

IN VITRO DEGRADATION AND GAS PRODUCTION OF TROPICAL BROWSE PLANTS IN DIFFERENT STATUS



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Introduction

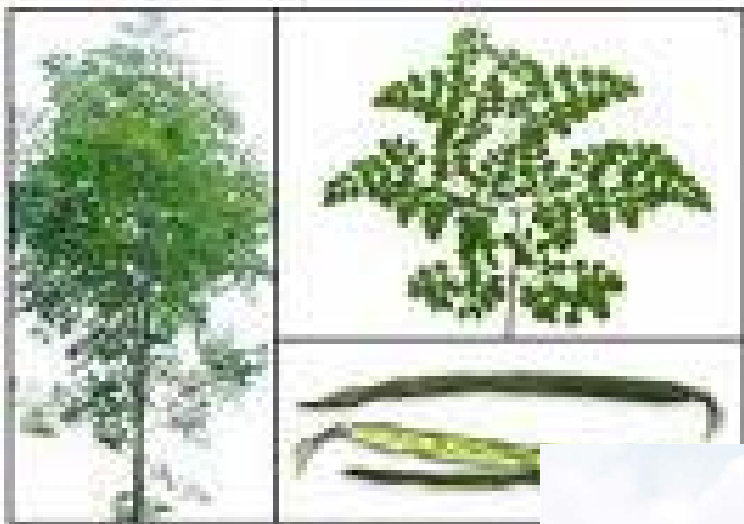
- Tropical browse may constitute an important fodder for ruminant semi-intensive farming
- Problem with tropical browse plants is high content of secondary compound (tannins and saponin) which reduce the nutritive value (Fall *et al.*, 1998).
- Limited information about tropical browse plants were fermented in different status, such a single ingredient, mix with grass or in a complete ration for small ruminant.

Objectives of the research

- to evaluate in vitro dry matter degradation and gas production of tropical browse plants :
 - as a single forage
 - mix with native grass
 - and in the complete ration

Materials and Methods

- Five tropical browse plants (TBP):
Leucaena leucochepala,
Moringa oleifera,
Calliandra calothyrsus,
Gliricidia sepium.,
Artocarpus heterophyllus
- Mix grass : TBP = 70 : 30
- Mix grass : TBP : by product = 70 : 20 : 10



