



Documentation of phytomedicine used for livestock in Tadasanahalli Shivamogga Karnataka

Dr. Manjula Rathod, Latha B M

Department of Studies and Research in Botany, Sahyadri Science College, Kuvempu University, Jnana Sahyadri, Shankaraghatta Shivamogga, Karnataka, India

Abstract

Phytomedicine uses plant-based products to prevent diseases, it focuses on natural compounds obtained from different parts of plants. Aim of present work is documentation phytomedicine used for the treatment of livestock in Tadasanahalli Shivamogga. Total 16 plant species belong to 16 genera and 13 families involved in the treatment. The families such as Lamiaceae, Liliaceae, Rutaceae and Zingiberaceae represented by two plant species whereas Apiaceae, Anacardiaceae, Amaranthaceae, Apocynaceae, Brassicaceae, Fabaceae, Meliaceae, Malvaceae and Piperaceae represented by one species each. The leaves (07) were most used in the treatment followed by seeds (03), rhizome (02), fruits (02), stem (01), and bulb (01) respectively. The oral administration of juice, whereas paste of some plant parts were locally applied. The oral administration of juice, decoction, raw, and powder was either given singly or mixed with water, milk, curd, oil and honey. Habit wise herbs (10) are most used followed by shrub (03) and tree (03) species were found. The common livestock's ailments treated such as cuts, ticks and mites, foot and mouth disease, lumpy skin disease, ephemeral fever, cold, cough, nasitis, nasal granulation, skin diseases, fungal infection, swelling of neck, bone fracture, swelling, acidity and healing of wounds. Field of phytomedicine is important for preserving cultural heritage, promoting affordable health care as the study is rich in plants biodiversity it can be more supportive for scientific research in future.

Keywords: Ailments, documentation, herbs, livestock, medicine, plants, practitioners

Introduction

According to the World Health Organization [WHO] most population still rely on traditional medicine for their psychological and physical health requirements. Rural areas of many developing countries still rely on traditional medicine for their primary health care needs. These natural medicines are relatively safer and cheaper than synthetic or modern medicine Manjula Rathod, Prathima Mathad 2022 [1]. Phyto medicine is the study and use of medicinal plants and plant-based products to prevent, manage and treat diseases. It focuses on natural compounds obtained from different parts of plants such as whole plant, root, rhizome, stem, leaves, flower, seed and resins that have healing properties. Approximately 80% of world population use traditional medicine mainly plants to cure illness and ailments

Indigenous people observe nature carefully and use locally available herbs, roots, leaves and minerals to prevent and cure diseases. Many modern medicines have originated from such traditional knowledge system. India is rich in cultural and floristic diversity and also a store house of Ethno botanical knowledge. large section of India population still rely on plant-based medicines as they are abundantly available, Economical and have little or no-side effect in addition to their cultural acceptability Rajakumar and Shivanna 2009, Manjula Rathod, Prathima Mathad 2022 [1, 2].

In India agriculture, livestock plays a key role in the farmer's life, they provide from power rural transport, manure, fuel, milk and meat, but also a major role in rural economy by providing income and employment to the small hold farmers and other worker sections of the society. The indigenous knowledge of the veterinary health care system. Acquired by traditional herbal herbs healers and elderly learned farmers and his orally transformed from one

generation to other Raj Kumar Verma 2014 [7], Manjula a Rathod, Prathima Mathad 2022 [1].

During last three decades, the worldwide market of traditional medicine has substantial growth in herb and herbal products. Rapidly rising demand and exports of medicinal plants attract to the global interest in these products has well as in traditional health systems. International sales of herbal products totaled an estimate of 60,000 million in 2002 Baydoun S, Lamis, Helena D, Nelly A 2015 [8]. Present work is focused on plants utilized for the treatment of livestock in Tadasanahalli, of Shikaripura Taluk, Shivamogga. As livestock are the backbone of Indian agriculture there is a need to find out safe and harmless medicine for treatment.

Study Area

Tadasanahalli is the small village of Shikaripura Taluk, Shivamogga district in the Indian state of Karnataka.

Geography

The village is located approximately 14.42878° N latitude and 75.33945° E longitude. It is approximately 670 meters above sea level. It is situated in the Malnad region of Karnataka. The village is located in the vicinity of Shikaripura, a junction town connecting North Karnataka to the Malnad region. The surrounding region is the part of the tropical forest of Malnad. The area is located within the catchment region of the Kumadvathi river.

