

TRAINING AND MANAGEMENT OF DRAUGHT ANIMALS AS A REQUISITE FOR OPTIMUM UTILIZATION IN NORTHERN NIGERIA

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Abstract

In developing countries, the use of draught animal is important due to the shortage of farm machineries. Training and management of draught animals is an important requirement for any draught animal system. Its maximum utilization relies heavily upon the type and nature of training received at the beginning when the animals are usually introduced to the work. Majority of Nigerian farmers manage their animals on nomadic pastoral system with little supplementary feeding and inadequate health care. It is suggested that improvement of draught animal system can be done through good training and provision of supplementary feeds in form of cotton seed cake, molasses, etc. Health of the animals can also be improved when they are regularly dewormed and vaccinated against disease.

Introduction

A draught animal training is one of the most important requirements for any draught animals system. The use of draught animals as a source of power for field cultivation and transportation purpose can only be achieved after a good training. It is generally recognized that draught animal's power, plays a significant role in all aspects of human endeavour especially on the African continent where the service of heavy machineries are not easy to come by (Bukar, 2007).

While there has been a considerable amount of research carried out on draught animal power, this has often concentrated on the design and development of equipment and cropping practice. The animal by definition is the key component of any animal draught system, and as such its training and management are of vital importance to the farmer as their well being is essential to his overall agricultural output. The purpose of training is to prepare the animals for work and enable them to respond positively to the trainers' command and regulations. Although the strategies for training varies with individuals, animal type, equipment and agro-climatic factors of the area, the optimum utilization of the animals relies heavily upon the type and nature of training received at the beginning when they are usually introduced to work (Yahaya, 1991). This paper reviews the constraints and contributions of draught animal training and management as a means for increasing efficiency of work output for those operations for which animal power is used.

Factors Militating Against Draught Animal Training and Management

Although draught animal owners (like crop farmers who practice mixed farming) have a requirement for optimum utilization in terms of reduced labour and reasonable income, the magnitude of these requirements depend on the choice of animals, its health status, nature of training and animal's nutritional needs for maintenance and work output.

In Nigeria, several factors militate against the proper training and utilization of draught animals;

- majority of the livestock are in the hands of nomads who practice little or no crop farming,
- majority of crop farmers purchase their draught animal at later age (3-4 years of age) when it is more difficult to train them,

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-most animals are castrated when they are about 3-4 years of age. This is not recommended practice because the trauma associated with castration is greater for older animals, -there is a lack of centres for draught animal hiring/ sales of pre-trained draught animals for farmers, -there is lack of supplementary feeding, as most animals for draught purpose are fed largely on crop residues in the dry season and graze native forages during the planting season. These crop residues are low in nitrogen and high in cell wall leading to decrease in digestibility and voluntary feed intake (Gabriel and Moses 1999, Dawaki et al 2006.). Also Smith(1988), reported that intake of poor quality feed is a major constraint to effective use of draught animals, particularly when milking cows are use for draught purposes.

Strategies for Draught Animal Training

Although all large animals can be trained for draught work under the dictum of availability, it is believed that effective training utilization of animals start from the selection of animals and equipment (type of animal and nature of materials) to be used for training during the beginning of the exercise.

Selection of Animal for Draught Purpose

The selection of animals for draught purpose unlike performance testing for meat and milk produce animal, has no single objectives/ criterion that can be used to test the value of an animal for the draught purposes (Bukanawo, 2001). Table I show breeds of animals used for draught purpose in northern Nigeria.

S/No.	Area	Breeds/Species
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Table 1: Breeds of Animals used for Draught Work in Northern Nigeria

1.	Sokoto and Gusau	Sokoto Gudali, White Fulani and Camel
2.	Funtua, Zaria, Kano, and Gashuwa	Red Bororo, White Fulani
3.	Gombe, Potiskum and Maiduguri	Red Bororo, White Fulani, Wandara and Camel
4.	Yola, Mubi, Jalingo, Bali	Adamawa Gudali, White Fulani, Red Bororo

Source: Musa, 2008

In practice, animals to be trained for draught purpose are selected on the basis of size, conformity, age and health (FAO, 2002). In some countries like Poland, Sweden and USA, performance tests that assesses cattle draught capability on a particular occasion have been developed. FAO (2002) further reported that animals for draught purposes should be selected on the basis of the following characteristics:

- stocky animals, thick set and strong muscle (particularly) at thigh, hindquarters and loins,
- short legged, powerful and strong jointed large feet with solid hollow hooves and brood and deep chest body.

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The materials and methods of training varies according to the type of animals to be trained, farmers preference and agro-climatic factor of the area .In most part of Africa two major categories of materials for training are recognized (Table 2)

Improved harness design is often advocated as a means of improving work efficiency, reducing hazards (working accident) and enhancing transfer of power from animals to implements. However, it has been observed that these improved designs are not only elaborate and costly but also not readily available in developing countries. Besides their use requires skills which majority of farmers in the developing countries do not have (ILAC, 2003).

Method and Techniques of Training

Dyrendah and Bengtson (1982) reported that before the commencement of training it is important to ensure that animals to be use matched in size and age so as to ensure evenness of work efficiency. Also, during this period the punching (Buda), passing of the rope through the nose, tying of the rope at the head region and harnessing are completed before the actual training starts.

In Nigeria, especially Northern part of the country, farmers employ the procedures during training shown in Table 3. Bakari (2006), observed that in most Hausa societies where draught is combined with fattening, training is started at about two years of age so as to prepare the animals to work, to get them used to the equipment and to allow the animals develop tractive capacity before the ideal age of 3-4 years when they are usually put to work.

Table 2: Materials for Draught Animal Training

Materials		Remarks
A. Harness which include:	1 wooded neck yoke 4-5m long	Available locally
	2. Two control Nylon ropes 5m long	" "
	3.1 nose rope in-between pairs 1.5m long	" "
	4. Long (wooden log) 0.5m long	" "
B.Implement which include	1. Ridgers (plough)	Expensive
	2. Cart	"
	3. Harvesters	"
	4. Cultivators	"
	5. Long needle or nose ring	For nose punching
C. Other implement especially For part animal (donkeys Horses and Camels)	1.Leather	Got rotten easily
	2. Cotton hemp	"

Source: Bakari, (2006)

Table 3: Training Procedures

PROCEDURES		REMARKS
1. Selection	Cattle	White Fulani are mostly used especially for park animals
i) Breed/Species	White Fulani, Horse, Donkey, Camel.	
ii) Sex	All sexes are used (pair of male/females)	
iii) Age	2-3 yrs/3-4yrs	Males perform better than females 2-3 years in area where the draught is to be combined with fattening
2. Castration	Removal of testicle	
3. Deworming	Control of worms	
4. Punching of nose (Buda)	To pass rope trough the nose	
5. Neck yoking (1 pair) training	Introduction of wooden yolk and pulling of log (plates II&III)	
6. Introduction of actual equipment	Working begins with the implement	

Source: Bakari, 2006

Support Needed for Effective and Efficient Training and Management of Draught Animals.

In order to assist farmers to make a successful transition from hoe cultivation to animal traction, a wide range of support services are required. These include;

- Establishment of farm training schools/centre at each Local Government
- Area of the Federation. This will give proper training to farmers and extension workers on the technical aspects (selection, training, feeding, harnessing, medication etc) of draught animals handling.
- Promotion of farmers' co-operative organizations where each farmer would contribute financially to purchase and training of draught animals and implement, for the establishment of draught animal hiring service/centre.
- Establishment of centers to supply equipment, spare parts, and to repair facilities.
- Provision of supplementary feed to meet the energy requirement for maintenance.
- Establishment of a system of non-farm adaptive (farming systems) research to identify problems and develop technological packages which are appropriate to local market, agronomic and family economic conditions.

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- Establishment of marketing systems which enable farmers to sell their surplus farm produces at reasonable prices.

Prevention and Routine Medication of Animals

- Vaccination:** Infections and disease in livestock cause huge economic loss to the country. Attention therefore should be given to prophylactic measures to work Animals. Available vaccines in Nigeria are majority bacterial mycoplasma and viral. The vaccines include – Black Quarter Vaccine (BQV), Contagious Bovine Pleuropneumonia Vaccines (CBPPV), Anthrax Spore Vaccine (ASV), Hemorrhagic Septicemia Vaccine (HSV), Hantavac Vomac-3 foot and mouth disease (FMD) and Tissue Culture Rinderpest Vaccine (TCRV) (NVRI, 1999). The vaccines are obtainable in various diagnostic laboratories across the country.
- De-worming:** periodic de-worming of work bulls is necessary and it can be given twice a year, end of rainy season and end of dry season (AVICO,2005). Various anthelmintis preparations are available in the country. These include Ivomece super, Alfamec, Benzal bolus, Nitroxynil, Piperazine, Tramisol plus, Tradox Wormazine, Vormofas (ANVAI, 1999). The drugs can either be administered orally or parentally.
- De-ticking:** prevention and treatment of ecto-parasite is necessary in order to get maximum output of the work bulls. Ticks and lice predisposes animals to many diseases, therefore prevention is the utmost importance. Available acaricide in Nigeria include: Clout Diazintol, Ectopor, Foidfleece Dip, Stelaone Cypermetrin (ANVAI, 1999).

Economics of Animal Traction

According to Bodet (1987), Animal traction is often associated with higher crop yield than those obtained from hoe farming. Bodet (1987), articulated further the economics of Animal traction as follows;

- it can increase the output per capital while reducing drudgery,
- the implements can be manufactured locally,
- the household or owner has the option of selling the bulls to get money for off-farm needs,
- draught animals can be used in powering mills, water raising system and timber extraction,
- Animal power requires less investment in support service and skilled manpower, and
- the returns to investment are less sensitive in yield fluctuation under animal traction than tractor mechanization.

Recommendations

It is recommended to select healthy fairly grown up bulls for the training purpose. The selected bulls should be properly fed especially with supplements. De-worm the bulls twice a year using Acaricide and vaccinate annually.

Conclusion

Draught animal power though a labour-saving device requires major changes before it could be fully integrated into the traditional farming systems, which include: Learning how to manage large animals and training them for traction, this will intensify land use also maintaining soil fertility.

Farmers should form cooperative society so that they will have easy access to loan for the purchase of draught animal implements. Annual vaccination and routine de-worming should be strictly adhered.

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