



Practices of Medicinal Plants Used By the Local Peoples in Veterinary Medicine in Lohagara Upazila of Narail District, Bangladesh

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Article History

Received: April 4, 2021

Revised: June 19, 2021

Accepted: June 24, 2021

Published: June 27, 2021

Abstract

Purpose: The current investigation is aimed at medicinal plants used by the local people in veterinary medicines in Lohagara Upazila of Narail district, Bangladesh. **Methodology:** The present study was carried out from November 2018 to March 2020. Practices of veterinary medicinal data were documented following semi-structured questionnaires, field observations and interviews with housewives, cattle owners, and traditional healers and elderly persons. **Results:** In the research area, a total of 17 veterinary preparations were studied in which 34 medicinal plant species belonging to 29 genre and 22 families were documented. **Conclusion:** The present researches were preliminary veterinary practice methods and their ordinary utilization.

Keywords: Medicinal plants; Veterinary medicines; Narail district; Bangladesh.

1. Introduction

Use of plants for treating diverse ailments of domestic animals is an old practice. For centuries, medicinal plants have been used extensively to combat diseases and in many parts of the world are still using for this purpose [1]. Veterinary Medicine Practices (VMP) is a scientific term for traditional animal health care that encompasses the knowledge, skills, methods, practices, and beliefs about animal health care found among the traditional medicinal practitioners. It has been observed that the traditional knowledge of VMP is now confined only among the surviving older people and a few numbers of traditional healers [2]. This traditional knowledge is transferred on orally from one generation to the next generation [3, 4].

Therefore, it is extremely necessary to document and disseminate indigenous knowledge in order to help and share the different uses of plants as animal health care and to promote different conservation measures. Thus, the aim of this study was to evaluate the veterinary therapeutic practices and conservation status of the medicinal plants of Lohagara Upazila of Narail district, Bangladesh. This is the first attempt to document the indigenous knowledge and evaluate the conservation status of medicinal plants and practices of herbal remedies by the local people of Lohagara Upazila in the treatment of their livestock.

Over the past decade, similar important research in home and abroad like Islam, *et al.* [5], Rahman and Jamila [6], Islam and Kashem [7], Harun, *et al.* [8], Islam, *et al.* [9], Alam, *et al.* [10], Mamun, *et al.* [1], Usha, *et al.* [2], Ole-Miaron [4], Aziz, *et al.* [11], Xiong and Long [12], Kumar and Bharati [13] and Sehgal and Sood [14]. Objectives of this present research are to identify and evaluate the veterinary medicines of the medicinal plants in LohagaraUpazila of Narail district, Bangladesh.

2. Materials and Methods

Study Area: LohagaraUpazila (Narail district) area 290.83 sq km, located in between 23°05' and 23°19' north latitudes and in between 89°29' and 89°46' east longitudes. It is bounded by MohammadpurUpazila on the north, Kalia Upazila on the south, Alfadanga, Kashiani and Gopalganj sadar Upazilas on the east, Narail Sadar and Shalikha Upazilas on the west. The study area of Lohagara Upazila experiences a typical tropical monsoon climate, with hot wet summers from May to September and cool dry winters. The rainy season occurs approximately from May to October [15].

Methodology: Practices of medicinal plants used by the local peoples in veterinary medicine in Lohagara Upazila of Narail district, Bangladesh was carried out from November 2018 to March 2020. Medicinal information was obtained through semi-structured interviews with knowledgeable traditional healers. A total of 112 informants having an age range of 24-75 years were interviewed using the semi-structured interviewed method [16]. Plant parts with either flowers or fruits collected using traditional herbarium techniques to make voucher specimens for documentation and voucher specimens have been preserved at Herbarium of Rajshahi University.

Identification: Collected specimens have been examined, studied and identified. Identifications have been

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confirmed by consulting standard literature Hooker [17], Prain [18] and Ahmed, *et al.* [19]. Nomenclature has been updated following recent literature Ahmed, *et al.* [19], Pasha and Uddin [20] and Huq [21].

