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Participatory surveillance of livestock and poultry diseases in Agidi development area of Nasarawa state Nigeria

A. Bala^{a,*}, L.U. Muhammad^a, P.K. Dachin^a, M.A. Saulawa^b, S.A. Anzaku^c, A. Abdullahi^b, P. Samuel^b, V.I. Ifende^b

^aNational Veterinary Research Institute, Vom, Plateau State, Nigeria

^bFaculty of Veterinary Medicine, UsmanuDanfodiyo, University Sokoto, Nigeria

^cFederal Livestock Department (FLD), Abuja, Nigeria

*Corresponding author; National Veterinary Research Institute, Vom, Plateau State, Nigeria; Tel: +2348039731300

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ABSTRACT

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A participatory surveillance of livestock and poultry diseases was carried out in Agidi Development Area of Nasarawa State among 123 farmers, 29 of the respondent were female, while 94 were male. Open-ended interviews were utilized where necessary to clarify information that needed clarifications by the respondents; physical examination of the some affected animals and it surroundings were carried out during the surveillance. The following diseases were established in the study area: Peste des peptits ruminants, Foot rot, helminthosis, mite/lice/flea infestation, tick infestation, bloat, Orf (Contagious ecthyma), poison, mange, Newcastle disease, fowl pox, coccidiosis, infectious bursal disease (Gumboro), chronic respiratory disease, African Swine Fever (ASF), abortion, Dystocia, sudden death, foot and mouth disease, Fascioliasis, trypanosomosis, black quarter disease, babesiosis, and wounds. Some of these diseases have specific period (season) of outbreak, while some occurs at all season. Analysis of data indicated that Newcastle disease was the most important disease of poultry, Peste des peptits ruminants was the disease that lead to high mortality in small ruminants, while African Swine Fever (ASF) is the most devastating disease of pigs, and Lice/flea infestation is the most common disease to poultry, small ruminants and pigs, in the study area.

1. Introduction

There has been an increased in recognising the important of livestock diseases in the recent years by the rural poor because of the devastating effect of these disease on their animals, more than 70% of the rural poor depend on livestock for their livelihood (Livestock In Development (LID), 1998). Most of the livestock development project in the past focus on disease control and the introduction of new technologies such as equipment or management practises, breed of livestock and fodder plant, this lead to little information on the impact of livestock diseases on the poor households or need, about the differing needs of the poor as consumers of animal healthcare (Heffernan and Misturelli, 2000).

There was better understanding on the diseases of animals that exist on a community through the use of participatory rural appraisal; this method is an emerging field that is based on the use of participatory techniques for harvesting qualitative epidemiological intelligence, through community observations, existing veterinary knowledge, and traditional oral history (Schwabe, 1984). This method can be used to design a better animal health project and delivery system, with more emphasis on local analysis and action with communities (Chambers, 1994). Veterinarians started using participatory methods in 1980s (Leyland, 1991), particularly in community-based livestock projects in Africa and Asia (Catley, 2000; Alders and Spradbrow, 2001).

The main objective of this study was to determine the animal health problems and their season of occurrence in Agidi Development of Nasarawa State.

2. Material and methods

2.1. Study area

Nasarawa State falls within the guinea savannah agro-ecological zone, and is found between latitudes 7°52'N and 8°56'N and longitudes 7°25'E and 9°37'E, respectively. Annual rainfall figures range from 1100 to 2000 mm. The mean monthly temperatures in the State range between 20 o C and 34 oC (Lyam, 2000).The State is bounded on the north by Kaduna, on the east by Plateau, on the south by Benue and on the west by Kogi and the FCT. The state has a total human population of about 1,207, 876 (NPC 2006) and the vegetation is Guinea Savannah which is conducive for farming and raring of livestock. The state consists of 13 local government areas within three senatorial districts. One of the Development Area of the State was selected randomly. This Development Area is among those where livestock are raised in high population.

