

Short Communication

A survey of common toxic plants of livestock in Sokoto State, Nigeria

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Through structured questionnaire, two hundred livestock farmers and veterinary attendants were interviewed on various aspects of poisonous plants in Sokoto State. Forty one (41) poisonous plants were reported to exist in the state. They include *Ipomea asarifolia* (Duman kada), *Sorgum bicolar* (Bahuri), *Erythrophleum africana* (Samberu), *Calotropis procera* (Tumfafiya) and *Mannihot esculenta* (Kunnen rogo). Majority of the plants are found in the grassland and are shrubs. Leaves stem and bark are the major parts of the plants that are poisonous when consumed by livestock.

Key words: Toxic plants, Livestock, Sokoto, Nigeria.

INTRODUCTION

Plants comprise the third largest category of poisons known around the world. They form a major part of livestock feed, thus toxicosis in animals consuming these plants can be expected. It is also known that poisonous plants constitute a major cause of economic loss in livestock industry since the days of early settlement (Clarke and Clarke, 1977). This loss may be in form of mortalities, loss of production, veterinary service fees or a combination of two or more of these losses (Oguwag, 1977). These plants affect animals in many ways although symptoms and lesions differ depending on the amount of the plant consumed. The common symptoms however include death, chronic illness and debilitation, decreased weight gain, abortion, abdominal discomfort, salivation, congenital defects, photosensitization (Clarke and Clarke, 1977). These symptoms have been attributed to toxic principle in such plants, which range from nitrates, oxalate, fluoroacetate, selenium etc.

Sokoto state is one of the major livestock producing states in Nigeria and second largest in terms of cattle production (William et al., 2000). Most of the livestock in the state are kept under semi-intensive or extensive

systems of management making them susceptible to poisoning by toxic plants. With increasing human activities such as construction, farming, deforestation and other forms of environmental degradation, which affects the fauna and the flora, it becomes very important to re-assess common poisonous plants found in the state. This study therefore was conducted to survey the common toxic plants in the state.

MATERIALS AND METHODS

Sokoto state is located between latitude 12 - 14° and longitude 4 - 6°E in the Sudan savanna zone of Nigeria. The rainy season starts in June and ends in September (Abdul et al., 1982). The temperature is generally high with the average maximum of 40°C in April. Temperature remains high in the day during harmattan, but the nights are very cold (Udu, 1981).

Sokoto state with 23 Local Government Areas (LGAs) has 4 agricultural zones viz Sokoto, Gwadabawa, Isa and Tambuwal zones. Two LGAs were randomly selected from each of the above agricultural zones of the state. In Sokoto zone, Kware and Wurno LGA, Isa zone, Sabon Birni and Goronyo LGAs, Gwadabawa and Silame LGAs in Gwadabawa zone and Kebbe and Shagari LGAs from Tambuwal zone.

A total of two hundred questionnaires were administered in these 8 randomly selected LGAs with each having twenty five respondents. Five in each of these LGAs were administered to veterinary attendants and 20 to livestock farmers. The data collected were collated and analyzed using descriptive statistics, such as percenta-

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Table 1. Habitat of poisonous plants and their poisonous parts in Sokoto state.

Local names (Hausa)	Botanical names	Poisonous part(s)	Common habitat(s)
Tumfafiya	<i>Calotropis procera</i>	1, 2 and 5	Range/farmlands
Samberu	<i>Erythrophleum Africana</i>	1, 2 and 6	Range/farmlands
Tururrubi	<i>Lasiosyphon krausii</i>	2 and 6	Range/farmlands
Duman kada	<i>Ipomea asarifolia</i>	2, 5 and 6	Range/farmlands
Hankuwa		2 and 6	Range/farmlands
Bahuri	<i>Sorghum bicolar</i>	2, 5 and 6	Range/farmlands
Rai dare	<i>Cassia occidentallis</i>	2, 5 and 6	Range/farmlands
Dangere	<i>Indigofera hirsute</i>	2, 3 and 6	Range/farmlands
Chini da zuga	<i>Jatropha ncurcas</i>	2	Range/farmlands
Kunnen rogo	<i>Mannihot esculenta</i> (Leaves)	2, 3 and 5	Range/farmlands
Aguwa	<i>Euphorbia sepium</i>	2, 4 and 6	Range/farmlands
Tafasa	<i>Cassia tora</i>	2 and 5	Range/farmlands
Balasaya	<i>Commelyna nudiflora</i>	2 and 6	Range/farmlands
Godia		2 and 5	Range/farmlands
Tsaida	<i>Tribulus terrestris</i>	2, 5 and 6	Range/farmlands
Gabara	<i>Arundo donax</i>	2 and 6	Range/farmlands
Danba		6	Range/farmlands
Garmani	<i>Sida cordifolia</i>	1, 2 and 4	Range/farmlands
Aduwa	<i>Balanites aegyptica</i>	1 and 2	Range/farmlands
Harwatsi	<i>Mitracorpum scabrum</i>	2	Range/farmlands
Diyan duma	<i>Legenaria vulgars</i> (seed)	1	Range/farmlands
N/mijin yar aguwa	<i>Gymandropis pentrapylla</i>	2	Range/farmlands
Baba jibji	<i>Datura metel</i>	1, 2, 4 and 6	Range/farmlands
kwasare		1	Range/farmlands
Garafuni	<i>Cardiospermum halicacabum</i>	2 and 5	Range/farmlands
Tubuttubudi	<i>Ambrosia maritime</i>	2 and 6	Range/farmlands
Tumnin jaki	<i>Paspalum scarbiculatum</i>	6	River banks/ water point.
Kyara	<i>Gypogon reprechtii</i>	2	Range/farmlands
Diyan faru	<i>Ordina bertari</i> (seed)	1	Range/farmlands
Bado	<i>Nymhaea latus</i>	2	River banks/ water point.
Diyan gawo	<i>Faidherbia albida</i> (seeds)	1	Range/farmlands
Danyi	<i>Centaurea calcitrapa</i>	1, 2 and 5	Range/farmlands
Garohi		2 and 5	Range/farmlands
Gadon maciji	<i>Trianthema monogyna</i>	2 and 5	Range/farmlands
Sururu		2	Range/farmlands
Zurma	<i>Ricinus communis</i>	2	Range/farmlands
Kiryra	<i>Prosopis obloga</i>	2 and 6	Range/farmlands
Kacau		2	River bank/ water point
sharabuni		2	River bank/ water point
Karangiya	<i>Cenctharficus</i>	2	River bank/ water point
Kimbar maharba	<i>Lantana camara</i>	2 and 6	River bank/ water point

