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Ethno-veterinary methods used by the poultry producers in the Kymore Plateau region of Madhya Pradesh

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ABSTRACT

A study was conducted to know about the ethno-veterinary methods used by poultry producers (commercial and backyard) in the Kymore Plateau region of Madhya Pradesh's Jabalpur district. A pre-structured questionnaire was developed for this purpose and 132 poultry farmers from the Shahpura, Kundam, Patan, and Jabalpur blocks of the Jabalpur district were interviewed directly. Direct perception, town walks, meeting passers-by, group meetings and gatherings with critical sources were also used to obtain information (i.e., customary pioneers, augmentation specialists and executives of village improvement advisory groups). The interviews were conducted in Hindi, the local language. Herbs/plants/parts of plants such as turmeric, garlic, guava, custard apple, ginger, pomegranate, sahjan, bamboo, and tobacco are used by poultry farmers for the treatment of different diseases, according to ethno-veterinary information and traditional management practice. The main constraints of poultry producers in the research study areas were poor disease prevention, control, and lack of disease awareness and management abilities. Programs should be designed in such a way that research and extension activities are focused on identified constraints. Aside from that, farmer skill development through training and farm service enhancement are critical. However, further research, documentation, and validation are required before these ethno-veterinary methods can be implemented on a large scale.

Keywords: Diseases, Ethno-veterinary practices, Management, Poultry.

INTRODUCTION

In 2019, India's total poultry population is 851.81 million (increased by 16.8 percent over previous census). The total number of backyard chickens is 317.07 million (increased by 45.8 percent over previous census). The country's total commercial poultry population is 534.74 million (up 4.5 percent from the previous Census) (20th Livestock Census). Poultry farming is as old as India's civilization, requiring minimal area, low initial investment, quick returns, and a well-distributed turnover throughout the year. Infectious disorders such as Newcastle disease, fowl pox, and other infections are becoming more common in India as native chicken raising becomes more commercialised. Ethno-veterinary medicine is commonly practised as traditional knowledge by poor village farmers to control many poultry diseases. Indigenous traditional knowledge (ITK) refers to a body of knowledge, practises, and beliefs formed over centuries of observation and experience. This knowledge has been important for the survival of society in their surroundings since it has enabled societies to discover resources and items that are essential for their survival. Second, such knowledge has been and continues to be applied to the conservation and enhancement of biodiversity [1]. The importance of ITK in ensuring sustainable livelihoods and national development is well acknowledged. Ethno veterinary medicine may be deemed sustainable since it is cost-effective, culturally acceptable, and environmentally friendly. Ethno-Veterinary medicine is a branch of science that studies traditional knowledge, methods, skills, and practises for treating various animal ailments [2]. Globalization has encouraged people to abandon their indigenous knowledge in favour of western knowledge by promoting universal ideals and ideas [3]. However, financial reliance on domesticated animals, a lack of effective veterinary infrastructure, and other factors have driven local farmers to use their indigenous expertise to care for and maintain their livestock herd even today.

The Indian government recently made tremendous progress in medicinal plant conservation and reached exciting milestones in phytochemical development. Farmers (conservation), scientists (pharmacological characterisation), and pharmaceuticals (large-scale extraction and drug formulation) can all work together to help. The Indian Council of Agricultural Research (ICAR) began collecting, documenting, and validating indigenous technical knowledge (ITK), resulting in a total of 595 veterinary ITKs being collected and recorded from diverse sources. A large number of these ITKs (48) were recommended for further research, and some have showed therapeutic and ameliorative potential. A total of 158 plants have been identified, with 50 of them having been tested for anti-parasitic activity. The potential efficacy of some of the traditional techniques utilised in certain illnesses has been validated, especially as an additional therapy.

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In light of the foregoing, the current study will document the poultry farmers' ethno-veterinary practises and collect baseline data on management and main health restrictions in chicken farming in the Kymore Plateau region of Jabalpur district in Madhya Pradesh.

METHODOLOGY

The present study was conducted under the Certified Livestock Advisor (Poultry) programme (Module III) conducted by ICAR-Directorate of Poultry Research and MANAGE, Hyderabad

(Telangana) to discover the ethno-veterinary information from all categories of poultry farmers (commercial and backyard) in Kymore Plateau region of Jabalpur district in Madhya Pradesh. The study was conducted mainly in villages of Sihora, Kundam, Patan and Jabalpur blocks of Jabalpur District (Madhya Pradesh) as shown in Figure 01. Jabalpur is situated at 23.17° N latitude and 79.57° E longitude at 410.87 MSL in the southern part of second agro-climatic zone, including Satpura plateau and Kymore hills. It has tropical climate with average rainfall of 1241 mm.