3. Results and Discussion

Practices of medicinal plants used by the local peoples in veterinary medicine in Lohagara Upazila of Narail district, Bangladesh was carried out from November 2018 to March 2020. The present researches were recorded 34 medicinal plants belonging to 29 genera and 22 families (Table 1). Out of 34 medicinal species, 35.29% species were used as herbs followed by 11.76% were shrubs, 5.88% were climber and 47.05% were tree species (Table 1; Figure 1). Medicinal plants were used by the local peoples 17 veterinary diseases like asthmatic problem, burn injuries, constipation, cough, ulcer, diarrhea, dysentery, enhancing lactation, expulsion of placenta, increase lactation, increase milk, intestinal problem, killing bugs, low lactation, urinary problem, weakness and wound. Out of 17 categories of veterinary uses, low lactation (20.58%), burn injuries (14.70%), cough (11.76%), dysentery (11.76%), weakness (8.82%) and wound (8.82%) were dominant diseases in the research area (Figure 2).

Plant parts were used as veterinary purposes shows variations. Leaves (38.23%) are the highest plant parts were used as veterinary purposes like fruit (17.64%), bark (11.76%), seed (11.76%), stem (8.82%), root (5.88%), whole plant (5.88%), rhizome (5.88%), latex (2.94%), oil cake (2.94%) and tuber (2.94%) (Figure 3). In this research were recorded 22 families, Moraceae (14.70%), Fabaceae (11.76%), Combretaceae (5.88%), Chenopodiaceae (5.88%), Poaceae (5.88%), Solanaceae (5.88%) and Zingiberaceae (5.88%) were dominant families in the study area (Figure 4).

In the present research *Amaranthus spinosus* L., *Artocarpus lakoocha* Roxb., *Arachis hypogaea* L., *Bauhinia variegata* L., *Ficus religiosa* L., *Mangifera indica* L., *Moringa oleifera* Lam. and *Tinospora cordifolia* (Willd.) Miers. are used for low milk flow/increase lactation/enhancing lactation. *Aloe vera* L., *Diospyros malabarica* (Desr.) Kostel., *Ficus racemosa* L. and *Psidium guajava* L. are used for dysentery. *Capsicum frutescens* L., *Cynodon dactylon* (L.) Pers., *Dalbergia sissoo* Roxb. ex DC., *Solanum tuberosum* L. and *Terminalia arjuna* (Roxb.) Wt. & Arn. are used for burns injuries. *Ficus hispida* L.f., *Justicia adhatoda* L., *Ocimum sanctum* L. and *Terminalia chebula* Retz. are used for cough. *Acacia nilotica* (L.) Del. is used for Intestinal problem. *Annona squamosa* L. is used for killing bugs. *Saccharum officinarum* L. is used for urinary problem. *Argemone mexicana* L. is used for ulcer. *Targetes erecta* L. is used for asthmatic problem. *Chenopodium album* L. is used for expulsion of placenta, *Cassia fistula* L. and *Chenopodium ambrosioides* L. are used for constipation. *Diospyros malabarica* (Desr.) Kostel. and *Ficus racemosa* L. are used for diarrhea. *Artocarpus heterophyllus* Lamk., *Ricinus communis* L. and *Zingiber officinale* Roscoe. are used for weakness. *Argemone Mexicana* L., *Abrus precatorius* L. and *Curcuma longa* L. are used for wound. This result compare with the results of other studies in Bangladesh and other countries like Islam, *et al.* [5], Rahman and Jamila [6], Islam and Kashem [7], Harun, *et al.* [8], Islam, *et al.* [9], Alam, *et al.* [10], Mamun, *et al.* [1], Usha, *et al.* [2], Ole-Miaron [4], Aziz, *et al.* [11], Xiong and Long [12], Kumar and Bharati [13] and Sehgal and Sood [14].

These plants are also used for human diseases like dysentery, diarrhea, asthma, anemia, snake-bite, burning wound, toothache, fever, skin disease, diabetes, blood pressure, cold, cough, abdominal pain, jaundice, diuretic, abortion, rheumatism, eczema, piles, bronchitis, leucorrhoea and constipation Afrin and Rahman [22], Anisuzzaman, *et al.* [23], Farhana, *et al.* [24], Khatun and Rahman [25], Rahman and Biswas [26] [27-34] and [35-39]. This is the first attempts to record on the practices of medicinal plants used by the local peoples in veterinary medicine in LohagaraUpazila of Narail district, Bangladesh.

