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'REVIEW OF MEDICINAL PLANTS USED IN VETERINARY PRACTICES' - A BOOK REVIEW

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ABSTRACT

India, with its divine diversity, is one of the wealthiest nations with flora, fauna, and herbal medicinal wealth. *Ayurveda*, the oldest existing medical science of India, with a vast type of remedies, has maintained the health of individuals and cured diseases since time immemorial. It is not limited to humans but extended to animals (*Pashu-Ayurveda*) and trees (*Vriksha-Ayurveda*). Animals and animal products play a significant role in the country's economy. The Indian government has allotted a big budget for various projects for the maintenance of the health of animals and to gain high-quality by-products as well. Looking at this scenario, the current article is a review of a book entitled, 'Review of Medicinal Plants Used in Veterinary Practices', published by the *Central Council for Research in Ayurvedic Sciences* (C.C.R.A.S.), Ministry of *AYUSH*, Government of India, New Delhi.

Keywords: *Ayurveda*, Veterinary, Plants, Medicine, Book, CCRAS

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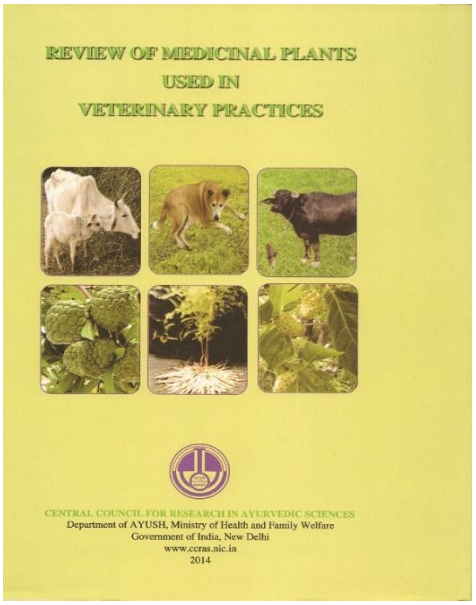

INTRODUCTION

Veterinary *Ayurveda* uses *Ayurveda* principles to diagnose and treat animals. *Ayurveda* is an ancient Indian system of medicine that focuses on achieving balance and harmony within the body, mind, and spirit. Veterinary *Ayurveda* assesses the animal's unique constitution, or *Prakriti*, which is determined by its breed, age, and other factors. India has a diverse range of flora due to its varied topography, climate and soil conditions.[1] It is home to many plant species, including medicinal plants, trees, shrubs, herbs, and wildflowers. India's flora is vibrant and diverse, reflecting the country's varied geography, cultures, and traditions.[2] It also represents the ancient plant taxonomy in the literature of *Ayurveda* and its necessity of acquaintance to the physicians.[3]

In the recent past, the *Central Council for Research in Ayurvedic Sciences* (C.C.R.A.S.), under the aegis of the Ministry of *AYUSH*, Government of India, has taken several initiatives to establish veterinary *Ayurveda* as an evidence-based science. In this regard, 'The Ayurvedic Formulary of India, Part-IV (Veterinary)' was published by the Ministry of *AYUSH* in October 2022, comprising 50 selected formulations to facilitate the manufacture and use of *Ayurveda* Veterinary Drugs.[4] In this book, the information provided is mainly about the plants used in veterinary practice. It is just an outcome of meticulously studied literature on *Ayurveda*, veterinary, and folk medicine along with a number of published scientific research articles. It is a unique contribution of scientists of the C.C.R.A.S., New Delhi, India, in the field of veterinary medicine. This book is in the English language for its global understanding.

This book is comprised of the first 40 chapters, which are arranged alphabetically as per the animal diseases, starting with the abscess and ending with the yoke gall. Every chapter starts with a brief introduction to the disease, including etiopathogenesis, diagnostic method, and general treatment. It is followed by beneficial information on particular medicinal plants used in that disease. It is thoroughly presented in a tabular form. The table contains the data about plants' scientific names, families, regional synonyms, distribution, and botanical descriptions, followed by a method of therapeutic preparation and the mention of specific parts used in preparation along with its indications and dose in the animal's species. It covers extensive veterinary diseases like bloat, abdominal

pain, internal and external parasite infestations, fungal infection, indigestion, mastitis, wounds, and ulcers. Apart from that, the two chapters (41st and 42nd) are comprehensively devoted to topics like antiseptics-disinfectants and galactogues. The medicinal plants like *Nimba* (*Azadirachta indica* A. Juss), *Haridra* (*Curcuma longa* L.), *Guggulu* (*Commiphora wightii* Arn. Bhandari) etc. are mentioned in detail under the chapter Antiseptics and disinfectants. Whereas, in Galactogogues chapter, plants like *Latakasturi* (*Abelmoschus esculentus* L. Moench), *Vriddhadaruka* (*Argyreia nervosa* Burm f. Boj.), *Shatavari* (*Asparagus racemosus* Willd.), *Mandukparni* (*Centela asiatica* L.), *Asthishrinkhala* (*Cissus quadrangularis* L.), *Narikela* (*Cocos nucifera* L.), *Ashwagandha* (*Withania somnifera* L. Dunal) etc. are described in length. After 42 chapters, there is an alphabetically arranged list of 126 references that take accounts of ancient books of *Ayurveda*, folk medicine, Ethno-veterinary practices, botany, and various published articles in journals.