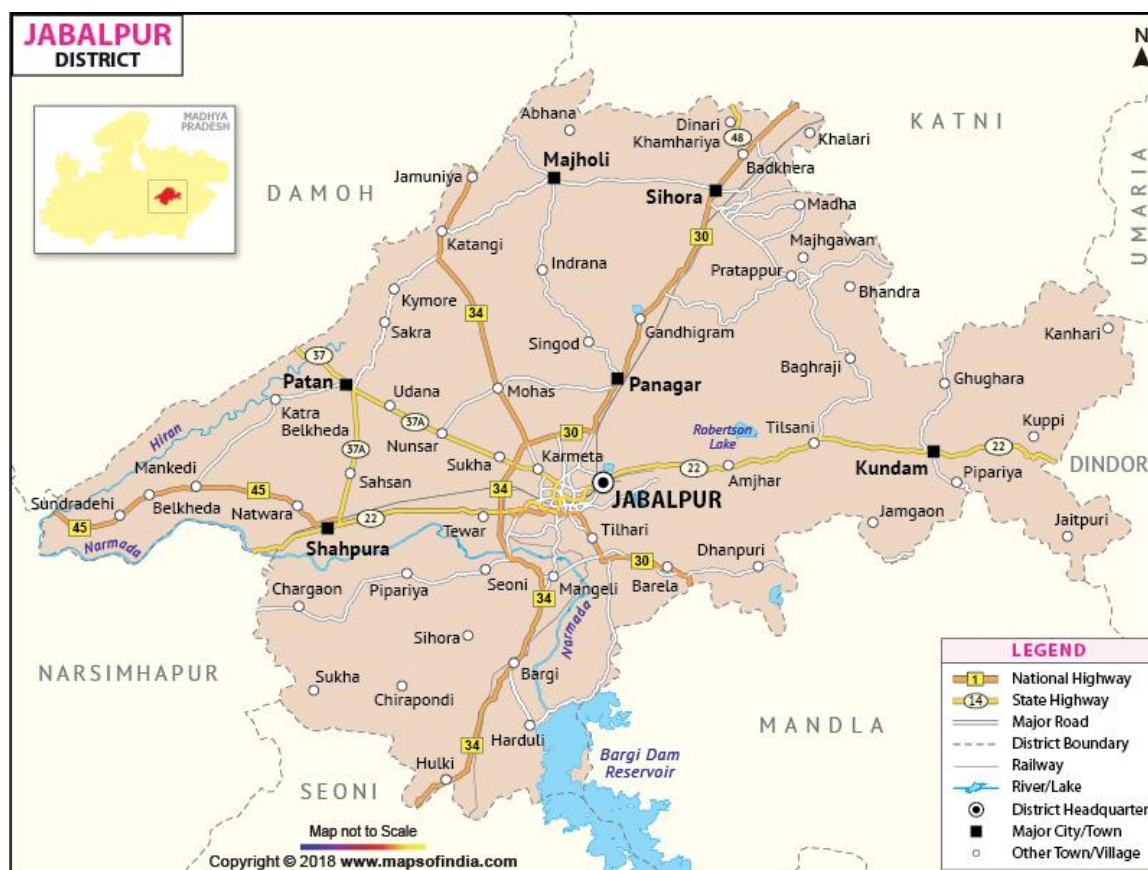


Figure 01: Map of Jabalpur district (M.P.) showing different blocks

In this study, information was acquired from 132 poultry farmers in the study region who have extensive knowledge of medicinal herbs via a pre-arranged direct contact interview. Direct observation, village walks, passers-by interviews, group interviews, and meetings with key informants were also used to acquire data (i.e., customary pioneers, augmentation specialists and executives of village improvement advisory groups). The interviews were conducted in Hindi, the local language. Ethno-veterinary information and traditional managerial practise for treating poultry illnesses were also collected, together with the local nomenclature, parts used, preparation methods, and mode of administration processes. The survey was conducted using a pre-planned interview schedule. A standardised questionnaire was carefully constructed for selected farmer respondents for this objective. General information, knowledge on how to handle hens, health care, kind and manner of medicinal plants used to cure chicken illness, losses due to diseases, and other questions were asked. Chicken management and biosecurity were observed, and disease was identified through a group discussion. Farmers identify diseases using their local names and symptoms as indicated in the questionnaire format.