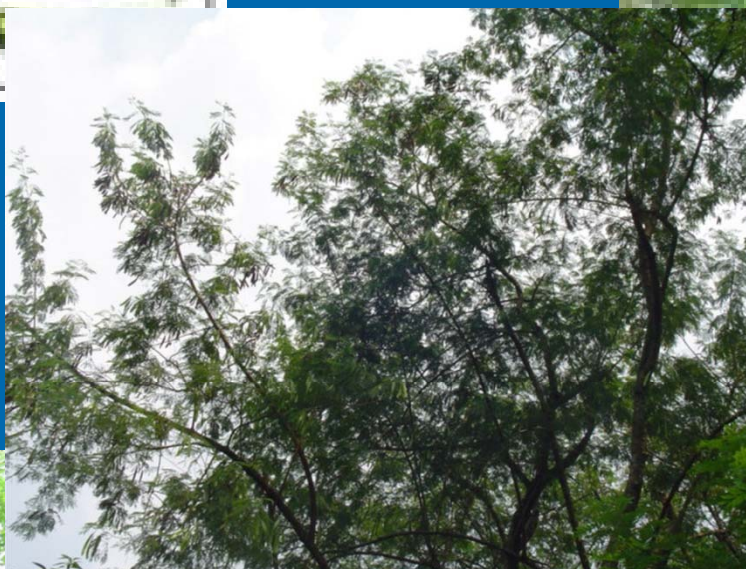
Moringa oleifera

Gliricidia sepium



Artocarpus heterophyllus

Callyandra calothyrsus



*Leucaena
leucocephala*



Two fistulated sheep as donor rumen fluid

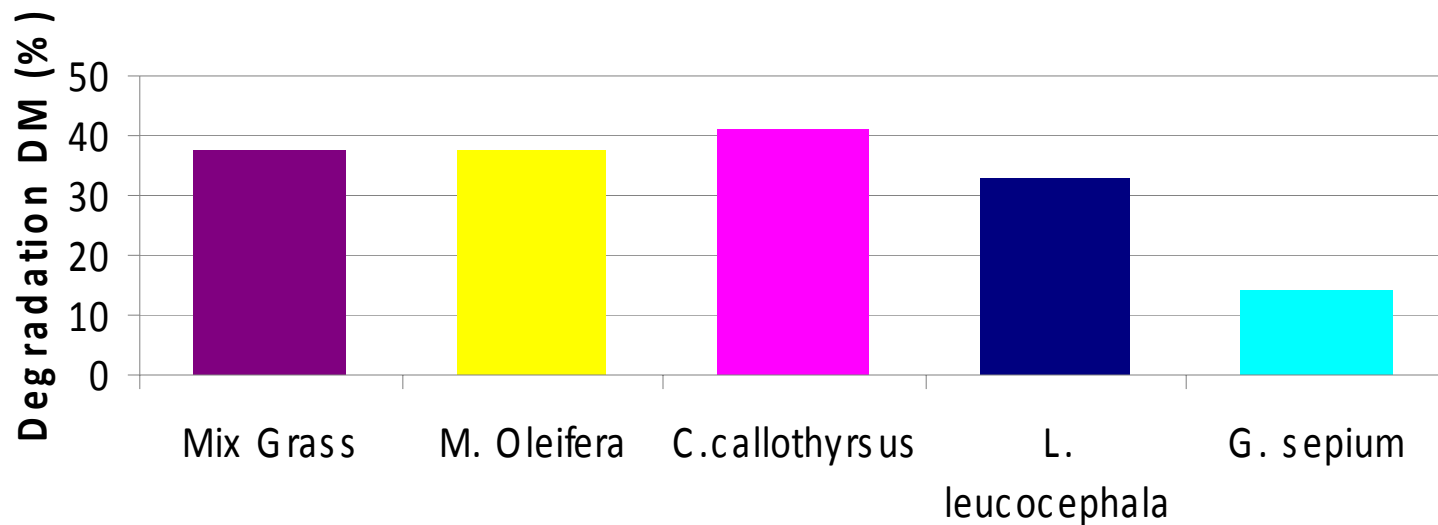


In vitro DMD (Baba et al., 2002)
and gas production rate (Close and Menke, 1996)