The high-quality paper material is used for book printing and depicts only a few photographs on the front cover page. The accumulation of diseased animals and plant pictures can be considered for the next edition. At the same time, the repetition of the plant's botanical descriptions resulted in stretching out this book. Moreover, for better orientation of readers, the botanical or *Ayurveda* alphabetical plant name-wise list can be supplemented as an appendix.

Overall, this is a unique book that provides exclusive information on *Ayurveda* remedies in veterinary practices and is used as a referencing resource in the field of veterinary *Ayurveda*. The book offers ample data about 313 medicinal plants belonging to 92 families [Table 1], used in various ailments. Among them, the maximum plants belong to *Fabaceae, Euphorbiaceae, Asteraceae, Lamiaceae, Solanaceae, Apiaceae, Poaceae, Rutaceae, Apocyanaceae* and *Malvaceae* family. Hence, based on the frequency of plant families cited for veterinary diseases, the plants like *Nimba* (*Azadirachta indica* A. Juss.), *Haridra* (*Curcuma longa* L.), *Kumari* (*Aloe vera* (L.) Burm.f.), *Rasona* (*Allium sativum* L.), *Tulasi* (*Ocimum tenuiflorum* L.), *Sitaphala* (*Annona squamosa* L.), and *Shunthi* (*Zingiber officinale* Rosc.) can be prioritised in veterinary practices [Table 2] mentioned in this book. Apart from the plant sources, animal products like *Kshira* (cow milk), *Takra* (buttermilk), *Grita* (Ghee), egg-white, etc., and common salt, *Gandhaka* (sulfur), *Kajjali* (red oxide of mercury), limestone powder, and charcoal, etc. are also mentioned for the treatment of animals.

It is also recommended that the libraries of all veterinary and animal sciences universities and college institutes must have this book as vets are taught plural medicine at universities, viewing herbs, nutraceuticals, *Ayurveda* and biomedicine as essential strategies in animal health care.[5] This book is helpful for getting in-depth information about herbal remedies in animal health that can be utilised for a selection of research problems under veterinary sciences.

For online punching of this book, one can follow the link -https://www.amazon.in/Review-Medicinal-Plants-Veterinary-Practices/dp/B0745H.

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Table 1: Number of plants of various families mentioned in this book.

Sr.No.	Name of Family	No. of Plants	Sr.No.	Name of Family	No. of Plants	Sr.No.	Name of Family	No. of Plants
1.	*Acanthaceae*	6	**32.**	*Cyperaceae*	2	**63.**	*Oleaceae*	2
2.	*Aizoaceae*	1	**33.**	*Dilleniaceae*	1	**64.**	*Papaveraceae*	3
3.	*Alangiaceae*	1	**34.**	*Dioscoreaceae*	1	**65.**	*Pedaliaceae*	2
4.	*Amaranthaceae*	6	**35.**	*Dipterocarpaceae*	1	**66.**	*Phyllanthaceae*	2
5.	*Amaryllidaceae*	1	**36.**	*Ebenaceae*	3	**67.**	*Pinaceae*	1
6.	*Anacardiaceae*	4	**37.**	*Ehretiaceaea*	1	**68.**	*Piperaceae*	3
7.	*Annonaceae*	2	**38.**	*Ericaceae*	1	**69.**	*Plumbaginaceae*	1
8.	*Apiaceae*	9	**39.**	*Euphorbiaceae*	14	**70.**	*Poaceae*	9
9.	*Apocyanaceae*	8	**40.**	*Fabaceae*	38	**71.**	*Punicaceae*	1
10.	*Araceae*	1	**41.**	*Flacourtiaceae*	2	**72.**	*Ramnaceae*	1
11.	*Arecaceae*	4	**42.**	*Fumariaceae*	1	**73.**	*Ranunculaceae*	2
12.	*Aristolochiaceae*	2	**43.**	*Gentianaceae*	4	**74.**	*Rhamnaceae*	1
13.	*Asclepiadaceae*	5	**44.**	*Icacinaaceae*	1	**75.**	*Rosaceae*	2
14.	*Asteraceae*	12	**45.**	*Lamiaceae*	11	**76.**	*Rubiaceae*	5
15.	*Bignoniaceae*	1	**46.**	*Lauraceae*	3	**77.**	*Rutaceae*	9
16.	*Bixaceae*	1	**47.**	*Lecythidaceae*	1	**78.**	*Salvadoraceae*	2
17.	*Bombacaceae*	1	**48.**	*Liliaceae*	6	**79.**	*Sapindaceae*	2
18.	*Boraginaceae*	3	**49.**	*Linaceae*	1	**80.**	*Sapotaceae*	3
19.	*Brassicacea*	5	**50.**	*Loganiaceae*	1	**81.**	*Scrophulariaceae*	3
20.	*Burseraceae*	2	**51.**	*Lythraceae*	2	**82.**	*Simaroubaceae*	2
21.	*Cactaceae*	1	**52.**	*Magnoliaceae*	1	**83.**	*Smilaceae*	1
22.	*Cannaceae*	1	**53.**	*Malvaceae*	8	**84.**	*Solanaceae*	10
23.	*Capparaceae*	2	**54.**	*Menispermaceae*	7	**85.**	*Theaceae*	1
24.	*Capparidaceae*	1	**55.**	*Moraceae*	5	**86.**	*Tiliaceae*	2
25.	*Caricaceae*	1	**56.**	*Moringaceae*	1	**87.**	*Ulmaceae*	1
26.	*Chenopodiaceae*	2	**57.**	*Musaceae*	1	**88.**	*Urticaceae*	1
27.	*Combretaceae*	7	**58.**	*Myrsinaceae*	1	**89.**	*Verbenaceae*	4
28.	*Convolvulaceae*	3	**59.**	*Myrtaceae*	5	**90.**	*Vitaceae*	2
29.	*Crassulaceae*	1	**60.**	*Nelumbonaceae*	1	**91.**	*Zingiberaceae*	4
30.	*Cucurbitaceae*	6	**61.**	*Nyctaginaceaea*	2	**92.**	*Zygophyllaceae*	2
31.	*Cucutaceae*	1	**62.**	*Ochnaceae*	1			

