“Ethnoveterinary knowledge in Sanaag region, Somaliland (Part II): Notes on local methods of treating and preventing livestock disease”

Andy Catley and Ahmed Aden Mohammed

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Introduction

The VetAid/ACTIONAID Animal Health Programme aimed to offer a primary veterinary service to pastoralists in Sanaag region via a network of trained paravets. Initially the programme supplied the paravets with a limited range of veterinary medicines which were then sold to livestock owners. As the programme developed it encouraged the establishment of private veterinary pharmacies in order to improve the sustainability of the veterinary medicine supply. This approach was based on interviews with herders which showed that they were very aware of the efficacy of modern drugs and were willing to pay for drugs at commercial rates (Catley, 1995). It seemed likely that the presence of VetAid/ACTIONAID in Sanaag had merely delayed the importation of veterinary drugs by local traders.

However, the need for modern veterinary medicines was not felt by all herders. Frequently programme staff interviewed pastoralists who would not use modern drugs even if the drugs were readily available and affordable. These people preferred to use their own traditional methods of treating sick livestock and were often concerned that their animals would become ‘addicted’ to modern drugs.

In order to understand how these herders responded to livestock disease problems information was collected on local methods of veterinary treatment and preventing disease outbreaks. It was hoped that trials could then be conducted to test the efficacy of some of the most widely used remedies. Local plant remedies are usually less expensive and more readily available than imported drugs, and they do not require special storage facilities (McCorkle and Mathias-Mundy, 1992; Bizimana, 1994). Also, published information on traditional veterinary practice among Somali pastoralists is limited.

The information presented in this paper was collected in Sanaag between March 1993 and January 1994. Much of the data was obtained from key informants in Ceeryan, Goof, Raqas, and Erigavo who were reported to be particularly knowledgeable about traditional veterinary practices. Plants were collected and dried or preserved specimens identified at the Royal Botanic Gardens in Edinburgh, Scotland.
Notes on treatment and prevention of animal health problems

The notes are presented according to the Somali descriptions of livestock diseases used by herders which were explained in detail by Catley and Mohammed (1995). The information is summarised in Table 1 and Table 2.

Generalised and systemic diseases

dhukaan, gendhi, suuqiyi (emaciated camels; trypanosomiasis in camels): Traditional treatments for dhukaan included drenching with about 50ml of the sap from dacar (Aloe somelensis) or giving a drench prepared from ostrich eggs. Debilitated animals would also be given maraq (soup) prepared from a goat.

garabgoye, garabiid (blackleg or blackquarter in cattle): This disease was treated by gubis (burning) across the shoulder joint, base of the neck and axilla. Another treatment was cutting deeply into the flesh of the affected area, a procedure which was thought to allow air into the diseased tissues and promote healing.

kud (sudden death, anthrax, clostridial disease, pasteurellosis and others): Local remedies for kud included tying stones collected from Mecca, called dhagax kud around the neck of affected animals. These stones were believed to possess holy powers. Affected animals were also be washed or moved into shade to ease the fever.

Diseases of the mouth and abdomen

calaacul (leeches): Leeches were removed physically from their site of attachment, if accessible, or milix (salt) was applied to the leech. Buuri (tobacco washes, Nicotiana tabacum) and basbaas (hot peppers, Capsicum annuum) were also used. In some areas small catchment sites were constructed which receive water via a channel with a cloth or grass filter to remove the leeches.

caal (poor body condition, helminthiasis): There were many traditional remedies for caal in Sanaag:

- The roots of the plant harmanle (Gnidia somalensis) were crushed and mixed with water. A dose of 60ml of this solution was used for an adult sheep.
- The leaves and twigs of the plant qohda (Acacia spirocarpa) were crushed and mixed with water. A dose of 2 tea cups was used for sheep and goats.
- The soft fleshy roots of the plant mawe (Moringa sp.) were chopped and mixed with water. A dose of 0.5 litre was used for an adult sheep.