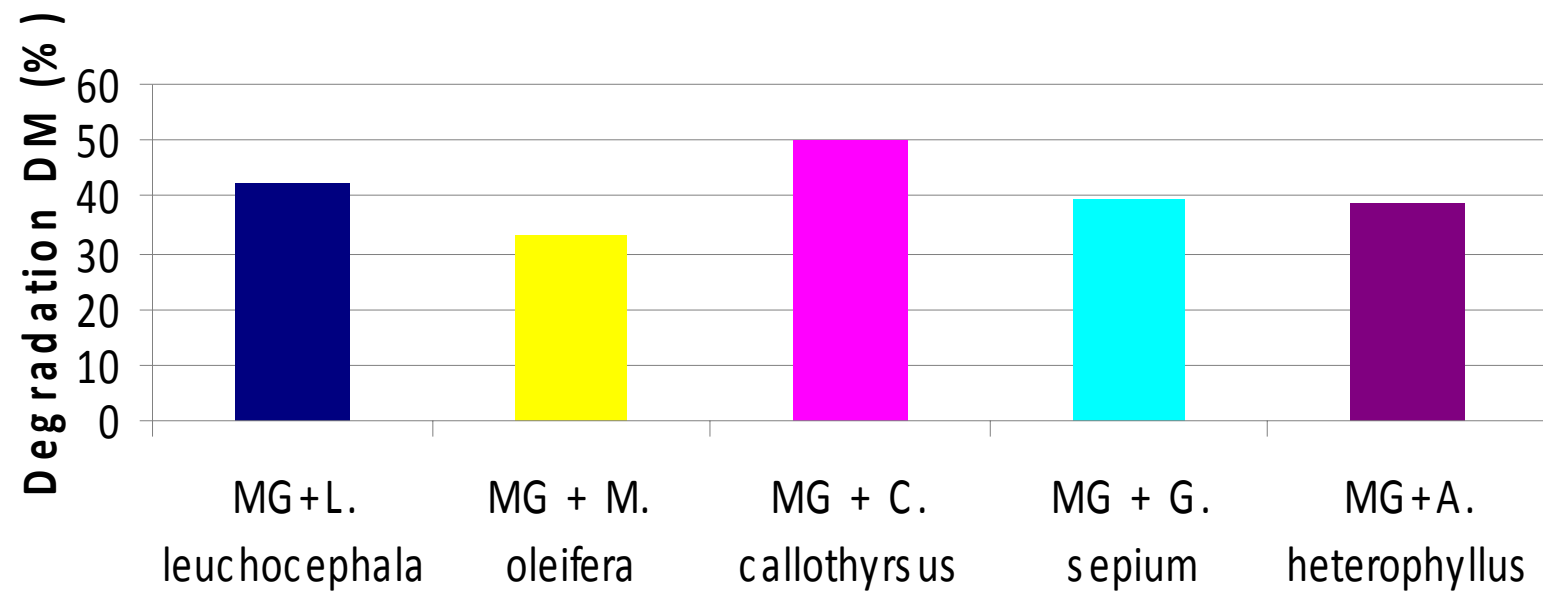


Result and Discussion

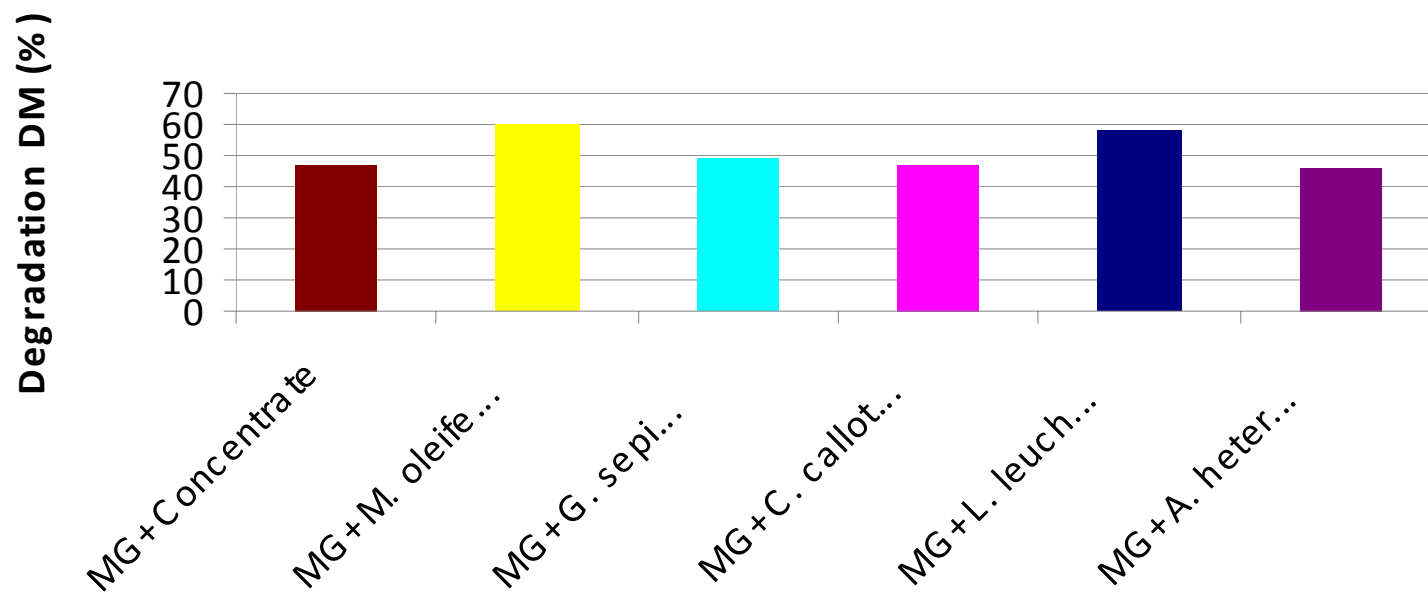
In vitro dry matter degradation with rumen sheep
(as a forage)



