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The Use of Camels, Donkeys and Oxen for Post Emergence Weeding of Farm Lands in North–Eastern Nigeria

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ABSTRACT

The study was conducted to find out the acceptance or preference for the use of camels, donkeys and oxen to supplement human limbs in post emergence weeding of farm lands in north-eastern Nigeria. Data collected from 800 farmers randomly selected, 200 from each State, out of this total, 95% of the farmers used animals based on age; size and body conformation; sound health and availability. Oxen and donkeys were harnessed in pairs, while camel in single. Normal mould board implements are used in harnessing the animals. About 90% of farmers used animals for post emergence weeding of farm lands. The animals operate in ridges by covering and turning soil on the weeds under the crops between rows allowing to decay thereby serving as green manure and the few taller uncovered weeds were uprooted. The animals work on an average of six hours daily without much stress or reduction in output. The use of Camels; donkeys and oxen was found to be efficient; economical; reliable and readily available; saver to soils and the environment.

Key Words: Camels; Donkeys; Oxen; Post emergence weeding; Farm lands

INTRODUCTION

The importance and use of draught animals in the developing countries cannot be underestimated, because of their low cost, availability and capacity to increase light land cultivation (Gefu *et al.*, 1990). They play an important role especially in the livelihood of the resource poor rural farmers who cannot afford the high cost of modern farming machineries (Sanni *et al.*, 2004). Since time immemorial, animals have supplemented human limbs by providing power to till and cultivate the soil and to transport farm produce, even to distant towns. Draught animal power is used today on a large scale in many parts of the world (Starkey & Faye, 1990). Oxen have been the most familiar and dominant work animals used for land cultivation in Nigeria (Gwani, 1988; Daramola *et al.*, 2000). Today however, because of the high cost of oxen and demand as a source of animal protein, in the northern Nigeria for instance, camels and donkeys were used traditionally as a transport animals, carrying heavy loads to distant towns even across the boarder and desserts (Adeniji *et al.*, 1991). The use of camels and donkeys has increasingly gain acceptance as draught animals. The animals were easy to control; handle and operate even by women and children and therefore used for post emergence weeding of farm lands. Despite significant contribution to the livelihood of farmers until recently camels and donkeys have been the most neglected domestic livestock in Nigeria. These animals have ecological advantages and can be used in any part of northern Nigeria.

There are no much literatures on camels; donkeys and oxen as source of animal power for post emergence weeding of farm lands. This study aimed at devising a way to bridge the information gap and to create more awareness on the use of camels; donkeys and oxen as a source of animal power to supplement human limbs in post emergence weeding of farm lands to increase agricultural production within households of rural farmers in Nigeria.

MATERIALS AND METHODS

Data were obtained from four States of North- Eastern Nigeria, namely Adamawa, Bauchi, Borno and Gombe for the period of 4 cropping seasons (July, 2006 to July, 2009). Data on various aspects of the use of camels; donkeys and oxen for post emergence weeding of farm lands were collected from 800 farmers randomly selected. Other methods used include direct observation and administration of a well- structured questionnaire to farmers at the time of operation.

RESULTS AND DISCUSSION

Selection of animals for land cultivation: About 95% of the farmers interviewed revealed that there were no particular criteria used in selecting animals for both

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preparation and weeding of farm lands. The farmers in the study areas select animals based on age; body size and conformation and availability. Any healthy animal of 3-6 years old irrespective of sex can conveniently pull plough of any kind. This corroborates the report of FAO (1972) that in practice animals used for draught purposes were selected on the basis of size, conformation, age and sound health.

Implements used in harnessing and training of animals: Implements/materials used include normal mould boards used in the secondary tillage or weeding of farm lands. Mouth guides made from jute, bamboo leaves and or grasses is applied to prevent the animals from eating crops during the operation.

Preference for animal power to other methods of weed control by the farmers: Based on this study about 90% of farmers use animals in post emergence weeding of their farm lands. Others revealed that they were pushed to using especially camels and donkeys for the above mentioned purpose by the lost of the greater percentage of their cattle to disease outbreaks and the economic meltdown of the country. The farmers used animals, because of draught efficiency; easy to train; no technical know-how required; hardy; stronger; fatigue and hardship tolerant; easy to control even by women and children; faster during operation than human limbs; wide field coverage within few hours However, similar findings have been reported by Rai *et al*. (1991), Rai and Raghvendar (1994) and Bhakat *et al.* (2002).

Weed control: Draught animals are used for post emergence weeding of the farm lands with minimal negative effect on soils compared to tractors. The animals operate in ridges by covering and turning the soil on the weeds under the crops between rows allowing to decay thereby serving as green manure. The few taller uncovered weeds were uprooted by another person as shown in (Figs. 1, 2 & 3). Also, the shorter crops buried were uncovered by the same person following the operators from behind.

Out of the 800 farmers contacted none of them uses modern method of weed control. Most farmers also do not have the capacity to keep pace with the increasing technical sophistication of the agricultural modern facilities where available. Chemicals are expensive and could burn and destroy their crops and cause environmental pollution and reduce soil micro flora. The animals work on the average six hours per day without much stress or reduction in output.

Management and disease control: When not working, animals are left on free-range throughout the year especially in areas with wide expanse of land. Camels feed diurnally or nocturnally and are unrivalled in their ability to utilize desert and semi-desert vegetation (with certain attributes; thorny, odorous & secretive), which are unpalatable and unacceptable or inaccessible to many other animals (Schwartz *et al.,* 1983; Ghaji & Adegwa, 1986; Yagil, 1994). Although dromedaries are known to meet their dietary need mainly on trees and shrubs, interviews with farmers revealed that some grasses, found only in the rainy season, *Pennisetum* sp were also utilized by camels. Donkeys and oxen are fed with green fodder or concentrates and can utilize a wide range of agricultural by-products. During the rainy season, after the day's work or on work-free days, animals are allowed to graze natural forages in the

Fig. 1: The use of camel for post emergence weeding of farm lands

Fig. 2: The use of donkeys for post emergence weeding of farm lands

Fig. 3: The use of oxen for post emergence weeding of farm lands

surroundings. This is usually supplemented by cut-and-carry weeds, which are usually fed to the animals in the late evening. During the dry season when grasses were scarce and their quality low, some farmers fed their animals with farm residues.

Limitations of draught animals: The farmers experienced some constraints like low camel and donkey population; high cost of oxen; increase cost of ploughing implements; pregnant females reduce output; veterinary services, inadequate capital and lack of extension services are some impediments to the utilization of draught animals.

CONCLUSION

In conclusion, using draught animals for post emergence weeding of farm lands is advantageous, because of efficiency, fast and economically viable, fatigue and hardship tolerant than human limbs. Due to low cost of managing these animals, the use of draught animals in post emergence weeding should be adopted and encouraged, which may increase agricultural production.

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