*1, Seeds; 2, leaves; 3, bark; 4, juice; 5, stem; and 6, whole plants.

ges and frequency (Gomez and Gomez, 1984).

RESULTS AND DISCUSSION

The results revealed a total of 41 toxic plants in Sokoto state (Table 1). These include *Ipomea asarifolia* (Duman kada), *Sorghum bicolar* (Bahuri), *Erythrophleum africana* (Samberu), *Calotropis procera* (Tumfafiya) and *Mannihot esculenta* (Kunnen rogo). It is noteworthy that *I. asarifolia*

was reported in all the agricultural zones and local government sampled while many others were not reported in some agricultural zones and local government. Overall, 95.4% of the plants are found around farm/range lands particularly the most commonly reported species and 4.6% are exclusively found around river banks and water points. The result also revealed that 15.8% of the respondent attributed the poisoning by plants to trees, while 84.2% of the respondents claimed that most of the plants

involved are shrubs. However the status of the individual plants in this regard was not as-certained. The most common part of the part of the plants that causes poisoning when consumed by livestock varies according to farmers' perspective. However, there was a general agreement (over 70%) that poisoning oc-cur mainly when leaves and barks are eaten.

Many of the plants in this study have been reported else where in the world as in the case of the report of *Lantana camara* and *Datura* species in Swaziland (Ogwang, 1997). Previous study also reported the existence of some of these poisonous plants in Nigeria, particularly Borno, Kaduna, Lagos, Anambra and Zamfara states. Such poisonous plants earlier reported in these states include *Cassia occidentalis*, *C. procera* and *M. esculenta* (Akubundu and Agyakwa, 1987).

Although there are as many as 41 species of poisonous plants in Sokoto state, cases of plants poisoning are uncommon among the livestock in the state (Ebbo et al., 2003). This may be because of the familiarity of the herders and their animals with the poisonous plants through prior association (Nwude and Parsons, 1977). The few recorded cases of plant poisoning among the livestock in the state (Ebbo et al., 2003) may be because of hunger and scarcity of feed (Onyeyili et al., 1996). Such few report may be due to proximity of such farmers to veterinary services and besides many such cases may go unreported as they either result in sudden death or salvage by farmers. Although in Sokoto, some of these plants reported to be poisonous are used for food in the case of *M. esculenta* and for food processing as in the case of *C. procera* (Tumfafiya) for cheese processing. It is important to note that the consumed parts are less toxic and increase in the number of poisonous plants in an area is usually a sign of poor management (Ogwang, 1997). Good range management is therefore one of the most effective ways to combat the danger of plant poisoning in an area. Fencing off infested areas and eradication by uprooting may also be effective.

The claim by up to 84.2% respondent that most of these poisonous plants are shrubs and only 15.8% are trees cannot be unexpected as shrubs are more readily available to livestock. Trees are available to them only on few occasions when herdsmen have to climb and cut branches, mostly due to scarcity of feeds.

The result of this study indicates that farmers in Sokoto state consider about 41 plants poisonous to livestock. As this might be the first time such a survey is been conducted in Sokoto on poisonous plants, this study will provide baseline information for other researchers and clinicians. It is in line with this that it is recommended that further research be conducted to investigate the toxic principles in these plants and their toxic effects in laboratory and domestic animals so as to help reduce losses that could result from their poisoning to livestock.

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