Climate: Tadasanahalli Shikaripura Shivamogga, Karnataka has a tropical monsoon climate, typically characterized by hot, dry, summers and warm, pleurant winters. There is a significant rain fall from June to September and summer temperature often exceeding 35°.

Total 09 members were interviewed including 03 traditional practitioners, 03 farmers and 03 elderly people among which 02 female and 07 were male respectively. Depending on the information collected traditional practitioners 16 plant species belong to 16 genera and 13 families involved in the treatment of livestock ailments. The families such as Lamiaceae, Liliaceae, Rutaceae and Zingiberaceae represented by two plant species whereas Apiaceae, Anacardiaceae, Amaranthaceae, Apocynaceae, Brassicaceae, Fabaceae, Meliaceae, Malvaceae and Piperaceae represented by one species each. The common livestock's ailments treated such as cuts, ticks and mites, foot and mouth disease, lumpy skin disease, ephemeral

fever, cold, cough, mastitis, nasal granulation, skin diseases, fungal infection, swelling of neck, bone fracture, swelling, acidity and healing of wounds tabulated in (Table-1 and Photographs of plants represented in PLATE-1,2 and 3). The leaves (07) were most used in the treatment followed by seeds (03), rhizome (02), fruits (02), stem (01), and bulb (01) respectively. The oral administration of juice, whereas paste of some plant parts were locally applied. The oral administration of juice, decoction, raw, and powder was either given singly or mixed with water, milk, curd, oil and honey. Habit wise herbs (10) are most used followed by shrub (03) and tree (03) species.