RESULTS AND DISCUSSION

The purpose of this study was to collect ethno-veterinary data from all types of chicken producers (commercial and backyard) in the Kymore

Plateau region of Madhya Pradesh's Jabalpur district. Ethno-veterinary information and traditional managerial practise for treating chicken illnesses, including the local name, parts used, preparation methods, and mode of administration processes, were also collected and are provided in Tables 01 and 02.

Ethno veterinary plants used for treatment of poultry diseases:

Plants which are used in poultry health management are presented in Table 01. Chicken producers discovered eighteen plant species/parts of plants/plant produce for the treatment and control of poultry illnesses and parasites. In backyard poultry no farmers vaccinate their flocks. As a result, disease outbreaks are common, resulting in substantial mortality, morbidity, and financial losses for farmers. Similarly, commercial medicines are also not readily accessible to the farmers at village level. The findings revealed that ethno-veterinary methods were commonly practised in communities, particularly in distant places where medications and vaccines were difficult to get. Musa et al. (2008) found that 53.25 percent of backyard poultry farmers in Nigeria employed ethno-veterinary medication to treat chickens with Ranikhet disease, which is similar to the current findings^[4]. Gueye (1999) discovered that vaccination was not done as well in backyard poultry (also known as family poultry) as it was with normal Western-type vaccines^[5]. However, while vaccination rates in backyard poultry are low, veterinary access is improving in most

home flocks [6]. Decoction, cold water extract, fumigation, dried powder of seeds, leaf paste, and juice were found to be common ethno-veterinary medicines in the current investigation. Toyang *et al.* (2007) also confirmed same findings in poultry [7].

Singh *et al.* (2019) reports that a watery extract of chopped bulbs and leaves of garlic is utilised as a dewormer in backyard poultry [8]. They claimed that garlic might be used in poultry to improve gastrointestinal health and immunity. As reported in our study, madhumalati, pomegranate, bamboo leaves, and tobacco can also be utilised for deworming. In this study, poultry producers employed guava, blumea camphor, custard apple, ginger, and sahan for wound healing. Adamu (2015) supported these findings as an ethno-veterinary practise of small-scale and backyard chicken rearing in several Ethiopian locations. Farmers utilise cherubic (harad), ginger, and turmeric in chicken to treat respiratory tract infections, according to the findings of this study [9]. Gouda and Bhandary (2018) discovered that using turmeric in poultry feed functions as a natural antibiotic and provides another technique of feeding in the poultry diet, which supports our findings [10].

Traditional managerial practice used in poultry farming

The use of bamboo baskets to grow chicks in the winter season is a traditional management strategy used by poultry breeders. The chicks are kept under the bamboo basket, which is covered with a gunny bag at night and freed during the day. This will protect the chicks to be affected due to the cold waves during night. To repel mosquitoes and flies, neem leaves are burned in the chicken shed and neem smoke is allowed to disperse. Lemon grass leaves are used to keep mosquitoes and flies away from the chicken shed. The Kadaknath poultry breed do not hatch the eggs. As a result, the farmers collect Kadaknath bird eggs and have their eggs hatch by their local (indigenous) birds.

The main restrictions of poultry producers in the research areas were poor disease prevention and control, as well as a lack of disease awareness and management abilities. Programs should be designed in such a way that research and extension activities are focused on identified restrictions. Aside from that, farmer skill development through training and agricultural service enhancement are critical

Table 1: Ethno veterinary plants/ part of plants used for treatment of poultry diseases