- Assal, the bark of galool (Acacia bussei) was mixed with water and left overnight before drenching.
- Similarly, the leaves of salamac (Cadia purpura) were crushed into water and left overnight before drenching.
- Maraq (goat soap) was used as a drench. This was believed to be beneficial because goats consume a wider variety of plants than other livestock.
- Animals were fed milix (salt) or watered at wells with salty water.
- The tree higlo (Cadaba heterotricha) was thought to have anthelmintic properties when grazed by camels. Sometimes the leaves were crushed and mixed with water, and the solution used as a drench.

daab (diarrhoea in young stock): Treatment for daab could involve starving the animal or feeding sour milk. Some herders used gubis (burning) on the abdomen of the affected animal. One form of daab called daab geedood occurred when young animals first began to graze. This condition could also be treated by drenching with biyo baris (the water from boiled rice) or solutions prepared from assal (the bark of Acacia...
bussel) or shaah (tea leaves).

dabahawiye (diarrhoea in camels): Dabahawiye was treated with maraq, a sheep or goat broth.
cifasho (bloat, distended abdomen): The treatment for cifasho was puncturing the left side of the abdomen to allow the escape of gas from the distended area.

Respiratory diseases

ah (mild respiratory disease in camels): The remedy for ah was to administer maraq ugaadheed, a soup or broth prepared from the carcass of a wild animal such as a dikdik or gazelle. Another remedy involved burning the skin of a wild animal in the pen of the sick camels so they inhaled the smoke. The process of inhaling smoke or vapours was called uumas. The third remedy was to boil the resin of galool (Acacia bussel) in water and administer this as a drench.

jibaax (coughing in young goats and cattle)
laxawgal (mild coughing in camels)
oofmud (coughing in sheep): The local remedy for jibaax, laxawgal and oofmud was gubis (burning) on the skin of the thorax, often in a X-shaped pattern.

sambab (severe respiratory disease in goats, contagious caprine pleuropneumonia, CCPP): Local ‘vaccination’ practices for sambab consisted of cutting the nose of a healthy goat and inserting a piece of fat or lung from a goat which had died from the disease. The area on the nose was then burnt with a hot iron.

sangaale (nasal myiasis): The disease sangaale was treated by removing the parasites manually from their site of attachment in the nasopharynx. However, the parasites were often inaccessible and in these cases a solution of buuri (tobacco, Nicotiana tabacum) was poured into the nose and mouth.

Diseases of the reproductive system

amda hanun (breast pain/mastitis)
candhobarbar (swollen udder/mastitis): The sap of the plant dhalama dhuxx, also called faradheere (Entada abyssinica) was applied to the udder.

faraati (vaginal prolapse): Herders were able to replace vaginal prolapses manually and prevented reprolapse, by suturing the vulva.

mandheer noqosho (retained afterbirth): Retained placentae were removed manually.

Diseases of the nervous system

indo hanun (painful eyes, conjunctivitis)

indo jebiye (closed eyes): Eye diseases were treated by soaking the leaves of the plant irmaan riije (Commicarpus ambiguus) in water and then bathing the eyes with the solution.

muglo (tick paralysis in camels): Camels affected by muglo were moved into the shade or washed with water to reduce fever and ticks were removed by hand. If large numbers of camels were affected or seemed to be at risk from muglo they were moved to less tick infested areas, sometimes using trucks.

Diseases of the musculoskeletal system

boog (footrot, foot wounds, foot abscesses, lameness): A number of treatments were used for boog in sheep and goats:
- If a wound or abscess was present, the area was cleaned with milix (salt) and water.
- The gland between the toes was removed and the wound counterised, gubis.
- The milky sap or dheecaan of the plants dharkeyn (Euphorbia robehii),
dhalaama dhuux (*Entada abyssinica*) or ugaab tahays (*Caralluma somalensis*) was applied undiluted to the diseased area.