Table-1. Practices of medicinal plants used by the local peoples in veterinary medicines in Lohagara Upazila of Narail district, Bangladesh

Scientific Name (Family)	Local Name	Habit	Parts of Used	Veterinary use	Mode of preparation
<i>Acacia nilotica</i> (L.) Del. (Mimosaceae)	Babla	Tree	Bark	Intestinal problem	Stem bark decoction is applied twice a day for four days
<i>Annona squamosa</i> L. (Annonaceae)	Ata	Tree	Leaf	Killing bugs	Juice of leaves is applied externally
<i>Amaranthus spinosus</i> L. (Amaranthaceae)	Katanotey	Herb	Whole plant	Low lactation	Boiled whole plant mixed with young arum leaf is applied twice a day
<i>Argemone mexicana</i> L. (Papaveraceae)	Sheyalkata	Herb	Latex, Seed	Ulcer, wound	Latex of plants mixed with seed oil are applied once daily for fifteen days
<i>Artocarpus heterophyllus</i> Lamk. (Moraceae)	Khathal	Tree	Fruit	Weakness	Unripe fruit used for balanced purposes
<i>Artocarpus lakoocha</i> Roxb. (Moraceae)	Dewa	Tree	Leaf	Increase Milk	Young leaves are used orally

<i>Abrus precatorius</i> L. (Fabaceae)	Kuch	Climber	Leaf	Wound	Paste made from leaves is applied until cure
<i>Aloe vera</i> L. (Liliaceae)	Grito kumari	Herb	Leaf	Dysentery	Decoction of leaves is applied until cure
<i>Arachis hypogaea</i> L. (Fabaceae)	China badam	Herb	Fruit, oil cake	Increase lactation	Oil cake and fruit is applied internally
<i>Bauhinia variegata</i> L. (Fabaceae)	Kanchan	Tree	Leaf	Enhancing of lactation	Young leaves are applied orally
<i>Capsicum frutescens</i> L. (Solanaceae)	Morich	Shrub	Fruit	Burns injuries	Paste of fruit applied with burn area
<i>Cassia fistula</i> L. (Caesalpiniaceae)	Badarlathi	Tree	Fruit	Constipation	Young fruit is applied internally
<i>Chenopodium album</i> L. (Chenopodiaceae)	Botuashak	Herb	Whole plant	Expulsion of placenta	Young whole plant is applied orally
<i>Chenopodium ambrosioides</i> L. (Chenopodiaceae)	Banbatua	Herb	Seed	Constipation	Paste of seeds is applied internally
<i>Cynodon dactylon</i> (L.) Pers. (Poaceae)	Durbaghas	Herb	Whole plant	Burns injuries	Paste of whole plant is applied externally
<i>Curcuma longa</i> L. (Zingiberaceae)	Holud	Herb	Rhizome	Wound healing	Rhizome paste is applied externally
<i>Diospyros malabarica</i> (Desr.) Kostel. (Ebenaceae)	Gaab	Tree	Leaf	Dysentery, Diarrhea	Fed tender leaves twice daily for three days
<i>Dalbergia sissoo</i> Roxb. ex DC. (Fabaceae)	Sissoo	Tree	Leaf	Burns injuries	Leaf paste is applied externally
<i>Ficus racemosa</i> L. (Moraceae)	JaggDumur	Tree	Leaf	Diarrhea and Dysentery	Fresh Leaves are treated orally
<i>Ficus hispida</i> L. f. (Moraceae)	Khoksa	Tree	Leaf	Dry cough	Young fresh leaves are used orally three times daily for four days
<i>Ficus religiosa</i> L. (Moraceae)	Pakur	Tree	Leaf	Increase lactation	Fresh young leaves is applied orally
<i>Justicia adhatoda</i> L. (Acanthaceae)	Basak	Shrub	Leaf	Cough	Leaf decoction is applied orally until cure
<i>Mangifera indica</i> L. (Anacardiaceae)	Aam	Tree	Seed, Bark, Root	Low milk flow	Paste made from seed, bark and root are applied orally once daily for ten days
<i>Moringa oleifera</i> Lam. (Moringaceae)	Sojina	Tree	Seed, Bark, Root	Low milk flow	Paste of bark, root and seeds are used once a day for ten days
<i>Ocimum sanctum</i> L. (Lamiaceae)	Tulsi	Herb	Leaf	Cough	Decoction of young leaves is applied internally until cure
<i>Psidium guajava</i> L. (Myrtaceae)	Piaj	Tree	Fruit	Dysentery	Unripe and ripe fruits are applied orally
<i>Ricinus communis</i> L. (Euphorbiaceae)	Verenda	Shrub	Seed	Weakness	Oil extract from seed (150 ml) mixed with ginger, pepper, clove, betel leaf and garlic juice are applied until cure
<i>Saccharum officinarum</i> L. (Poaceae)	Aakh	Shrub	Stem	Urinary problem	Stem juice mixed with water is used orally
<i>Solanum tuberosum</i> L. (Solanaceae)	Alu	Herb	Tuber	Burn injuries	Tuber paste is applied externally

