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A SURVEY ON THE USE OF BROWSE PLANTS AS MILK ENHANCERS BY LIVESTOCK FARMERS IN KALTUNGO LOCAL GOVERNMENT AREA, GOMBE STATE, NIGERIA

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Abstract
The inadequacy of milk and milk products in the country in spite of the substantial estimated population of co vis a vis recent advocacy for organic farming has brought about the need for exploration of ethno-medicin plants that enhances milk production. A survey was conducted in kaltungo LGA of Gombe State in the months october to may (dry season) 2017. Structured questionnaires were administered to 122 purposively selec livestock owners in the study area. The stud a identified, collected and documented various plant parts, for of usage as milk enhancers to both humans and livestock. Majority (92.60%) of the respondents offer tree lea as feed while (50%) used browse species as milk enhancers. Result obtained from the present study fur revealed that leaf portion (96.61%) was the most commonly used plant part followed by stem (3.38%) trend of parts used was in the decreasing order of leaf > stem > bark while in terms of form of usage, the fr form was used more than the dried. The results further revealed that seventeen species were commo used Chediya (Ficus thonnigii) (32.78%) recorded the highest percentage then followed by Marke (Anogei leiocarpus) which recorded (31.90 %) when used as a milk enhancer while lagoro, tsamiyan biri and gu recorded the least. It is concluded that farmers in the study area are aware of the potential of some of indigenous plant species as milk enhancers. These feed resources can also serve as source of feed during prolonged dry season. It is therefore recommended that bioassay of these plant species using lactating dam determine the effect on milk yield

INTRODUCTION

Plants have been used throughout history for their medicinal properties. This use has often focused on human health but plants have also been, and are still applied in ethno-veterinary practice and animal health management. Public awareness of the potential environmental and health risks associated with use of heavy chemicals has also increased. Moves such as this have increased the drive to find alternatives to synthetic substances and research has again turned to the use of plant bioactive ingredients as means of improving animal health, through the use of available plants genetic biodiversity. Ruminant livestock in most parts of the tropics are grazed extensively on native forages which are poor in quality. The shortfall of forage quality and quantity contributes to the reduced livestock productivity (Mengistu, 2003) which is more severe during the dry season. Alternatives are browse plants. Browse refers to leaves and twigs from shrubs and trees available to ruminants as feed and in a broader sense including also flowers and fruits or pods (Hadja, 2007). Browse plants play a significant role in the nutrition of ruminant livestock in the tropics (Njidda *et al.*, 2010). Several researches conducted using shrubs and tree fodder to supplement either native grass or crop residues have shown positive responses with respect to the productivity of cattle, sheep and goat (Norton, 1998), as r enhancers (Garba and Muhammad, 2008). How the utilization of many is rather opportunistic (Ka *et al.*, 2004). Unconventional feeds originating f survey of plant materials comprising of trees, legu grasses and shrubs have been shown to improve a g deal, milk yield of dairy livestock. (Kilongozi e 1989, Garba and Muhammad, 2008, Yahaya 2010). The inadequacy of milk and milk produc Nigeria in spite of the substantial estimated popula of cows brings to fore the need for increased milk y to cater for the teeming population. One wa achieving this is the use of ethno-medicinal plants enhances milk production. Thus, this study conducted to identify, collect and document va plants part, propagules and form of usage of t plant-based milk enhancers

Materials and Methods

Data collection and analysis

The data obtained from the study was analyzed u simple descriptive statistics of frequencies percentages.

Results and Discussion

Table 1 shows that 88.50% of the respondents supplements to their livestock while a me

proportion (11.50%) do not. Most of the respondents (63.93%) used both trees and shrubs while (26.23%) used trees as their source of feed and (9.84 %) used shrubs. The result further revealed that (50.00%) used browse as milk enhancers and (50.00%) do not. This agrees with report of (Njidda *et al.*, 2010) who stated that browse plants play a significant role in nutrition of ruminant livestock in the tropics.