Local name	English name	Botanical name	Family	Parts used	Method of preparation	Symptoms of disease treated/ purpose of use	Possible disease
Lahsun	Garlic	<i>Allium sativum</i>	Amaryllidaceae	Leaves and bulbs	The bulbs and leaves of garlic are minced and watery extract given to the birds	Deworming	Anthelmintic
Amrud	Guava	<i>Psidium guajava</i>	Myrtaceae	Unripened fruit and leaves	Use of un-ripened fruit or grinded leaves on wound	Wound healing	Wound
Nirgundi	-	<i>Vitex negundo</i>	Lamiaceae	Leaves, barks, seeds	Aqueous extract of leaves, barks and seeds mixed with equal amount of honey	Wounds, ticks and lice	Ecto-parasites
Madhu malati	Rangoon creeper	<i>Quisqualis indica</i>	Combretaceae	Seeds	Dried and grinded seeds may be used either in water or in feed	Deworming	Anthelmintic
Nagai kapur	Blumea camphor	<i>Blumea balsamifera</i>	Asteraceae	Leaf	Grinded leaf paste may be applied on wounds	Wound and injury healing	Wound
Sitaphal	Custard apple	<i>Anona squamosa</i>	Annonaceae	Leaf	Grinded leaf paste may be applied on maggots wounds	Wound healing	Wound
Adarak	Ginger	<i>Zingiber officinale</i>	Zingiberaceae	Rhizome	Dried rhizome minced with water and applied on wound	Antiseptic	Wound healing
Anar	Pomegranate	<i>Punica granatum</i>	Lythraceae	Root and bark decoction	The root and bark is boiled in water and used in poultry	Deworming	Endoparasites
Baans	Bamboo	<i>Bambusa spinosa</i>	Poaceae	Leaf decoction	The leaf is boiled in water and used in poultry	Effective in worms infestation and diarrhoea	Endoparasites and diarrhea
Laajwanti	Bashful mimosa	<i>Mimosa pudica</i>	Fabaceae	Seed powder	The powered seed mixed with water and applied on affected part	Wounds and sores	Wound healing
Munga/ Sahjan	Drumstick	<i>Moringa oleifera</i>	Moringaceae	Grinded leaves	Fresh grinded leaves mixed either with ghee or coconut oil and applied on affected part	Wounds and cuts	Wound healing
Haldi	Turmeric	<i>Curcuma longa</i>	Zingiberaceae	Decoction of rhizome	Rhizome is boiled in water and allowed to drink for treatment	Cough and cold	Respiratory tract infection
				Fresh juice of rhizome	Juice of rhizome is used to drink	Antiseptic / Anthelmintic	Internal antiseptic and dewormer
				Turmeric powder	Turmeric powder mixed with coconut oil or ghee and applied over wound	Wounds and cuts	Wound healing
Tambakoo	Tobacco	<i>Nicotiana tabacum</i>	Solanaceae	Leaves	The tobacco leaves is soaked overnight in water and that water is used to drink in poultry	Anthelmintic	Endoparasites
Gur	Jaggery	-	-	-	Jaggery mixed with water and allow to drink poultry	Depression and poor appetite	Gumboro disease
Harad	Chebulic	<i>Terminalia chebula</i>	Combretaceae	Seeds	Harad, haldi and adrak are mixed and grinded and used in poultry	Cough and cold	Respiratory tract infection
Haldi	Turmeric	<i>Curcuma longa</i>	Zingiberaceae	Rhizome			
Adrak	Ginger	<i>Zingiber officinale</i>	Zingiberaceae	Rhizome			
Fitkari	Alum	-	-	Powder	Alum powder is used either as such or mixed with water	Antiseptic	External antiseptic

Table 2: Traditional managemental practice used in poultry farming

S. No.	Managemental practices used in poultry farming
1	Bamboo basket is used to rear chicks in winter season. The chicks are kept under the bamboo basket and basket is covered with gunny bag in the night hours and let loosed in the day hours. This will protect the chicks to be affected due to the cold waves during night.
2	Neem leaves are burnt in the poultry shed and neem smoke are allow to spread in poultry shed to repel mosquito and fly.
3	Lemon grass leaves are used in the poultry shed to repel mosquito and fly.
4	The Kadaknath poultry breed do not hatch the eggs. So, the farmers collect the eggs from Kadaknath birds and get hatch their Kadaknath egg by their local (desi) birds.

CONCLUSION

Because of its vast size and varying climatic conditions across the country, India boasts a diverse animal and plant biodiversity. Some of the plants have therapeutic properties and are used to treat a variety of human and animal illnesses. According to the findings of this study, poultry farmers employ herbs/plants/parts of plants such turmeric, garlic, guava, custard apple, ginger, pomegranate, sahjan, bamboo, and tobacco to treat various ailments. The main restrictions of poultry producers in the research areas were poor disease prevention and control, as well as a lack of disease awareness and management abilities. Programs should be designed in such a way that research and extension activities are focused on identified restrictions. Aside from that, farmer skill development through training and agricultural service enhancement are critical. However, more research, authentic documentation, and confirmation are required before these ethno-veterinary methods can be implemented on a large basis.

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Conflict of Interest

All the authors declare that they have no conflict of interest.

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