- The flowers of *ugaab tahays* (*Caralluma somalensis*) were also used as a remedy. These were burnt and the ash applied to wounds or other lesions on the feet.
- The plant *bogoh ujeed* (*Euphorbia hadramautica*) was used to treat boog in two ways. It was be tied as a charm around the neck of the animal while quoting verses from the Koran, or the sap from the plant was applied to the diseased area.
- The leaves and twigs of the plants *shanboogsiye* (*Solanum nigrum*) were burnt, crushed and applied to the feet.
- Extracts of ground seeds of kariiri bush (*Solanum somalense, Solanum coagulans*) were applied to lesions.
- Burnt and dried *dacr* (*Aloe somelensis*) leaves were applied to the lesions.
- *Assal*, the bark of galool (*Acacia bussei, Acacia horrida*), was boiled and the liquid applied to the feet.
- Ticks were removed by hand if associated with boog.

**mal** (joint-ill, septic arthritis): Herders believed that mal was caused by poor blood supply to the affected joint and local treatment was *gubis* (burning).

**shimber** (wry-neck syndrome in camels)

*guudaan*: The treatment for wry-neck syndrome was extensive branding of the neck.

**Skin diseases**

**cadho** (mange): Many of the local remedies for cadho in Sanaag were based on the milky saps of Euphorbia species, such as *darkeyn* (*Euphorbia robecchii*), *falanfalho* (*Euphorbia somalensis*) or *cinjir* (*Euphorbia gossypina*). For mange in camels the sap was used undiluted and was usually applied after the affected areas had been abraded with a stone until the skin bled. The camels were cast and tied for this procedure. For sheep and goats the skin was considered to be more fragile than that of camels and the sap diluted by varying degrees depending on the plant used. If *darkeyn* was used the dilution may be as high as 1:1000.

Other remedies for cadho included:

- Boiling the seeds of *kiriiri* (*Solanum somalense, Solanum coagulans*) with camel urine and the black sap of *quraq* (*Acacia tortilis*). The hot mixture was applied to skin.
- The roots of the plant *gogbood* (*Iphonia rotundifolia*) were crushed and mixed with water. The solution was applied to skin which had been abraded with a stone.
- The gum found in the large caves in the northern mountains of Sanaag was called *habag god*. The gum was rubbed on to the lesions of cadho after abrading the skin with a stone.
- Saturated salt solution was also used to treat cadho. For example the well at Bohol in El Afweyne district was reknowned for it’s salty water and herders would travel there to treat their camels for cadho.
- The wood of the tree *garas* (*Dobera glabra*) was burnt and the ash applied to the skin.

**cambaar** (skin disease in sheep and goats, ringworm in camels): Local remedies for cambaar included:

- Rubbing burnt dung on to the skin, sometimes with soap.
- The sap of the plant *darkeyn* (*Euphorbia robecchii*) was heavily diluted with water, boiled and cooled. On cooling, a gelatinous film formed on the surface of the solution and this was rubbed into the skin.
- Goat or sheep broth maraq or ghee, was applied to affected areas. These remedies contain high concentrations of
dufan or fat, and it was this ingredient which was believed to be beneficial.
- Washing affected area with detergent and water.
- Rubbing leaves of baskalax (Zygophyllum decumbens) on affected areas of skin.

dhaleeco (contagious skin necrosis of camels): A local remedy for dhaleeco was dressing the wound with the sap of the plant gowracato (Caralluma socotranensis).

dibeeche, injir (lice infestation): Solutions prepared from the leaves and twigs of salamac (Cadia purpura) were used to wash affected animals.

furq (sheep and goat pox; camel pox; orf): Remedies for furq included the tying of ‘secret’ plants around the neck of an affected animal while reading verses from the Koran. One such plant was called faradheer (Entada abyssinica). Many herders knew that furq was prevented by vaccination. Animals suffering from furq were not allowed to visit wells or mix with healthy animals.

shilin (ticks, tick infestation): The most common method of controlling tick infestation was removing ticks by hand. The plants jinaw (Commiphora rostrata), baskalax (Zygophyllum decumbens) and dacar (Aloe somelensis) were also rubbed on to the main infestation sites to kill ticks.

xaqiqato (enlargement of the pedestal pad in camels): Treatment for this condition was to trim the enlarged pedestal pad with a knife.