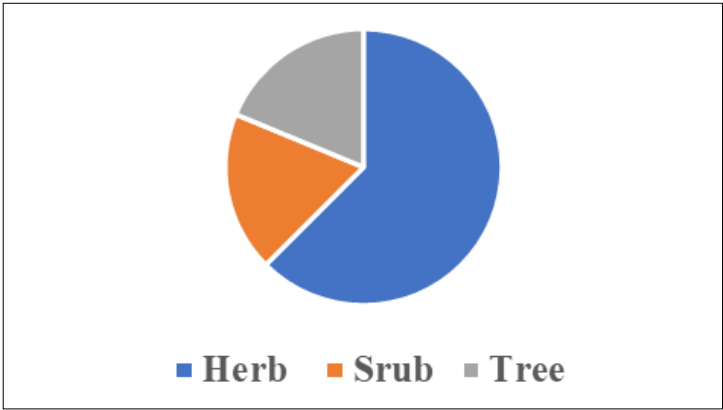


Fig 2: Habit wise distribution of plants

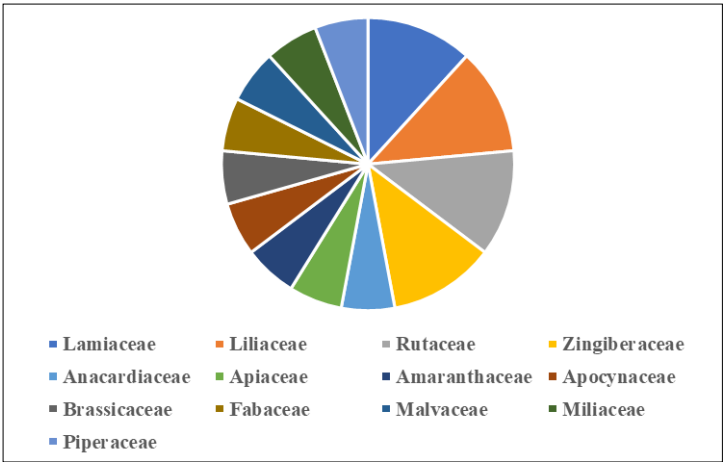


Fig 3: Family wise distribution of plants

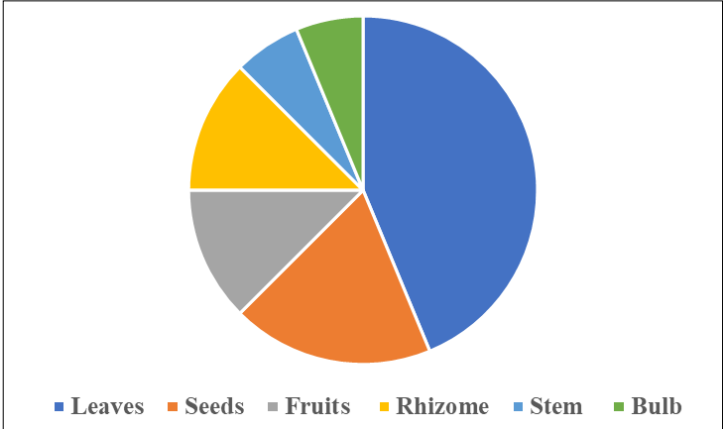


Fig 4: Distribution of different plant parts



Fig 5: *Azadirachta indica* A. Juss



Fig 6: *Leucas aspera* (wild). Link



Fig 7: *Piper nigrum* L

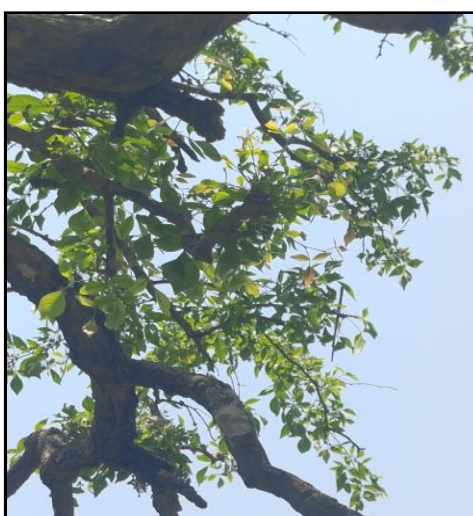


Fig 8: *Aegle marmelos* (L.) Corr



Fig 9: *Zingiber officinale* Rose



Fig 10: *Calotropis procera* (Aiton) Dryand

Some photographs of plants involved in treatment of livestock

Table-1. Phytomedicine used for the treatment of livestock's ailments

SL No	Plant name	Local Name	Family	Part Used	Preparation of Drug	Alignments Used as
01	<i>Achyranthes aspera</i> L.	Utarani	Amaranthaceae	Leaf	Fresh leaf juice applied on the affected area Fresh leaf paste applied on affected parts	Ticks and Mites Foot and Mouth disease
02	<i>Azadirachta indica</i> A. Juss.	Bevu	Meliaceae	Leaf	Fresh leaf paste prepares and applied on affected body surface	Lumpy Skin disease
03	<i>Leucas aspera</i> (wild)	Tumbe	Lamiaceae	Leaf	Fresh leaf of leucas aspera + Garlic + Pepper and given Orally	Ephemeral fever
04	<i>Ocimum sanctum</i> L.	Tulsi	Lamiaceae	Leaf	Decoction of leaf given orally	Fever, cold and cough
05	<i>Abutilon indicum</i> (L.)	Turabi	Malvaceae	Leaf	Fresh leaf paste applied on affected parts	Foot and mouth disease
06	<i>Aloe vera</i> (L.) Burm.f.	Lolerasa	Liliaceae	Leaf	Aloe vera jell mixed with turmeric powder castor oil & Jaggery is applied on affected part	Nastitis. Cuts and wounds
07	<i>Calotropis procera</i> (Aiton) Dryand.	Yakke	Apocynaceae	Leaves Stem	Latex of the stem is used. Fresh leaf paste applied with turmeric powder	Nasal granulation Skin disease
08	<i>Aegle marmelos</i> (L.) Corr.	Bilvapatre	Rutaceae	Fruit	Fresh pulp of fruit mixed with turmeric powder and applied	Foot and mouth disease Fungal infection
09	<i>Allium sativum</i> L.	Belluli	Liliaceae	Bulb	A garland of garlic is tied over neck	Swelling of neck
10	<i>Brassica campestris</i> L.	Sasive	Brassicaceae	Seed	Massage with seed oil	Bone fracture
11	<i>Citrus lemon</i> (L.) DC.	Nimbe	Rutaceae	Fruit	Fruit and leaf juice is locally applied	Skin disease
12	<i>Mangifera indica</i> L.	Mavu	Anacardiaceae	Leaf	Fresh leaf paste applied	Bone fracture
13	<i>Piper nigrum</i> L.	Kalu means	Piperaceae	Seed	Dried seed powder	Mouth disease or infection
14	<i>Zingiber officinale</i> Rose	Shunti	Zingiberaceae	Rhizome	Decoction of fresh rhizome given orally	Cough cold
15	<i>Trachyspermum ammi</i> (L.) Sprague	Ajvian	Apiaceae	Seed	Dried seed powder makes as a juice	Mouth disease or infection
16	<i>Curcuma longa</i> L.	Arashina	Zingiberaceae	Rhizome powder	Paste of dried rhizome	Wounds

