ECTOPARASITES INFESTING LIVESTOCK IN THREE LOCAL GOVERNMENT AREAS (LGAS) OF NASARAWA STATE, NIGERIA.

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INTRODUCTION

Ectoparasites are organisms that live on the surface of bigger animals upon which they depend for food, shelter and other basic needs to survive (Rechav & Nutall, 2000). It has been observed that ectoparasites do not only have direct effects on their host, they may also transmit pathogens, thereby acting as vectors of diseases (Parola et al., 2001). Ectoparasites generally affect the health of animals and the quality of hides and skin. The leather industries have suffered great loses over the years because of infestation of animal skin.

Ticks are blood sucking ectoparasites of mammals and birds. About 850 species of ticks have been described worldwide (Furman & Loomis, 1984; Vredede, 2002). Two main families of ticks include the koxid (hard) ticks and Argasid (soft) ticks. They are known to transmit the widest variety of pathogens of any blood sucking arthropods such as bacteria, rickettsiae, protozoa and viruses (El-Kammah et al., 2001). They are also reported to transmit pathogens that causes some human diseases such as Lyme diseases, ehrliciosis, babesiosis, Rocky Mountain spotted fever, tularemia and tick born relapsing fever (Solomon & Mallaw, 2001; Parola et al., 2001). Campell & Lasley, (1985) observed that ticks were capable of causing tick paralysis in children.

In Nigeria ticks are the most important ectoparasites of farm livestock because of their heavy rate of infestation causing significant damage to hides and skin as well as transmitting diseases to their host. Amuta et al., (2010) reported high prevalence of Sanguineus rhipicephalus (80.5%), Boophilus annulatus (14.6%), Hyloma trucatus (4.7%) infesting dogs in Wurukum, Makurdi, Nigeria. Stachurski & Lancelot (2006) picked up 90% of adult Abylonyms vanegateum in cattle when the animals returned from pasture in the evening. El-Kammah et al., (2001) reported that an average daily infestation of about 50 engorged Boophilus tick is capable of causing substantial loss in dairy product and beef. Knipling & Steelman (2000) stated that Boophilus annulatus can spread cattle tick fever and Texas fever from one cattle to another. The large numbers of ticks seen on cattle, sheep, goat, horses and camels have been contributed to their methods of grazing (Iwuala & Okpala, 1978; James-Rugu & Iwuala, 2002).

Blood sucking lice and tick infestation have been incriminated in causing anaemia, abortion, lower milk production, stunted growth, general unthriftiness, respiratory disease and death of livestock (Hungerford, 1984). Both fleas and lice are known to cause havoc to livestock through sucking of blood leading to anaemia, abortion, lower milk production, respiratory disease and discomfort. This study therefore provides preliminary information on the prevalence of common species of ectoparasites of livestock in Nasarawa State, Nigeria.

This study was conducted on livestock from three local Government Areas (LGA) of Nasarawa State, namely Keffi, Karu and Kokona. The State lies between latitude 7° 45N and 9° 25N of the equator and between longitude 7° 37E and 9° 37E, and shares boundaries with Kaduna State in the North, Plateau State in the East, Taraba and Benue in the South while Kogi and the Federal Capital Territory Abuja are in the West (Akwa et al., 2007). Two villages were selected from each LGA: Pyanku and Angwan Maisuri in Kokona LGA for the study. The selected LGAs are known to harbour large number of Fulani herdsmen.

Survey of Ectoparasites: Two species of fleas (Ctenocephalides and Xenopsylla cheopis) have been reported to parasitize livestock especially goats in Nigeria (James-Rugu & Iwuala, 2002). Mites cause a lot of damage to hides of livestock by denuding the hair of the hides and forming scabs on the hide. They are also responsible for predisposing the animal to bacterial and fungal infection and other parasitism including screw worm attack caused by wounds due to bites in the animal skin with gross infestation (Hungerford, 1984).

It was observed that livestock (Cattle, sheep and goats) were infested by ticks, fleas, lice and mites in all the six villages. It made up the three LGAs. Prevalence of tick infestation on cattle (73.3%) was common than in sheep (49.5%) and in goats (39.3%) in this study (Table 1). Chi-square statistical analysis showed no significant difference (p > 0.05) in the distribution of ticks, fleas, lice, and mites in the six villages.

In this study ticks were the most common ectoparasites found infesting livestock. They were observed in all parts of the animals especially around the ears, trunk, legs, tail and the perineum. Overall, the following tick species were encountered: Amblyoma...
variegatum (22.3%), Amblyoma lepidum (9.8%), Boophilus annulatus (9.0%), Boophilus decoloratus (10.5%) and Hyalomma truncatus (5.3%). It was also observed that mixed infestation accounted for 46.7% (Table 2). Based on location, ticks infestation was more serious on cattle 311 (77.8%), followed by sheep 250 (62.5%) and lastly goats 180 (45.0%) in Kokona LGA. Infestation with fleas in the same area followed a similar pattern; cattle (55.5%), sheep (46.8%) and goats (35.3%).

An overall mixed infestation rate of 47.8% by lice was recorded on livestock in the study area. Two species of lice Linognathus vituli (long nose) and Haematopinus euryturus (short nose) made up 15.0% and 16.9% of the infestation. Lice infestation by location indicated the highest prevalence of 47.5% in Karu LGA in cattle, 37.3% in Keffi LGA in sheep and 21.8% in Keffi LGA in goats (Tables 1 and 3).

The observation of high prevalence of ectoparasite infestation with no statistical significant difference between locations in this study is in agreement with the work of Iwuala & Okpala (1978), who reported higher ticks infestation on cattle, followed by sheep and goats. Goats are known to graze less and graze just within the home compared to sheep and cattle that graze far into the bush hence come in contact with more vegetation and subsequently more ectoparasites. James-Rugu & Iwuala (2002) recorded infection rate of 63.2% on adult animals and attributed this to contact due to their large body size and feeding on vegetation on which the ticks were attached. They also believe that adults and adolescents cattle, sheep and goat were always the preferred host for ticks’ infestation than the young animals without any consideration of breeds or species.

The findings in this study also bore similarities with that of Stachurski & Lancelot (2006) who recorded about 90% Amblyomma variegatum infestation on cattle attached to interdigital areas as they return in the evening from pasture. In a related development Amuta et al., (2010) reported high prevalence of tick infestation in dogs in Makurdi due to Rhipicephalus (80.5%), Boophilus annulatus (14.6%) and Hyalomma truncatus (4.7%). High ectoparasite infestation has been associated with serious damage to hide and skin and is capable of destroying the milk and beef industry. The infestation by ticks is capable of causing bacterial and fungal infestation and other forms of parasitism like screw-worm attack due to wounds emanating from tick bites in the animal skin. The ticks, fleas, lice and mites are capable of reducing the market value and the products produce from the hides and skins of these animals.

At the end of the study health education was conducted for all live stock keepers within the studied LGAs. They were advised to use simple disinfectants like dettol or izal to treat wounds on their livestock. The uses of acaricides were also demonstrated and live stock owners were directed to obtain such chemicals in National Veterinary Research Institute Vom, Plateau State. Follow up showed a considerable reduction in rate of infestation by the ectoparasites.

The result of the study indicates that cattle, sheep and goats were infested by ticks, fleas and lice in the three LGAs investigated. The economic and health implications of these ectoparasites are enormous, deserving urgent attention by Government, policy makers and nongovernmental organizations to give the farmers better value for their livestock.

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