Table 2: Names of plants and diseases prioritized for veterinary clinical practice in this book.

Sr.No.	Name of Plant (*Dravya*)	Latin Name	Name of Veterinary Diseases in which Mentioned
1.	*Nimba*	*Azadirachta indica* A. Juss.	Abscess, Bacterial infections, Black quarter, Bleeding, Coughing & Breathing problems, Ephemeral Fever, External Parasite Infestations, Lice Infestation, Tick Infestation, Insect Repellents, Fever, Foot & Mouth Disease, Foot Rot, Fungal infections, Impetigo, Inflammation, Internal Parasite Infestations, Mastitis, Uterine Prolapse, Wounds & Ulcers, Sores, Maggot Wounds, Antiseptics & Disinfectants
2.	*Haridra*	*Curcuma longa* L.	Abscess, Anorexia, Bacterial infections, Bleeding, Conjunctivitis, Constipation, Coughing & Breathing problems, Ephemeral Fever, External Parasite Infestations, Tick Infestation, Fracture, Inflammation, Mastitis, Rheumatism, Sprain, Uterine Prolapse, Wounds & Ulcers, Sores, Ulcers, Yoke Gall, Antiseptics & Disinfectants
3.	*Kumari / Ghrita Kumari*	*Aloe vera* (L.) Burm.f.	Burns, Conjunctivitis, Constipation, Coughing & Breathing problems, Insect Repellents, Indigestion, Estrogenics, Inflammation, Internal Parasite Infestations, Mastitis, Rheumatism, Wounds & Ulcers, Ulcers
4.	*Rasona*	*Allium sativum* L.	Anorexia, Bloat/Tympany, Coughing & Breathing problems, Ephemeral Fever, Fever, Foot & Mouth Disease, Fungal infections, Indigestion, Aphrodisiacs, Inflammation, Mastitis, Mineral Deficiency, Wounds & Ulcers, Warts
5.	*Tulasi*	*Ocimum tenuiflorum* L.	Bacterial infections, Bleeding, Bloat/Tympany, Conjunctivitis, Coughing & Breathing problems, Fever, Foot & Mouth Disease, Inflammation, Mastitis, Wounds & Ulcers, Sores, Maggot Wounds
6.	*Sitaphala*	*Annona squamosa* L.	Bleeding, Bloat/Tympany, External Parasite Infestations, Lice Infestation, Tick Infestation, Insect Repellents, Foot & Mouth Disease, Foot Rot, Internal Parasite Infestations, Wounds & Ulcers, Maggot Wounds
7.	*Shunthi*	*Zingiber officinale* Rosc.	Anorexia, Bleeding, Bloat/Tympany, Coughing & Breathing problems, Ephemeral Fever, Fever, General Debility, Indigestion, Internal Parasite Infestations, Mineral Deficiency, Rheumatism, Sprain, Galactogogues