The complete profile of all plants used in the treatment were as follows,

Utarani

Taxonomic description

Achyranthes aspera is an erect, sometimes sprawling, long-lived herb which can grow up to 2 m tall, with stems becoming woody at the base. Its short-stalked leaves are opposite, simple and egg-shaped; they can be densely to sparsely hairy and are dark green above and paler below, with young leaves often silvery.

Neem/Bevu

Taxonomic description

Neem is fast growing tree and it is deciduous, shedding many of its leaves during the dry winter months. The branches are wide and the leaves are pinnately compound, opposite and dark leaflets, petiole is short and lanceolate. Flowers are star shaped and spreading consist of 5 petals, filament is fused and white in color. Fruit is oval shape green when young and yellow when ripen.

Tumbe

Taxonomic description

Tumbe is a herbaceous plant, typically growing as an annual or perennial herb. Leaves are simple opposite covered with fine hairs. Stems erect, branched. Inflorescence is spike, flowers are white in color small. Fibrous root system.

Tulsi/Ocimum

Taxonomic description

Tulsi is a herbaceous plant with simple green aromatic leaves. Stem is green, tender and branched, soft and flexible. Flowers are small tubular and fragrant, seedpods after flowering, Tulsi develops small, round, and brown seed pods that contain the seeds for reproduction.

Turabi

Taxonomic description

Abutilon indicum is an erect, perennial shrub (1.5-3 m high) from Malvaceae family. Widely known for its bright yellow / orange solitary flowers and traditional medicinal uses in Ayurveda. It thrives as a hardy shrub with velvety heart shaped. Leaves are grayish - green heart shaped either serrated margin. Flowers are bell shaped and open in the afternoon

Lolerasa/Aloe

Taxonomic description

The leaves are grey to green and sometimes have white spots their surface. They have sharp spines along their edges and are the source of colorless gel found in many commercial and medicinal products; it has yellow, tube-like flowers that cluster on stem.

Calotropis/Yakke

Taxonomic description

Calotropis is a large shrub growing to 4m tall. It has clusters of waxy flowers that are either white or lavender in colour. Commonly known as milkweeds. Leaves are obovate with acute tip. Calotropis produces milky latex. Latex contains fatty acids. Roots contain calotropin.

Bilvapatre

Taxonomic Description

A medium sized, deciduous aromatic tree with sharp axillary spines and greyish bark. Leaves are alternate, trifoliate with leaflets that are ovate lanceolate and gland dotted. Flowers are small, fragrant, greenish white or pale-yellow clusters. Globose fruit with hard, woody, smooth

yellowish green rind containing many seeds embedded in thick, mucilaginous pulp.

Belluli/Garlic

Taxonomic Description

Allium sativum is a diploid perennial monocot and characterized by an odoriferous, compound bulb of 10-20 cloves and flat, linear leaves. The bulb is composed of multiple cloves surrounded by a thin, white or purple papery sheath. The linear, flat, solid leaf blades that are acuminate in umbel inflorescence.

Sasive/Mustared

Taxonomic Description

Brassica campestris is an erect annual herbaceous plant. Growing 45-100cm tall. It has a tap root system, often slightly swollen in some variants. Lower leaves are petiolate and pubescent while upper leaves are sessile and auriculate. Flowers are yellow, hermaphrodite actinomorphic and tetramerous. Fruit is a silique, which is long slender and cylindrical and seeds are small round typically black are dark brown at maturity.

Nimbe/Citrus

Taxonomic Description

Citrus lemon is a small thorny, evergreen tree in the Rutaceae family with spreading angular thorny branches. Leaves are alternate, ovate- oblong, petiolate, often serrate margins and fragrant. Flowers are solitary or in small axillary clusters. Fruit is a hesperidium, ovoid, oblong with a prominent mamilla at the apex. The thick yellow glandular rind covers with a white spongy layer. It containing acidic pulp.

