

EXPLORING NICHEs FOR DAIRY INTENSIFICATION IN SMALLHOLDER FARMING SYSTEMS IN MALAWI

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INTRODUCTION

Dairying in smallholder farming systems can be intensified to improve livelihoods. The biggest constraint faced by smallholder dairy farmers in Malawi is unavailability of affordable high quality dairy feed. High quality pasture grasses and protein-rich leaf meal from leguminous plants (trees and annual legumes) are a low-cost option that is increasingly being promoted in the region. On average milk production is at 14 litres per day per cow with a range of 4 to 35 litres compared to potential yield of 40 litres. A household survey was conducted among 100 smallholder practising zero grazing in Dedza district to inventory feed sources currently fed to dairy cows, their impact on milk production and to identify niches that could potentially be used to increase feed and fodder production.

RESULTS:

1. TYPE OF LIVESTOCK FEED USED

- 80% of respondents are using grasses sourced from veld or dambos, comprising hyperrhenia (*Hyparrhenia rufa*), local buffel grass (*Cenchrus* spp.) and star grass (*Cynodon* spp.) all known to be poor quality grasses.
- 59% of respondent's cultivated improved grasses Rhodes grass (*Chloris gayana*) (13%) and Napier grass (*Pennisetum purpureum*) (46%).
- Recommended practice for grass feed sources is that one cow requires 0.4 hectares of land planted with grass species like elephant grass per year (Orodho, 2006).
- 75% of farmers also collected and stored crop residues though quantities were inadequate. Recommended practice is to store 300 bales (each weighing 20-30 kilograms) depending on type of residue which are sufficient for one cow in a year (Heifer International, 2012). The length of lean period was reported to be roughly 3 months beginning from September to November

2. PERCENT (%) RESPONSE ON FEED AVAILABILITY IN A YEAR

Time of year	Grass from Veld/ dambos	Crop residues	Rhodes grass	Elephant grass	Groundnut hulls	Maize stover
Year round	9.3	34.2	9.3	21.7	6.2	19.3
Dry season	49.7	-	6.5	23.9	3.2	16.8
Wet season	56.0	7.0	21.0	7.0	-	9.0
Average	38.3	13.7	12.2	17.5	3.1	15.0

3. FEED USE AS IT RELATED TO MILK PRODUCTION

Feed type	Pasture + Crop Residues	Grass + Crop Residues + tree leaves	Combining all feed types	Potential milk production (Cesar, 2013)
Number of farmers	86	75	5	-
Milk yield (litres per day)	10-12	12-15	25-30	40

4. CHALLENGES FACED BY DAIRY FARMERS

1) Lack of reliable and organized markets. 2) Unreliable access to other services such as artificial insemination (AI) facilities. 3) Low milk prices, the prices offered by companies were very low to meet the costs of dairy farming. 4) Unreliable payments, farmers receive payment very late. 5) Culture of establishing pastures/fodder fields with dairy feed species is limited among dairy farmers

5. REWARD AS NICHEs FOR DAIRY FARMERS

1) Dairy farmers could be encouraged to store pasture feed as good strategy for feed supplementation during dry season. 2) Farmers could produce own high quality leaf fodder to substitute the expensive commercial feeds 3) Improved access to extension services as only less than 30% of the farmers accessed 4) Due to limited land, dairy farmers could be encouraged intercrop fodder and pastures on the farmlands

CONCLUSION

Farmers are using diverse feed sources which varied at different times of the year. Only 5% of farmers used combination of all feed sources and realised higher milk yields between 25-30 litres per day. An opportunity exists for dairy farmers to exploit niches for local feed formulation where leguminous fodder trees could be used to supplement high protein content an ingredient rich for increasing milk yields.