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RESEARCH OPINIONS IN ANIMAL & VETERINARY SCIENCES

Traditional uses of medicinal plants for the treatment of livestock ailments in Udigram Swat, Khyber Pakhtunkhwa, Pakistan

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Abstract

The study was conducted during March and September 2012. A questionnaire regarding local name, part used, purpose of uses and local methods of recipe preparation was developed and several field trips were arranged to different localities of the area with respect to blooming seasons of the plants. The study revealed 16 species under 16 genera belonging to 14 families, of which 14 plants were dicotyledons, and 2 monocotyledons. Sixteen species of plants were used for the curing of various livestock health disorders. The detail local uses, local method of recipe preparation and application along with their local name and diseases treated were recorded for each species from knowledgeable and experienced persons of the area. They were used either singly or in combination with other plants or even in combination with sugar, wheat flour and ghee for the treatment of various livestock ailments.

Key words: Medicinal plants; ethnobotany; livestock ailments; treatment

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Introduction

Medicinal plant is any plant or vegetative growth part of the plant i.e., root, stem, leaf, bark, fruit and seed which contains active medicinal ingredients. It produces a definite physiological response in the treatment of various illnesses in human and animals (Sher and Shakespear, 2000).

Medicinal plants are used as a major source of drugs for the treatment of various human and livestock health disorders (Sher and Hussain, 1998). The plant kingdom has immensely contributed to the health needs of man and livestock when no synthetic medicines were available and when no concept of surgical management existed. Even today almost 25% of the prescribe medicine in the developing world contain ingredients derived from medicinal plants (Sher, 2001).

The Eastern system of medicine practices in Pakistan comprising Chinese, Ayurvedic and Greco-Arabic systems have its root in drug of vegetable, animal and mineral origin. Public interest for some special reason at present focused on indigenous herbs. Men of science and medicine are investigating the natural kingdoms to cures diseases. We are encouraged to believe from the results obtain so far, that they will be beneficial. Nowadays, with the comparatively recent introduction of orthodox medicine, use of herbal medicine has somewhat sadly declined and the local people are losing the preservation of traditional knowledge of herbal medicine. Therefore, the present study was initiated and conducted to prepare an inventory of medicinal plants along with their traditional uses for the treatment of various livestock ailments.

Materials and Methods

The study on traditional uses of medicinal plants for the treatment of livestock ailments in Udigram Swat, Khyber Pakhtunkhwa, Pakistan, was conducted during March and September, 2012. Prior to exploring the medicinal plant resources, top sheet, map and other

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general information about the study area was collected form Forest Department District Swat. Accordingly several field trips were arranged into different localities of the area during blooming seasons of the plants.

A questionnaire was used for the collection of information. The questionnaire was divided into two parts. The first part included personal information such as name, locality, age and occupation etc. while second part was specific to the plant such as local name, part used, purpose of uses and local methods of recipe preparation. Throughout the field visit plant were collected and were put in newspapers and a presser was used for the preservation of specimens. The newspapers were being changed from time to time and the dried specimens were mounted on standard herbarium sheets. The specimens were identified with the help of available literature (Steward, 1972; Nasir and Ali, 1971-91).

Results

The study revealed that the inhabitants of the area utilize 16 species of medicinal plants for the curing of livestock ailment. The study showed that some of these species are used for the treatment of single disease of specific animals while several other are used for the curing of multiple diseases of few animals. Similarly few species are used singly while some are used in combination with other plants or items (Table 1).

Veterinary uses of medicinal plants and their formulation

- Group : Monocot
- Family : Liliaceae
- Botanical name : *Allium sativum* L.

  Local name : Oaga
  Part used : Bulblets
  Habit ; Herb
  Local uses : Locally one or two bulblets are mixed with wheat flour and are given to buffaloes and cows to combat anorexia and increase digestion.
- Family : Poaceae
- Botanical name : *Cynodon dactylon* L.

  Local name : Kabal
  Part used : Whole plant
  Habit ; Herb
  Local uses : The plant is crushed to make a paste and is given orally to cattle especially cows and buffaloes for improving the quality of milk and also for increasing the butter production and milk.