Non-specific religious remedies

cashar: was a type of traditional remedy where a group of men sat around a bowl of water and periodically spat into the bowl while reciting verses of the Koran. The water was then poured over sick animals. This procedure tended to be used for serious outbreaks of disease such as sambab or furuq when large numbers of animals were affected.

xirsi: was a Koranic text worn as an amulet around the neck of animals or man which was believed to protect the wearer from disease and ill-fate. The word qardhaas was occasionally used in place of xirsi.

Methods of preventing livestock disease

In addition to the remedies detailed above pastoralists in Sanaag used various methods for preventing livestock disease. For example, the choice of suitable grazing areas was affected by the presence of biting flies or ticks which were known to cause physical damage to stock and transmit disease. At wells there were often specific rules which prevented sick animals mixing with healthy animals and at some wells each family used it’s own pan for watering stock. Within the homestead the thorn or stone enclosure used to house livestock at night (xero) was regularly cleaned to prevent build up of dung which attracted the ticks, particularly Rhipicephalus pulchellus (garabcad).

The use of daran grazing

For the treatment or prevention of worm infection (caal), nasal myiasis (sangaaale) and tick infestation (shilin) many herders in Sanaag grazed their stock on salty, succulent plants called daran. If daran grazing was not available nearby, herders would sometimes move their animals long distances each year in order to graze on daran for a few days. It was the high salt content of the plants which was believed to kill the parasites associated
with these diseases. Other herders linked daran grazing to general good health in their animals rather than to specific illnesses.

Three varieties of daran were recognised called daran cad (Lagenanthe cycloptera), daran dinaas (Suaeda vermiculata) and daran dameer (Limonium sp.). Opinions varied over which of these was the most beneficial. Daran dinaas was thought to have a higher salt content than the others and therefore was preferred for treatment or prevention of caal. Daran cad was thought to be the most nutritious of the three types. Other salty bushes which were used in a similar way to daran were baskalax (Zygophyllum decumbens), xudhun (Suaeda fruticosa), qaro (Cucumis sp.) and carabjeeb (Pennicetum setaceum).

Discussion

During this work traditional remedies for livestock ailments were usually discussed openly by herders and in many areas the various plant remedies were common knowledge. However, in other sites the ability to use plants was restricted to specific individuals who benefitted from treating sick animals. The skills and knowledge of these traditional healers was passed from father to son and was not often shared with the authors.

The notes list more than 70 local remedies for animal diseases, including 32 veterinary medicinal plants. From the summary of remedies detailed in Tables 1 and 2 it was apparent that the most popular local treatments were burning or cauterisation, the use of soups and broths and the use of salt, salt solutions, wells with salty water and salty bushes. In Sanaag broths were given to both debilitated livestock and people and their effect was probably non-specific and supportive rather than curative. For treatments involving burning and cautery it seems likely that any beneficial effect was limited to superficial tissues rather than internal organs. A similar reliance on burning, soups and salt was described over forty years ago by Mares (1954a, 1954b) who also noted that Trianthema crystallina Vahl., Zygophyllum album Linn., and Suaeda species were all called daran by northern Somali. The plant guln (Salsola foetida and Salsola crassee) was said to provide sufficient salt for eight months if grazed by camels for only ten days. The value of salt in the treatment and prevention of skin disease and arthritis in camels was investigated by Peck (1938, 1939) and Hunt (1951) described the distribution of the salt bushes higlo, daran and xudun in the former Somaliland Protectorate.