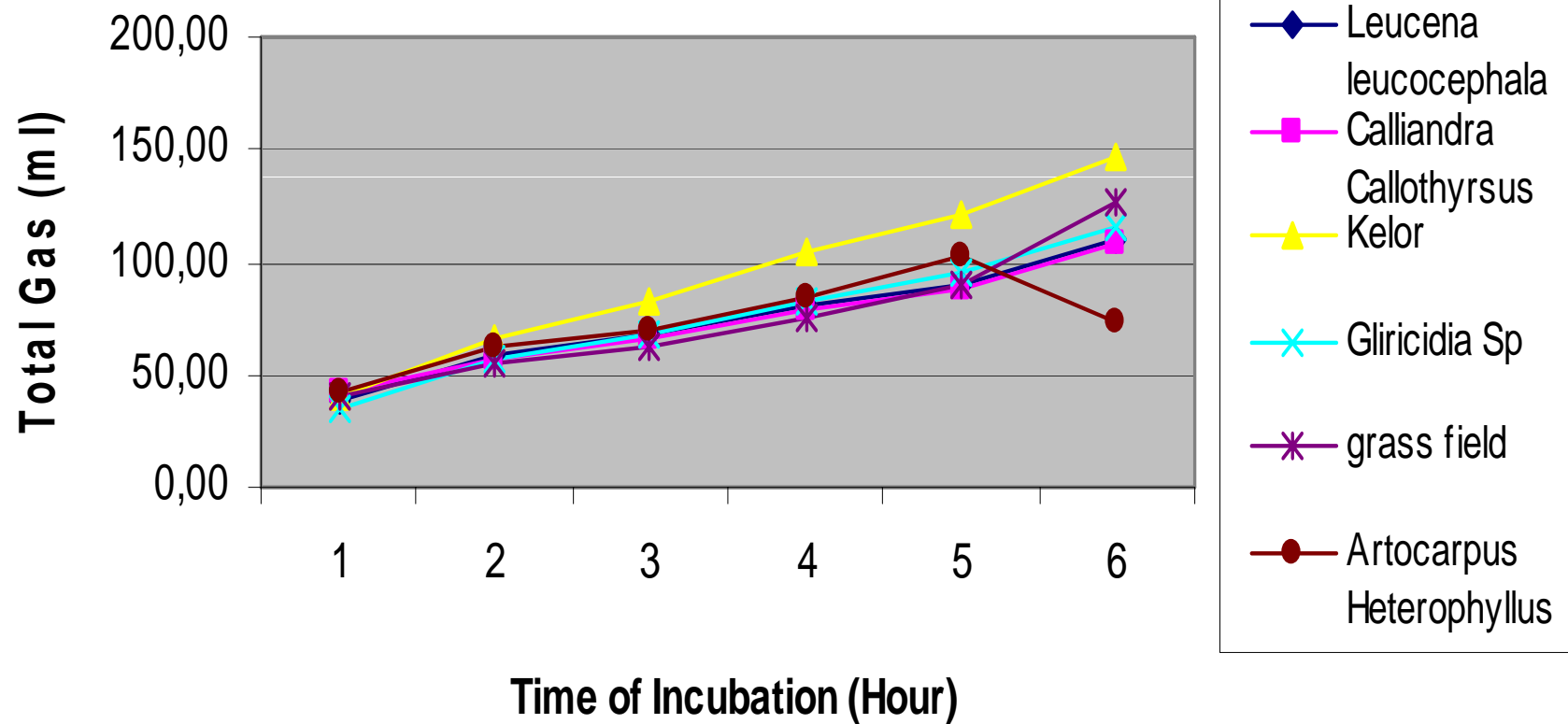
In vitro dry matter degradation with rumen sheep (Mix with Grass)