Table 2: shows plant parts used and form of utilization of browse species as milk enhancers recorded the highest with (96.61%) while fresh form recorded the highest in form of utilization with (89.35%). The study revealed that propagules of milk enhancers used were mainly leaves and stem portion of the plant. No literature report was obtained to ascertain this claim by the respondents. The different forms of usage by livestock were reported to be either in dried and fresh forms of utilization with variety of processing approaches. The common use of fresh form could be due to inexpensive processing method. This finding is in agreement with (Kilongozi *et. al.* (1989), Chettleborough. (2005) and Aliyu. (2006) who reported on native plants for different medicinal purposes. All parts of plant were however noted to be browsed by livestock native to the locality that used them purposely for milk enhancement. Leaves were the plant parts found mostly in use. The leaves and stem portion of the plant were mainly used. Literature report is very scanty to ascertain this claim which is in line with (Yahaya *et al.*, 2010). The result in the present study is in agreement with the report of Garba and Muhammad (2009), who reported that "Sabara" (*Guiera senegalensis*) leaf was most consumed by the animals relative to other parts.

Table :3 shows the common browse species used as milk enhancer in the study area. The results revealed that seventeen species were commonly used. Chediya (*Ficus thonnigii*) (32.78%) recorded the highest percentage then followed by Marke (*Anogeissus leiocarpus*) which recorded (31.90 %) when used as a milk enhancer while *lagoro*, *tsamiyan biri* and guava recorded the least. This is in agreement with Njidda *et al.* (2010) who reported that browse plants play a significant role in nutrition of ruminant livestock in tropical region

Conclusion

In conclusion, farmers in the study area are aware of the potential of some of the indigenous plant species as milk enhancers. These feed resources can also serve as source of feed to ruminant animals during the prolonged dry season.

Recommendation

From the result obtained in the present study, it is recommended that bioassay using lactating animals to determine the effect on milk yield be conducted. Furthermore, conservation and propagation of the numerous plant materials used as milk enhancers be conducted as a way out of preventing these natural endowments from extinction.

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Table 1: Use of supplements, form of forage used and use of forage as milk enhancer n = (122)

Variable	Frequency	Percentage (%)
Offer supplement		
Yes	108	88.50
No	14	11.50
Trees as feed supplement		
Yes	113	92.60
No	9.0	7.40
Form of forage use		
Trees	32	26.23
Shrubs	12	9.84
Both	78	63.93
Use forage as milk enhancers		
Yes	61	50.00
No	61	50.00

Table 2: Plant parts used and form of utilization of browse species as milk enhancer

Variables	frequency	Percentage (%)
Plant parts used		
Leaves	57	96.61
Stem barks	2.0	3.38
Form of utilization		
Fresh	48	89.35
Dried	11	18.64

Table 3:Common browse species used as milk enhancer in the study area

BOTANICAL NAME	LOCAL NAME	COMMON NAME	FREQUENCY	PERCENTAGE (%)
Ficus sycomorus	Bore	Baure	24	19.65
Ficus thonningii	Chediya	NA	40	32.78
Pelos biglobosa)	Dorawa	NA	2.0	1.63
NA	Durumi	NA	3.0	2.45
Acacia sleberiana	Farar kaya	NA	5.0	4.0
Adansonia digitata	Kuka	Boboo	9.0	7.3
Pretecarpus einaceus	Madobiya	NA	8.0	6.5
Zizipus mauritinia	Magarya	Ber tree	13	10.6
Mangifera indica	Mangoro	Mango	3.0	2.45
Anogeius leiocarpus	Marke	Chewing stick tree	39	31.90
Guiera senegalensis	Sabara	NA	26	21.3
Tamarindus indica	Tsamiya	Tamarind indica	25	20.49
Moringa oleifera	Zogale	Miricle tree	3.0	2.45
Khaya senegalensis	Madaci	Dry zone mahogany	2.0	1.63
NA	Lagoro	NA	1.0	0.81
NA	Tsamiya biri	NA	1.0	0.8
Psidium guajava	Gwaiba	Guava	1.0	0.8

NA=Not Available