  B-Group : Dicot
- Family : Acanthaceae
- Botanical name : *Justacia adhatoda nees*

  Local name : Baikar
  Part used : Leaves
  Habit ; Shrub
  Local uses : The crush leaves are applied externally on wounds of cattle as a healing agent. It is also used to control dysentery.
- Family : Berberdaceae
- Botanical name : *Berberis lyceum* Royle

  Local name : Kwaray
  Part used : Root bark
  Habit ; Shrub
  Local uses : Dried ground root is locally crushed and is given orally to horses, donkeys and cows for improving feeding and general health maintenance.
- Family : Caryophylaceae
- Botanical name : *Stellaria media* L.

  Local name : Oulalai
  Part used : Whole plant
  Habit ; Herb
  Local uses : Locally the plant is mixed with other fodder crops and is considered as appetizer for buffaloes and cows.
- Family : Fumariaceae
- Botanical name : *Fumaria indica*
- (Kusskn) Pugsley.

  Local name : Papra
  Part used : Whole plant
  Habit ; Herb
  Local uses : Decoction of plants is given to all types of livestock for the curing of fever and considered as refrigerant agents. The plant is also mixed with grasses and is used in diarrhea.
- Family : Lamiaceae
- Botanical name : *Mentha longifolia* L.

  Local name : Valaney
  Part used : Leaves
  Habit ; Herb
  Local uses : Dried ground leaves are used locally in bolus form to relieve flatulence.
- Botanical name : *Salvia moorcroftiana* Wall. Ex Benth.

  Local name : Khurdug
  Part used : Leaves
  Habit ; Herb
  Local uses : Fresh ground leaves are given orally for treatment of fever and removal of placenta after parturition.
- Family : Meliaceae
- Botanical name : *Melia azadarach* L.

  Local name : Bakayana
  Part used : Leaves
  Habit ; Fruit
  Local uses : A mixture of the leaves and crushed fruits are used as carminative agent. The abdomen of the cattle like cows, sheep etc during season, especially when they over eaten the *Trifolium repens* swells up due to gases and is fatal,

thus either the leaves or fermented fruits are used to expel the dangerous gases from the belly.

Family : Papilionaceae
- Botanical name : *Lathyrus aphaca* L.

Local name : Korkamanai
Part used : Root
Habit : Herb
Local uses : Dried ground root is given orally for any infection of the body in bolus form with wheat and also administered as an appetizer.

Family : Polygonaceae
- Botanical name : *Rumex dentatus* L.

Local name : Shalkhay
Part used : Leaves
Habit : Herb
Local uses : Fresh ground leaves are crushed and mixed with wheat and are used for the treatment of constipation.

Family : Punicaceae
- Botanical name : *Punica granatum* L.

Local name : Anar
Part used : Rind of fruit
Habit : Shrub
Local uses : The rind of fruit is locally mixed with wheat flour and is given internally in bolus form for removing intestinal helminthes.

Family : Scrophulariaceae
- Botanical name : *Verbascum thapsus* L.

Local name : Khudug
Part used : Leaves
Habit ; Herb
Local uses : The fresh leaves of the plant are given orally for the treatment of diarrhea and dysentery of cattle.
- Botanical name : *Veronica anagalis aquatic* L.

Local name : Poherbotay
Part used : Young shoots
Habit ; Herb
Local uses : The decoction of the shoots is given to goats and sheep to cure fever and anorexia.
- Family : Solanaceae
- Botanical name : *Solanum surratense* L.

Local name : Maraghoni
Part used : Whole plant
Habit ; Herb
Local uses : The fresh leaves are given orally for the treatment of digestive disorders.
- Family : Uriticaceae
- Botanical name : *Urtica diatica* L.

Local name : Sciezonkai
Part used : Leaves
Habit ; Herb

Local uses : Locally, the leaves are mixed with other fodder crops and are given to cows and buffaloes and considered to increase milk production.

Discussion

Medicinal plants are the important source of drugs in traditional system of medicines (Sher and Hussain, 1998). They are used for the treatment of various human and livestock health disorders (Buckingham, 1999). The present study documented 16 species used by the local inhabitants in traditional system of medicine for the curing of various livestock ailments. Similar results were also reported by Ali and Fever (1996) who studied indigenous knowledge of plants in Northern Chitral, Pakistan and described 85 plants of medicinal importance and also by Sher and Ahmed (1998), who described traditional uses of 57 wild medicinal plants of District Bunir, Pakistan. The detail of local uses, local method of recipe preparation and application along with their local name and diseases treated were recorded for each species from knowledgeable and experienced persons of the area. They were used either singly or in combination with other plants or even in combination with sugar, wheat flour and ghee for the treatment of various livestock ailments. Similar information was also gathered from the local people of Afghanistan by Davis et al. (1995), who reported some plants which were used for the curing of various livestock ailments. The species like *Allium sativum* L. enhance digestion and *Solanum surratense* L. treat digestive disorders. The species *Cynodon dactylon* L. and *Urtica diotica* L. are used to improve quality of milk and increase butter production. The species like *Melia azadarach* L. and *Punica granatum* L. are used as anthelminthic agents. The same use was also reported by Fakim (1990), who reported 197 species of plants having medicinal properties from Mauritus along with their local name, part used and local uses.