<i>Terminalia arjuna</i> (Roxb.) Wt. & Arn. (Combretaceae)	Arjun	Tree	Bark	Burn injuries	Paste of bark is applied externally until cure
<i>Terminalia chebula</i> Retz. (Combretaceae)	Horitoki	Tree	Fruit	Cough	Unripe fruit is used orally
<i>Tinospora cordifolia</i> (Willd.) Miers. (Menispermaceae)	Gulon chu	Climber	Leaf, stem	Enhancing Lactation	Young leaf and stems are used orally
<i>Targeteserecta</i> L. (Asteraceae)	Gandhaful	Herb	Root	Asthmatic problem	Paste of root mixed with water is applied orally until cure
<i>Zingiber officinale</i> Roscoe. (Zingiberaceae)	Ada	Herb	Rhizome	Weakness	Ginger (rhizome), betel leaves, pepper, clove, garlic juice mixed with castor oil (150 ml) is applied three days.

Figure-1. Recorded plant habit in the study area

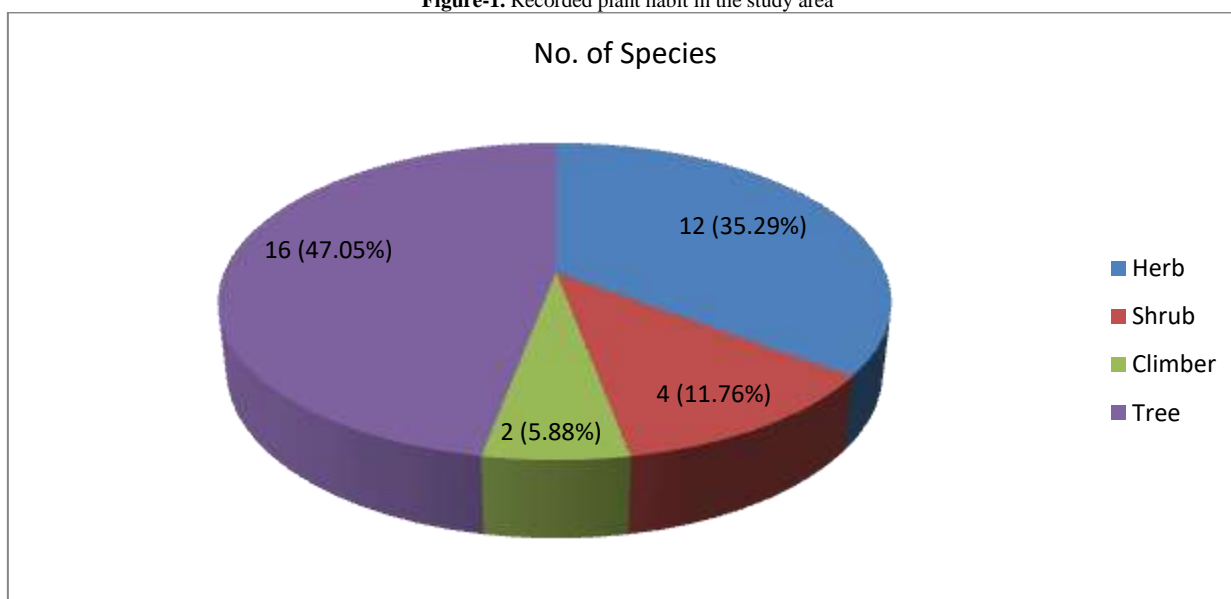


Figure-2. Recorded dominant diseases in the study area

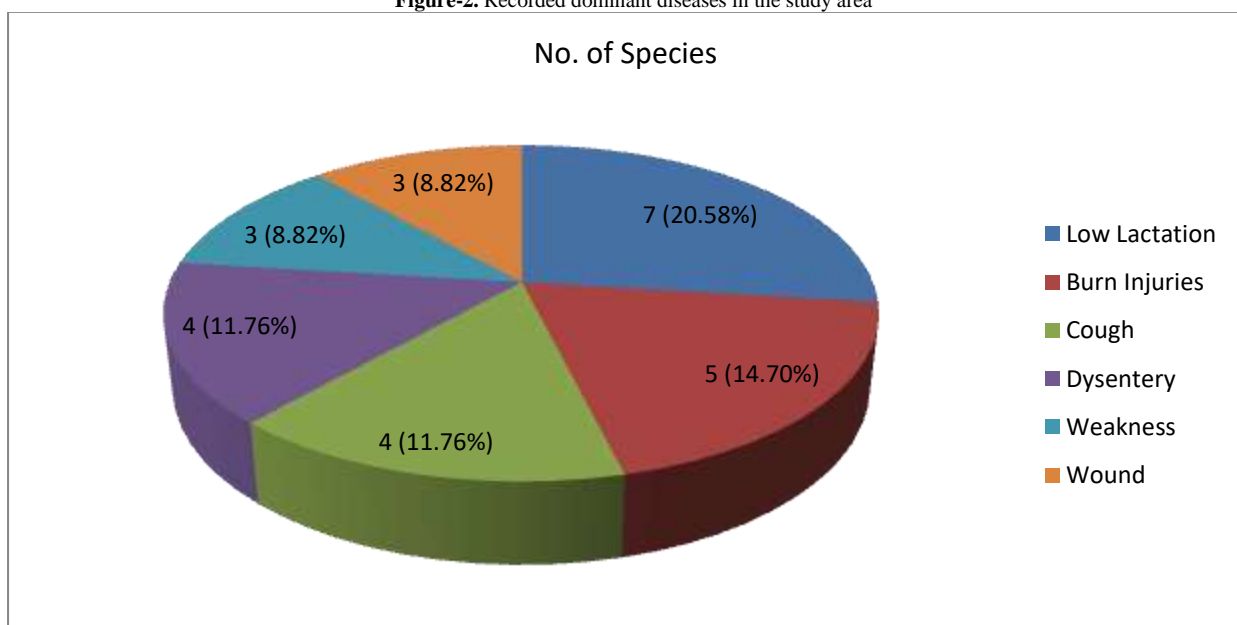


Figure-3. Recorded plant parts used as veterinary preparations

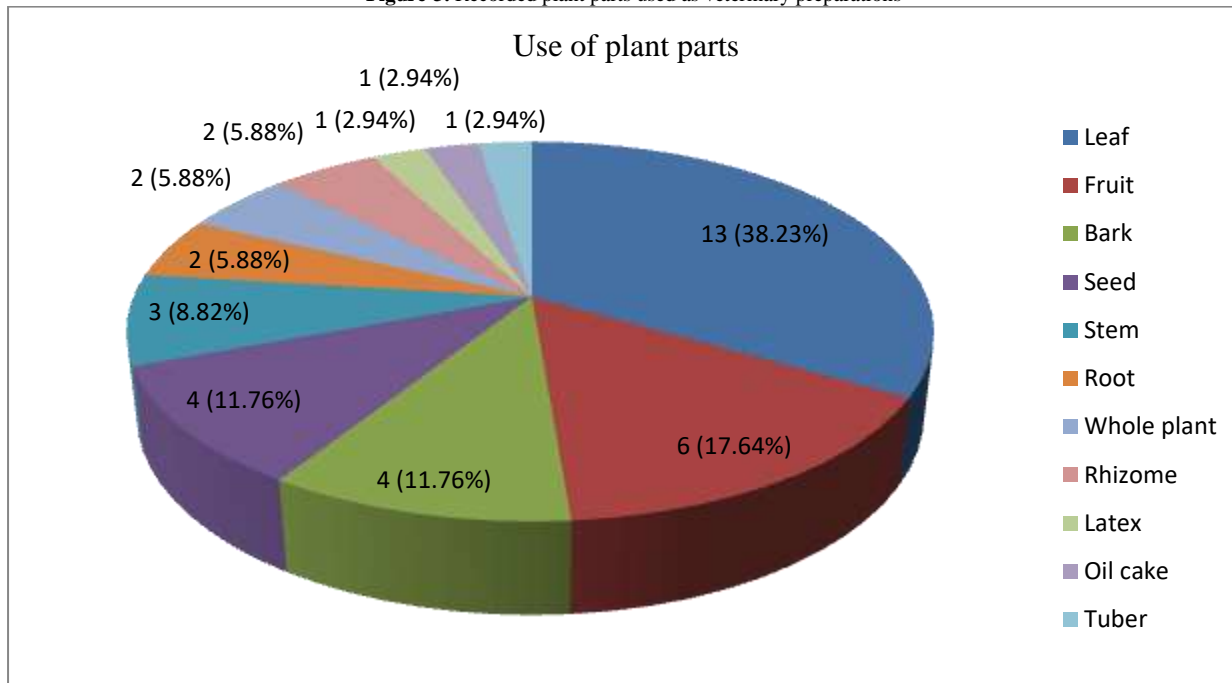
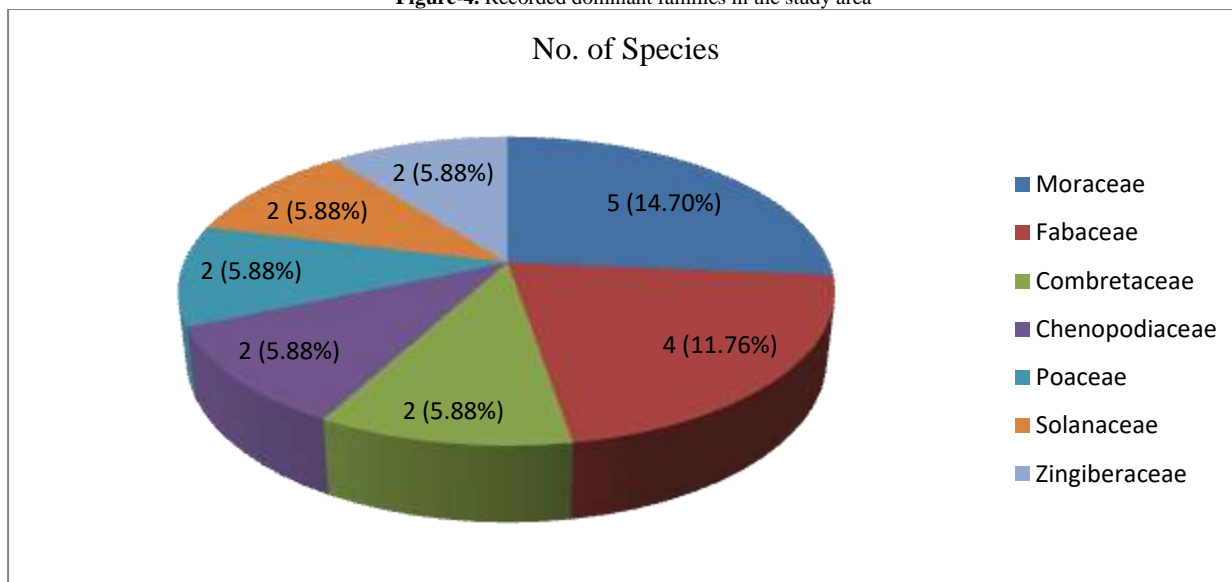


Figure-4. Recorded dominant families in the study area



4. Conclusion

The present research provided the first document on the inventory of medicinal plants used in veterinary medicines Lohagara Upazila of Narail district, Bangladesh. In the research area, a total of 17 veterinary preparations were studied in which 34 medicinal plant species belonging to 29 genera and 22 families were documented. The treatment process and practices that are reported in this study however, need to be verified in order to point out those which are more beneficial and practically useful for livestock development.

Acknowledgements

The authors are grateful to the local people in Lohagara upazila of Narail district, Bangladesh for their co-operation and help during the research work.

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