In addition to the these remedies plants of the genera Euphorbia, Acacia and Solanum were also commonly used to treat sick livestock in Sanaag. Euphorbia species were particularly popular for treating skin diseases such as mange and ringworm. Mares (1954b) noted the use of cinjir (Euphorbia gossypina) latex to treat mange in livestock in northern Somalia and in Dhofar the latex of Euphorbia hadramautica, E.cactus, E.larica and E.smithii was used to treat parasitic skin conditions in camels and goats (Miller and Morris, 1988). In common with Somali, Dhofari herders abraded the skin of the animal before applying the plant sap. Acacia and Solanum species are widely used as veterinary medicines by various pastoral groups throughout Africa (Bizimana, 1994).

Regarding local vaccination practices in Sanaag the method used to control contagious caprine pneumonia was similar to that described for the prevention of contagious bovine pleuropneu-
monia (CCPP) in the former Somaliland Protectorate (Mares, 1951). Scientific opinion on the effectiveness of the technique varies from scepticism because of the risk of increased disease transmission (Edelsten, 1994) to claims that the procedure is effective for the control of CCPP in goats (Baumann, cited by Heuer, 1993).

Following the collection of the information presented in this paper the authors concluded that further research was required in order to identify 'best bet' plant species for use in clinical trials in the field. In particular it was proposed that searches of ethnobotanical and ethnopharmacological literature might reveal specific plant species for which pharmacologically active ingredients had been isolated. These initial searches would focus on the genera Euphorbia, Acacia, Solanum, Zygophyllum, Laganantha, Limonium and Suaeda. The ultimate aim of the animal health programme was to offer herders informed advice on the most appropriate medicine, either local or modern, to use for the main livestock diseases in Sanaag.

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Notes

(1) Somaliland refers to the self-declared independent Republic of Somaliland which geographically is equivalent to the former British Somaliland Protectorate.

References


Résumé

C'est dans le cadre du programme vétérinaire VetAid/ACTIONAID dans la région de Sanaag en Somalie que des informations furent recueillies sur les méthodes locales employées pour prévenir et traiter les maladies du bétail. L'analyse préliminaire démontre que les pasteurs connaissent plus de 70 méthodes et se servent de plus de 30 différentes plantes. Euphorbia, Acacia, Solanum, Zygophyllum, Laganantha, Limonium et Suaeda comptent parmi les plus utilisées. Les auteurs proposent de poursuivre l'enquête afin d'être en mesure de constater leur efficacité.

Resumen

Como parte del programa de sanidad animal “VetAid/ACTIONAID” en la región de Sanaag de Somalia, se ha recogido información sobre métodos locales para tratar y prevenir enfermedades del ganado. Investigaciones preliminares han revelado que los pastores utilizan más de 70 métodos para tratar y prevenir enfermedades, incluyendo estos a más de 30 remedios de plantas. Plantas del género Euphorbia, Acacia, Solanum, Zygophyllum, Laganantha, Limonium y Sueda son las especies usadas más comunes. Para determinar mejor la eficacia de alguna de estas plantas fueron propuestas futuras investigaciones.

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<td>gubis</td>
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<tr>
<td>habag god</td>
<td>gum from caves</td>
<td>worm infection</td>
<td></td>
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<tr>
<td>maraq</td>
<td>soup from goat or sheep</td>
<td>trypanosomiasis – camels worm infection ringworm, skin disease* diarrhoea – camels</td>
<td>daal</td>
<td></td>
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<tr>
<td>maraq ugaadeed</td>
<td>soup from wild animal</td>
<td>respiratory disease – camels</td>
<td>dhukaan, gendhi, suuqiye</td>
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<tr>
<td>milix</td>
<td>salt, salty water</td>
<td>leech infestation</td>
<td>caal</td>
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<tr>
<td>uumis</td>
<td>inhalation of smoke</td>
<td>respiratory disease – camels or vapours</td>
<td>cambaar</td>
<td></td>
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<tr>
<td>xirsi</td>
<td>amulet with Koranic</td>
<td>non-specific</td>
<td>dabahawiye</td>
<td></td>
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</tbody>
</table>

* For this treatment of cambaar the soup was applied to the skin.