The study showed that most of the low income families are involved in the collection of medicinal plants. These finding are inline with that of Sher and Hussain (2000) who reported that approximately 5000 low income families in Malakand Division and Northern Area of Pakistan are involved in the gathering and marketing of medicinal plants. The study revealed that the area, as a whole is under heavy biotic pressure. Over grazing, cutting, fodder and fuel wood extraction are very common. Man and his agents have ruined the natural vegetation at all elevations through intensive deforestation and cleaning of land for agriculture practices. This statement is also in line with that of Sher (2001) who studied 24 alpine as well as medicinal plants. The people of the area are poorly educated about medicinal plants collection, they have no proper training regarding harvesting, post-harvest care, storage and marketing of medicinal plants. Most of the economically important medicinal plants are becoming rare and endangered and are on the verge of extinction in the area due to over

Table 1: Traditional uses of medicinal plants for the treatment of livestock ailments in Udigram Swat, Khyber Pakhtunkhwa, Pakistan

Family	Botanical Name	Local Name	Part used	Disease treated	Animals
A-Monocot	1. *Allium sativum* L.	Oaga	Bulblets	Anorexia, enhance digestion	Buffaloes, cows and goats
1- Liliaceae					
2- Poaceae	2. *Cynodon dactylon* L.	Khabal	Whole plant	Improve quality of milk and increase butter production	Cows and buffaloes
B- Dicot					
3- Acanthaceae	3. *Justacia adhatoda* Nees	Baikar	Leaves	External wound healing, dysentery	Cows, buffaloes and sheeps
4- Berberdaceae	4- *Berberis lyceum* Royle	Kwaray	Root bark	Improve feeding and general health maintenance	All livestock
5- Caryophylaceae	5- *Stellaria media* L.	Oulalai	Whole plant	Appetizer	Buffaloes, cows
6- Fumariaceae	6- *Fumaria indica* Pugsley	Papra	Whole plant	Fever, deworming, diarrhea	All animals
7- Lamiaceae	7- *Mentha longifolia* L.	Valaney	Leaves	Anti flatulence	Buffaloes, sheep and goat
	8- *Salvia moorcroftiana* Wall. Ex Benth	Khurdug	Leaves	Anti fever, removal of placenta	Buffaloes, goat and sheep
8- Meliaceae	9- *Melia azadarach* L.	Bakayana	Leaves	Anti helminthes	Buffaloes, goat and sheep
9- Papilionaceae	10- *Lathyrus aphaca* L.	Korkamanai	Root	Internal infection, appetizer	All animals
10- Polygonaceae	11- *Rumex dentatus* L.	Shalkhay	Leaves	Constipation	All animals
11- Punicaceae	12- *Punica granatum* L.	Anar	Rind of fruit	Remove intestinal worms	All animals
12- Scrophulariaceae	13- *Verbascum thapsus* L.	Khurdug	Leaves	Treat diarrhea, dysentery	All animals
	14- *Veronica anagalis aquatica* L.	Polherbotay	Young shoot	Fever, anorexia	Goat and sheep
13- Solanaceae	15- *Solanum surratense* L.	Maraghoni	Whole plant	Digestive disorders	Buffaloes, cow and sheep
14- Urticaceae	16- *Urtica diotica* L.	Sciezonkai	Leaves	Increase Lactation	Buffaloes, cow

exploitation, habitat loss, over grazing and improper method of collection and processing of these valuable resources.

Conclusion

The local communities of the area rely on medicinal herbs for the treatment of livestock ailments because of their easy availability, low cost and no side effect. There is a dire need of proper taxonomic identification and documentation of local knowledge of medicinal plants for the communities and their future generation and for scientific consideration of wider uses of traditional knowledge for the treatment of livestock health disorders.

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