MANAGEMENT SYSTEM AND HEALTH DISORDER RELATIONSHIP IN BUFFALO FARMING - BRAZIL

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ABSTRACT

This prospective observational study was undertaken to quantify the incidence of health disorders of buffalo associated with the farm management practices. Data were obtained from the 165 buffalo farms. According the health status, four farm types were identified: Type 1- (11.5%) characterized by low health disorders incidence. Type 2 – (18.8%) with high incidence for specific reproductive disorders. Type 3 – (38.7%) with high incidence of calf disorders, and Type 4 – with high incidence of all health disorders. The variables significantly associated with the health disorders in the type 1 were: Belém region location, herd with 100 to 200 heads, unique pasture cultivated, more than 20 plots, vaccination against all regional diseases, regularly salt supplementation, strategic helminth control, regularly ectoparasites control and calf health management. In the others farm types was observed failures in this practices.

Key word: buffalo disease, ecopathology, farming system, health management

INTRODUCTION

Management is the decision making process whose the principal purpose is the economic production of farm. These decisions are influenced by the various components of the whole farm enterprise which involve several steps of measures economically and technically practicable. The variability in management options result in differents levels of health disorders associated with differents risk factors. Consequently, health disorders may affect the production process differently depending on the farming system (5).

Several references exist on the relationship among cattle management systems production and disease (1,2,3,6,7). However, little information is available on the association of management options and health status in the buffalo farming. The objective of this study was to quantify the incidence of health disorders according the management options in the Amazon buffalo farms.

MATERIAL AND METHODS

Data on demographic, management procedure and health status were recorded during individual visits in buffalo farms from 1995 to 2000. A total of 165 farms were visited, all situated in Pará State, in the North region of Brazil. The methodology strategy and data-gathering procedure of this survey were adapted of the (3) and (4), respectively. Data were obtained from the farmers and the unit of observation was the herd-year. The statistic process used for the analyses involved three steps: In the first step the farms were classified according to descriptive data. In the second step a correspondence analysis were used to compare the farm groups. In the three step the farm groups were tested for interrelationships by the hierarchical ascending classification method. The χ^2 test of independence was used to examine interrelationships between groups of farm and of health types.

RESULTS AND DISCUSSION

Four farm types were identified according their health status. Type 1 – (11.5%) is characterized by low health disorders incidence. Type 2 – (18.8%), is characterized by high incidence for specific reproductive disorders. Type 3 – (38.7%) is characterized by high incidence of calf disorders. Type 4 - (31.0%) is characterized by high incidence of all health disorders (Table 1).

Table 1 - Health disorders mean incidence (%) in the four types of farm health status

Health disorder	FARM HEALTH STATUS TYPE			
	1 (n = 19)	2 (n = 31)	3 (n = 64)	4 (n = 51)
ABORTION	0.0	14.5	1.3	7.8
Dystocia	0.0	3.2	0.0	3.7
Diarrhea	2.1	1.7	10.7	12.6
Endoparasitism	1.2	2.8	6.9	15.6
Ectoparasitism	3.0	5.9	10.8	26.7
Inappetence	1.2	2.3	4.7	5.7
Leanness	0.4	5.7	7.9	13.5
Mortality (young)	2.0	3.2	8.9	18.8
Mortality (adult)	1.0	1.8	1.0	5.6
Placental retention	0.0	7.7	1.4	9.5
Plant Intoxication	2.1	4.8	1.4	6.9
Skin injuries	0.0	1.9	0.0	3.5
Teat injuries	0.2	0.6	0.4	4.8

The demographic and management variable modalities significantly associated ($P<0.10$) to farm Type 1 were: farm location (Belém region), herd size (100 to 200 heads), pasture type (unique cultivated), number of plots (more than 20), vaccination (against all regional diseases), salt supplementation (regularly), helminth control (strategic), ectoparasites control (regularly) calf health management (yes). The variables significantly associated ($P<0.06$) to farm Type 2 and 3 were: farm location (low Amazon River), herd size (less than 100 heads), pasture type (floodable native and cultivated), number of plots (non parceled), vaccination (unique the obligatory), salt supplementation (no), helminth control (sporadic), ectoparasites control (sporadic) calf health management (no). The variables significantly associated ($P<0.12$) to farm Type 4 were: farm location (Marajó island), herd size (100 to 200 heads), pasture type (unique native), number of plots (1 to 5 plots), vaccination (sporadic), salt supplementation (sporadic), helminth control (sporadic), ectoparasites control (sporadic) calf health management (no).

The results confirm the previous hypothesis recorded by (3): there are strong relationships between farming systems and herd health status, and it must possible to evaluate and to characterize the risks of health disorders linked to type of farms. In Amazon buffalo farming, health problems tend to be more frequent in extensive farms specially located in Marajó island. Reproductive and calf disorders are more frequent in farm with floodable native pastures and without salt supplementation. Farms health conditions change from year to year according to environmental conditions. Similar results have been observed by other authors (1, 3, 4, 5, 6).

This study has developed hypotheses for environmental factors associated with health disorders in buffalo raised in Amazon farms. The results confirm the relationships between management practices and herd health status. The additional effects on health status due to the occurrence of health disorders were dependent upon the nature of the buffalo diseases and the farmer experience. Further research is needed to investigate more detailed the theme.

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