in many cases has reduced the productivity, particularly in the dry zone. However, if the farmer followed the key practices in the approved manner the results would not be unsatisfactory (Premaratne and Premalal 2006).

**Materials and methods** The study was conducted at 5 veterinary ranges; Dambulla, Kekirawa, Tanamalwila, Lunugamvehera and Hambantota in the low country dry zone selecting 2 small dairy holders having 2 milking cows during Jan. 2005-Dec. 2005. Mean annual rainfall of the selected zone was 1200–1700 mm. A 500 m<sup>2</sup> fodder block was established with hybrid Napier CO-3 grass in each farmstead. During establishment and management, farmers are systematically advised to follow the all recommended key practices. Two months after the establishment of the crop, 3 subsequent cuts were obtained in 40 day intervals and data were recorded on numbers of tillers/plant, dry matter yield (DMY)/plant and crude protein (CP) content at each harvesting time with 5 replicates.

**Results and discussion** There were significant difference ( $P < 0.05$ ) in tillers/plant and DMY/plant while no significant difference ( $P < 0.05$ ) was observed in CP content (Table 1). Calculated data on required grass plants/day (assuming 20 kg of dry matter/day for 2 milking animals) and for all year round feed supply are all included Table 1.

**Table 1** Mean tillers/bush, DMY/bush and CP contents of 3 harvesting regimes.

Location	Tillers/bush	DMY/bush	CP (%)	Bushes/day*	Bushes/year*
Dambulla	60.5 <sup>b</sup>	1.25 <sup>b</sup>	5.52	16	640
Kekirawa	62.0 <sup>b</sup>	1.19 <sup>b</sup>	15.61	17	680
Tanamalwila	70.5 <sup>a</sup>	1.66 <sup>a</sup>	16.11	12	480
Lunugamvehera	65.0 <sup>b</sup>	1.24 <sup>b</sup>	16.30	17	680
Hambantota	69.0 <sup>ab</sup>	0.92 <sup>c</sup>	16.10	22	840
SEM	4.74	0.03	0.09		

SEM = Standard error of Mean.

Means within a column having same superscript are not different ( $P < 0.05$ ), \* Calculated figures on 3<sup>rd</sup> column

According to results, it appears that 12-22 and 480-840 number of fodder grass plants are required per day and to supply fodder all year, respectively in the dry zone smallholder dairy units. However, farmers must follow the necessary and recommended farming practices during establishment and management of the fodder block.

**Conclusions** Intensive fodder block of hybrid Napier CO-3 grass is an important concept that produces high quality dry matter and this is a real aid for land limited dairy farmers. It could also be concluded that 500 m<sup>2</sup> would not be adequate for smallholder dairy units having 2 milking animal for all year, and farmers should alter their land extent and number of grass plants accordingly.

### References

Premaratne S. and Premalal, G.G.C., 2006. Hybrid Napier (*Pennisetum purpureum* x *P. americanum*) var. CO-3; A resourceful fodder grass for dairy development in Sri Lanka. *The J. of Agric. Sc.* Vol: 2 No1 22-33.