Mavu/Mango

Taxonomic description

A long lived, stout, evergreen tree with scaly bark it produces whiteish latex from cuts. The leaves are alternate, simple, oblong - lanceolate leaves. Young leaves are reddish and turn shiny dark green. A fleshy stone fruit, highly variable in shape and size with yellow orange. The fruit contains a single large seed encased in a hard, fibrous endocarp.

Pepper/Menasu

Taxonomic description

Black pepper, *Piper nigrum*, is a climbing perennial plant in the family Piperaceae which is grown for its fruits. The fruits are used to produce black, white and green peppercorns which are commonly used as a spice in cooking. Black pepper may be vining or have bushy, wooden stems.

Ginger/Shunti

Taxonomic description

The Rhizome is a functional part. It is a thick, fleshy, aromatic tuber like rhizome. Which is branched and typically warty, with a skin and yellow white interior. The plant has upright stem, herbaceous, pseudo stems formed by rolled leaf sheath. Leaves are narrow, lanceolate and have cone like flower spikes.

Ajvyan/Carvey

Taxonomic description

The plant is erect highly branched, annual, herbaceous plant. Stem is striated, branched and glabrous or minutely

pubescent. Leaves are alternate, petiolate and it has Compound umbel inflorescence. The seeds are actually greyish brown Ovoid rough Cremocarp. The fruits have a strong, thyme like Oduor.

Termaric/Arishina

Taxonomic description

A perennial herb, growing up to 1 to 2 meters tall. Leaves are large, oblong or lanceolate, that are dark green on top and pale green below. Rhizome is the underground part, which is tough, segmented, and bright orange yellow internally.

Discussion

The present work first time reported the phytomedicine used for the treatment of livestock from Tadasanahalli region Shimoga district Karnataka and some plants uses are not reported particularly *Abutilon indicum* for foot and mouth disease. The literature showed all these plants earlier used against various diseases. *Azadirachta indica*, *Ocimum sanctum*, *Lucas aspera*, for the treatment of lumpy skin disease, fever, cold, ephemeral fever, respectively.

This part of the discussion describes pharmacological uses of almost all the plants reported by various authors in past ethnobotanical studies all over world and compared with our reports collected from local residents. Both fresh and dry plant materials were used for the preparation of crude drugs and administered by both internally (oral) and externally for treating ailments. Large quantity of traditional practitioners, livestock owners, farmers, and elderly people use phytomedicine and there is a difference between plants used to treat one particular ailment in particular and practitioner to practitioner. Some plants from present work as well as earlier literature from all over the world found to be same purpose *Achyranthes aspera* over for ticks and mites. *Azadirachta indica* for lumpy skin disease *Abutilon indicum* for foot and mouth disease etc. Local practitioners of Kalaburagi use *Calotropis procera* (Aiton) Dryand. for bone fracture and snake bite as per earlier study likewise *Achyranthes aspera* Ver. argentea. (Lam.) Boiss for ticks and mites, *Azadirachta indica* A. Juss. As per earlier literature they were used for itching, fever [Sivasankari Pitchaimani, Anandharaj 2013; Baydoun, Lamis, Helena, Nelly 2015 ^[5, 8], tooth pain and eczema, stomachic and abortifacient [Sinha], runny nose Parashurama, Shivakumar, swelling of neck, worms, Verma 2014 ^[7] and foot and mouth disease, insect bites and wounds Sinha 1996 respectively. *Ocimum sanctum* L. for cough and cold, teeth crack Sivasankari, Pitchaimani, Anandharaj 2013 ^[5]. *Mangifera indica* L. (Placenta retention [Parashurama Shivakumar 2016; Verma 2014 ^[6, 7]], As there no data available on livestock in Tadasanahalli further study are needed to explore more uses of plants in future.

Conclusion

The ethnobotanical survey showed considerable diversity in phytomedicine used for the livestock health care. The ethno botany also point out some specific medicinal plant species and their properties to the local inhabitants who are unknown the value of medicinal plants in the environment. It was very important to explore the use of natural resources for the human and livestock health care as they are abundantly available in nature in the form of plants. In recent years phytomedicine gained increasing attention due

to its natural origin, relatively less side effects and cultural acceptance.

Phytomedicine is a promising and valuable field that bridges traditional healing and modern medicine, with proper research regulation and conservation. It can contribute greatly to safe affordable and effective livestock healthcare in the future. Overall phytomedicine connects traditional wisdom with modern science helping researchers understand alternative heling system and uncovering sustainable use of natural resources

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