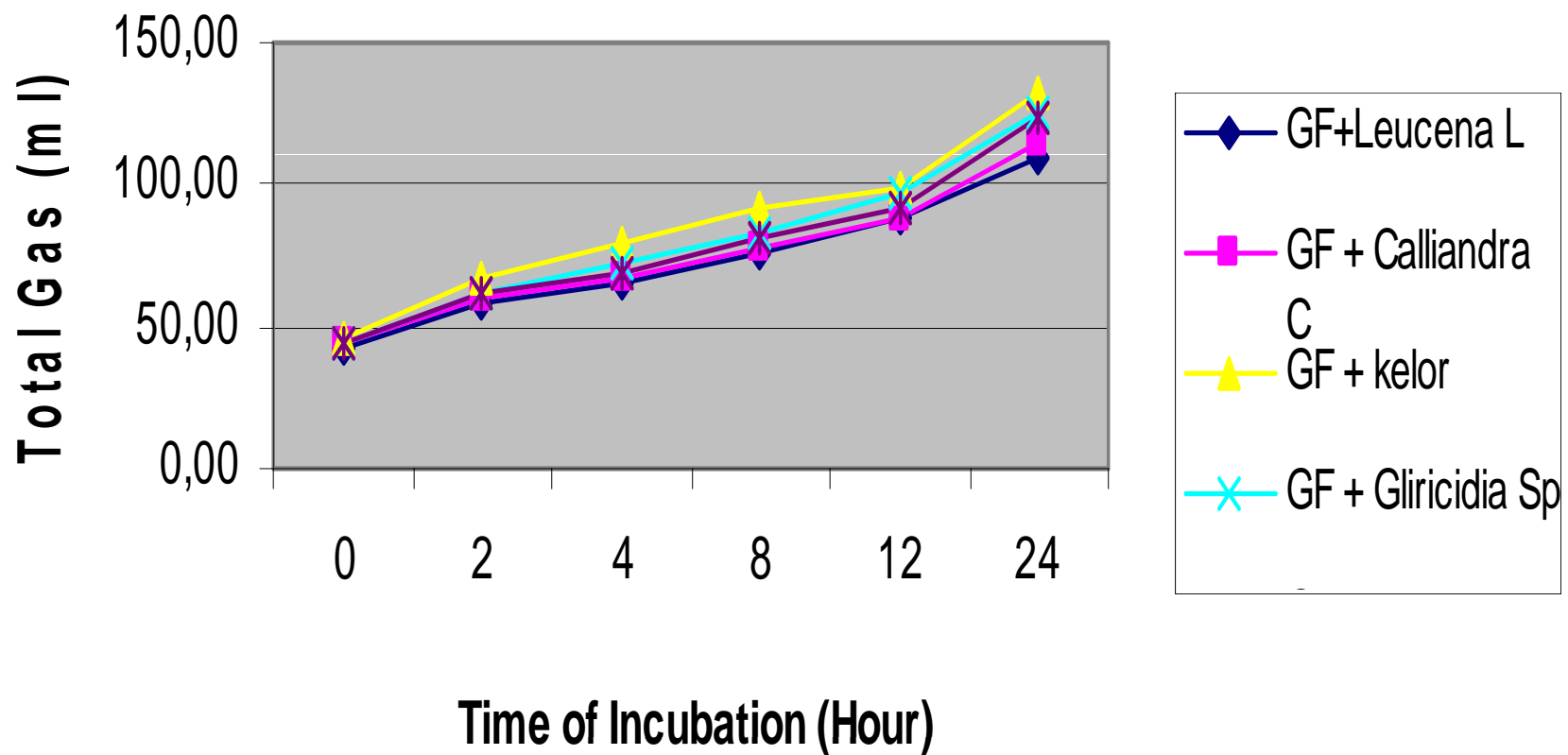
In vitro dry matter degradation with rumen sheep (in Ration)



