



Ethnoveterinary Remedies Used for the Management of Poultry Farm in Certain Villages of Assam

KEYWORDS

Ethnoveterinary, poultry farm, formulations, Assam

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ABSTRACT

Survey was conducted in certain villages (latitude 26.05°N and longitude 92.81°E) of Kamrup district, Assam under Dimoria developmental block from January, 2013 to April, 2014 to investigate the ethnoveterinary practices used for the management of poultry farm. A total of 15 plant species were reported, the extract of which were administered orally with different ingredients or alone. The purposes of use were to treat against respiratory disorders, excretory disorders, diarrhea as well as to enhance growth. Traditional practice of herbal medicines for poultry health management can diminish the cost of production thereby give more benefit to the farmers.

INTRODUCTION:

Growth in poultry sector can contribute to enhanced nutrition and poverty reduction in India, because a large share of the rural poor is dependent on poultry for food and income (Murthy and Madhuri, 2013). However, key challenges faced by this industry include high feed costs combined with supply shortage of corn, inadequate cold chain and transportation infrastructure, high vulnerability to disease outbreaks and highly volatile realizations affecting cash flows (Ghosh et al., 2011). In Assam, poultry production and management practice can be characterized by extensive poultry production system and the production of village chicken is low due to flock mortality by disease, predator and poor management practice.

Traditional animal healthcare practices, also called ethnoveterinary medicine, provide low cost alternatives in situation where western type drugs and veterinary services are not available or are too expensive (Galav et al., 2013). So many plant species have been reported as medicinal plants which are commonly practiced by the rural communities for different diseases in both animals and human beings. Medicinal herbs as potential sources of therapeutics aids have attained significant role in health system all over the world for both humans and animals not only in the diseased condition but also as potential material for maintaining proper health (Verma and Singh, 2008).

Review of literature reveals that traditional medicines have the potential to improve the growth as well as health status of the birds. Hence, there is a need for researchers to take inventory of common medicaments used by the local farmers in treating rural household chickens and determine their chemical properties, concentration and routes of application. Though ethnoveterinary practices are widely used in the management of poultry farm in Assam, but no documentation has been done on this aspects. This paper attempts to document the ethnoveterinary remedies used for the management of poultry farm in certain villages of Assam.

MATERIALS AND METHODS:

The study covers four villages of Kamrup district under Dimoria developmental block and a total of 25 poultry farms have been surveyed. The area lies between the latitude of 26.05°N and longitude of 92.81°E. The temperature ranges from 6° to 38°C, average rainfall is 1,600 mm per year

and relative humidity is 76.6% (Sharma and Sharma, 2010). Investigation was carried out from January, 2013 to April, 2014 to extract the knowledge about the traditional practices of various types of herbs or plant origin products as remedies for poultry farm management including health.

The data are mostly based on first hand information gathered from the farmers through personal eye observation for which questionnaire was made and distributed to the farmers to gather knowledge about the different natural products used, method of preparation, time of application, dose, formulation etc. The farmers were met in their homes to ask and see practically the preparation and administration of the formulations to the birds. The traditional management skills were also observed in their farms. All the plants used for ethnoveterinary remedies are tabulated systematically with their local name, scientific name and uses. The detail ingredients with volume/amount are also enumerated in this communication.

RESULT AND DISCUSSION:

Poultry management using different plant species:

The investigation reported a total of 15 plant species (Table-1), different parts of which are used in different purposes in poultry management by the farmers besides normal medicines and vaccines. Formulations of most of the plant parts are used mostly for the treatment of poultry diseases and to maintain the normal growth (weight). Few plants are used to maintain the farm hygiene, which is very much essential for optimum growth and less mortality. Ethnoveterinary practice of these plant species are mainly because of no side effects, high cost of synthetic drugs, easy method of preparation and administration etc. Adedeji et al. (2013) reported similar reasons in his review article on ethnoveterinary medicine in African organic poultry production. They also revealed the use of *Allium sativum*, *Carica papaya*, *Citrus aurantifolia*, *Azadirachta indica* to treat various poultry disease in Africa. It may mention that all these plant species are locally available in the villages of the Assam. Hence, the farmers use to practice these medicaments which will reduce the cost of production, and give more profit to the farmers. In the present study, extract of *Azadirachta indica* was used to treat against domestic pest infection and to decrease housefly growth. However, neem leaf meal (NLM) has nutritional and health improvement potential as a feed ingredient in broiler production (Bansu et al., 2012). The very common abnormalities observed by

the farmers were diarrhoea, weakness of bone, respiratory difficulties, sudden shock leading to death etc. Formulations or medicaments are mostly administered orally. Similar finding was observed by Gumbochuma et al. (2013) in his case study in Zimbabwe.

Table 1: Plants species used in the management of poultry farm and their purposes

Sl. No.	Local name	Scientific name	Part used	Purpose/Use
1	Dupar tenga	<i>Bryophyllum pinnatum</i> (Lam.) Pers.	Leaf	To treat for gaut disease, abnormal excretion
2	Kach kal	<i>Musa sapientum</i> L.	Fruit	To treat against excretory disorders
3	Pan	<i>Piper betle</i> L.	Leaf	To treat for gaut disease
4	Amita	<i>Carica papaya</i> L.	Fruit	To increase feeding for getting maximum weight.
5	Ada	<i>Zingiber officinale</i> Rosc.	Rhizome	To treat against Chronic Respiratory Disease
6	Kala jaluk	<i>Piper nigrum</i> L.	Seed	To treat against Chronic Respiratory Disease
7	Naharu	<i>Allium sativum</i> L.	Bulb	To treat against Chronic Respiratory Disease
8	Sajina	<i>Moringa oleifera</i> Lam.	Leaf	To resist against high temperature
9	Ma-	<i>Azadirachta indica</i> A. Juss.	Leaf	To treat against domestic pest infection and also useful to decrease housefly population
10	Bhim kal	<i>Musa bulbisiana</i> Colla.	Fruit	To increase energy and weight, also decrease daily feed consumption
11	Matimah	<i>Vigna mungo</i> (L.) Hepper.	Seed	To increase energy and weight
12	Sayabin	<i>Glycine max</i> (L.) Merr.	Seed	To increase energy and body weight
13	Halodhi	<i>Curcuma longa</i> L.	Rhizome	To get fine flesh, treat against excretory disorder, prevent lamp condition
14	Gulnemu	<i>Citrus aurantifolia</i> (Christm.) Swingle	Fruit	To resist high temperature during summer
15	Bandhakobi	<i>Brassica oleracea</i> L.	Leaf	As an alternative of daily normal feed

Formulations made and their application:

- Bryophyllum pinnatum:** