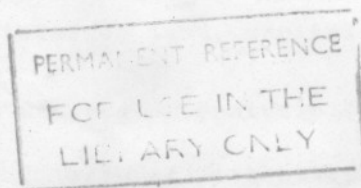


PRODUCTION SYSTEMS AND REPRODUCTIVE
PERFORMANCE OF INDIGENOUS BUFFALOES
IN SRI LANKA

DECLARATION

This dissertation was composed by myself
Luwisdura Neville Adrick De Silva,
and the work described in my own
B.V.Sc.(Sri Lanka)

L.N.A.de Silva.



Dissertation Submitted to the University of Peradeniya
for the Degree of Master of Philosophy.

January 1984

0
462365

SUMMARY

A field survey was conducted on the indigenous buffalo of Sri Lanka, to determine the systems of their management, patterns of utilization and reproductive performance and the interrelationship among these factors. The sample comprised 11,863 buffaloes (little more than 1% of national population) belonging to 528 holdings distributed in 16 of the 24 districts of the country. A sample representing approximately 1% of the buffalo population was obtained from each of the following districts: Ampara (Am), Anuradhapura (An), Badulla (Bd), Batticaloa (Bt), Gampaha (Gm), Hambantota (Ht), Kalutara (Kl), Kandy (Kd), Kegalle (Ke), Kurunegala (Kn), Matale (Ml), Matara (Mt), Polonnaruwa (Po), Puttalam (Pu), Ratnapura (Rp) and Trincomalee (Tr). Several veterinary ranges were included such that the different agro ecological zones (AEZZ) were represented. Buffalo farmers were visited, a questionnaire administered and stock numbers were physically verified. Rectal examination was done on 1300 breedable females in the sample in order to determine their reproductive status.

Almost all of the buffalo farmers were primarily engaged in paddy cultivation in small holdings, and supporting an average of 7.5 people. Their resources in terms of land, capital and stock were limited.

Buffaloes were managed extensively (free grazing only) or semi extensively (tethered with or without free grazing). Former system was practised in the Dry Zone and the Intermediate Up Country regions whereas in Intermediate Low Country, Intermediate Mid Country and Wet Mid Country zones, the latter practice was predominant. The main source of feed consists of low quality herbage obtained from grazing. Paddy straw is fed in some regions during periods of fodder shortage. No supplementary concentrate feed is provided. The overall average herd size was 22.5 ranging from 5.3 (Kd) to 53.6 (Ht). On average a herd was composed of 17.1% of 0-1 year, 13.0% of 1-2 year, 9.1% of adult heifers, 32.9% of

cows, 14.9% of castrated males and 13.1% of entire males.

Main use of buffaloes was in tillage. On average 92% of the farmers used their animals in land preparation (ploughing/puddling/levelling) for paddy cultivation and 82% used in threshing the harvest. The mean age of initial use was 3.1 yr and 82.9% farmers used both males and females. Number of buffalo days required to plough one acre of land varied from 4.0 (Kd) to 7.8 (Gm). Puddling generally required twice as many buffalo days as with ploughing. The mean duration of work was 52.3 days/year. This was fairly consistent throughout the country. Proportion of farmers using buffaloes regularly for milk production was only 14%. This covered only 13% of the buffalo cow population. Milk production from buffaloes was mostly restricted to Tr, Bt, An, Ht, Rp, Mt and Kl in which districts more than 60% of herds were being used for this purpose. The overall mean lactation yield was 1.5 litres/day and lactation length 5-6 months.

There was general agreement between the information on reproductive performance provided by farmers and the findings on rectal examination. The overall means of the respective variables were: age at first calving = 45.7 months, annual calving rate = 57.8% and calving interval = 18.9 months. Rectal examination revealed 56.5% to be pregnant, 17.4% to be non pregnant but cycling and 26.1% non pregnant and non cycling. These variables were, however, found to vary significantly among districts, AEZZ and according to systems of management and utilization. Fertility was found to be comparatively higher in milking, limited suckling (calf separated during part of the day), and non working groups of buffaloes.

Haemorrhagic septicaemia and gastro intestinal parasitism were reported to be the major disease problems. Proportion using vaccination to control infectious diseases was 64.9%. Percentages of annual mortality were 25.4, 21.5 and 8.0% among age groups of 0-1 year, 1-2 year and adults respectively.