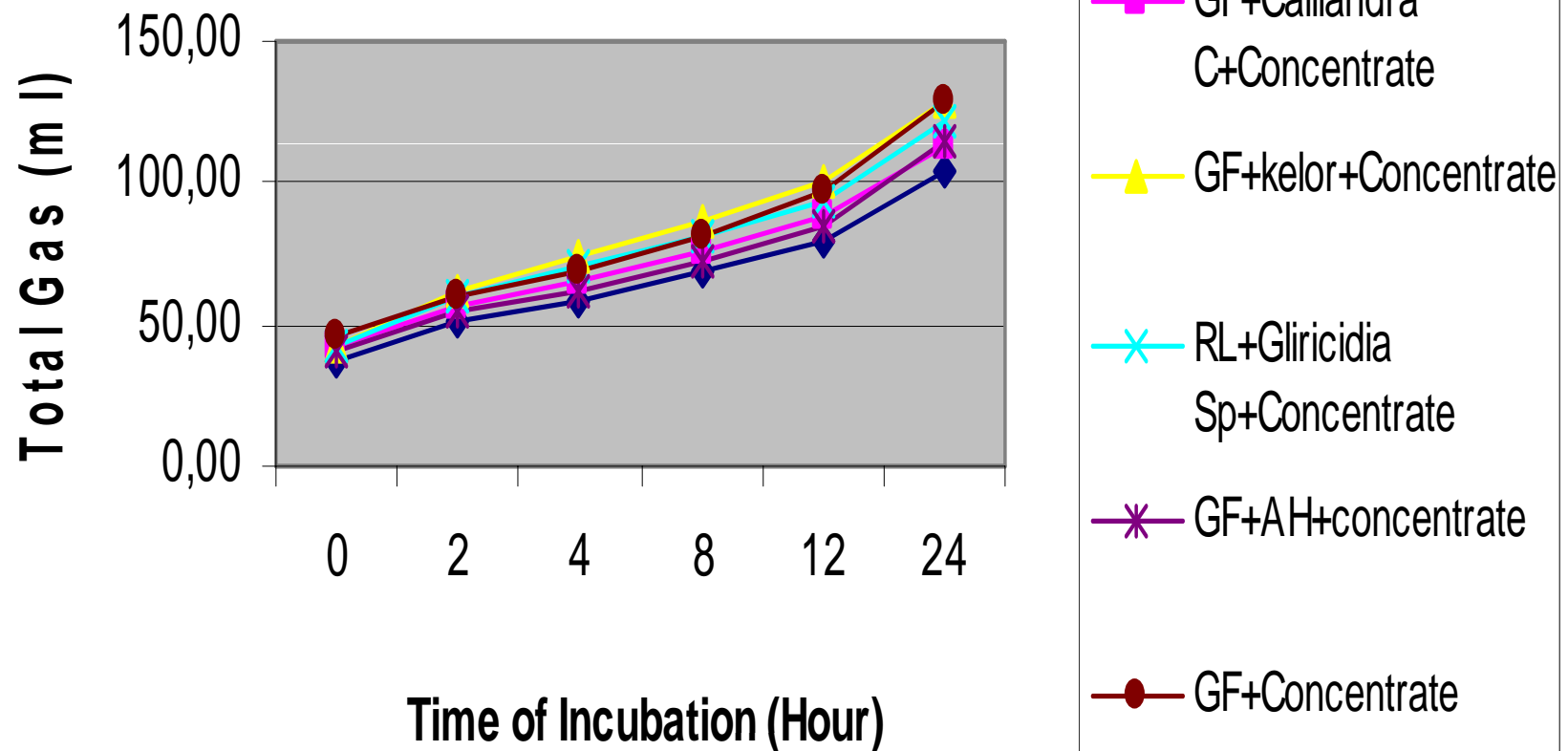
Total Gas Production with Rumen Sheep (as a single forage)



Total Gas Production in Ruminal sheep (Mix with Grass)



Total Gas Production in Ruminal sheep (in Ration)



Conclusion

- The highest DMD was found in *M. oleifera* as ration, while the highest gas production was *M. oleifera* as single forage
- *Moringa* leaves better be used as part of the ration for ruminants.



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Thank you



Further result

➤ In vivo experiment :

Sheep fed with *M.oleifera* in the ration has good immune response with higher lymphocyte, nethrophyl and IgG compared to other forages