2.2. Research team and PRA method

A multidisciplinary research team consists of a veterinarian, extension agent, a sociologist, economist, and other animal health workers. The interpreter was among the veterinarian, he is of the same tribe with the community (Eggon), and two of the Animal health workers were Fulani by tribe. The contact was fist established by one of the veterinarians who represented the National Veterinary Research Institute at the monthly Technology Review Meeting (MTRM) organised by Nasarawa State Agricultural Development Project (NADP) which was held at Agidi Development Area. A date and time were arranged at the convenience of the farmers after the MTRM. A PRA topical guideline was prepared as a semi-structured interview consisting of the following points: introduction on purpose of the meeting and visit; presentation of the team; presentation of individual farmers present; questions on type animal reared and the breed, number of animals in the herd or flock, system of management, type of diseases affecting the animals, type of external parasite found on the animal's body, clinical sign of the disease, period of disease outbreak, type of treatment given to the sick animal, type of vaccination given to healthy animals, availability of veterinary services, and direct examination of the animals by the team.

2.3. Statistical analysis

Data were entered in Microsoft Office Excel program. They were cleaned and analysed using Statistical Analysis Software Graph pad Instat statistical packages. Descriptive analysis using tabulation.

3. Results and discussion

Infectious and parasitic diseases of animals are major constraints in animal productivity and profitability in many developing countries, and it is a threat to food security in such a way that it reduces farm incomes directly and indirectly. Directly through losses in production and stock as well as forcing farmers to spend money and labour on their control, and indirectly by restrictions of export of animals and animals products (FAO 2003). Most of the disease outbreak in developing countries may be due increased movements of livestock, livestock products, and people from one place to another (FAO, 2003).

Farmers are well familiar with animal diseases and they have the names in their local languages which are best understood by the ethnic group and at times they described the disease. Some diseases have specific period of outbreak (seasonal), while some occurs throughout the year (it is not seasonal). In the study area, only few individual seek for veterinary services, because most of the farmer are either not aware of the veterinary services or they cannot afford the cost of veterinary services. Most of the diseases mention by farmers in the study area can be prevented through vaccination, good management practice, and proper biosecurity, while some can be treated, but because of lack of these measures, that may be the cause of outbreak of most of these diseases mentioned by farmers. Farmers' complaint of increase incidence of the following diseases during raining season in the area: dermatophilosis, foot rot, coccidiosis, tick infestation, babesiosis, and chronic respiratory disease.

All the farmers that are keeping small ruminant in the study area are practising intensive system of management during raining season and extensive during dry season (Seasonal confinements), most of the diseases mention by farmers in the study area occurs in all season of the year except PPR, and bloat which are seasonal. They experience bloat mostly when the animals get access to grains and it occurs mostly during harvesting period of maize, guinea corn, beans, and millet in the area.

Table 1

Distribution of diseases common in small ruminants (goats and sheep) as mention by farmers (n=111).

Disease/parasite	frequency	percentage(%)	period of outbreak
Peste des peptits ruminants (PPR)	110	99.1	March to July
Foot rot	62	55.9	April to November
Helminthiasis	99	89.2	January to December
Lice/flea infestation	111	100	January to December
Tick infestation	50	45	January to December
Bloat	43	38.7	September to May
Orf (Contagious ecthyma)	37	33.3	January to December
Poisoning	43	38.7	January to December
Coccidiosis	49	44.1	January to December
Mange	49	44.1	January to December

Table 2

Distribution of diseases common in poultry (local and commercial) as mention by farmers (n=123).

Disease/parasite	frequency	percentage(%)	period of outbreak
Newcastle disease	123	100	November to May
Fowl pox	25	20.3	January to December
Coccidiosis	37	30.1	January to December
Infectious bursal disease	8	6.5	January to December
Lice/flea infestation	62	50.4	January to December
Chronic respiratory disease	6	4.9	January to December

Table 3

Distribution of diseases common in pigs as mention by farmers (n=93).

Disease/parasite	frequency	percentage(%)	period of outbreak
Mange	6	6.5	January to December
African Swine Fever (ASF)	74	79.6	December to April 2010
Abortion	15	16.1	January to December
Mite/flea infestation	50	53.8	January to December
Dystocia	30	32.3	January to December
Sudden death	42	45.2	January to December

Table 4

Distribution of diseases common in cattle as mention by farmers (n=20).

Disease/parasite	frequency	percentage(%)	period of outbreak
Foot and mouth disease	4	20	January to December
Helminthiasis	13	65	January to December
Dermatophilosis	2	10	January to December
Tick infestation	13	65	January to December
Trypanosomiasis	13	65	January to December
Fascioliasis	10	50	March to July
Black quarter disease	3	15	March to May
Babesiosis (red water)	6	30	January to December
Flies worry	13	65	March to July
Wound on the body	13	65	January to April

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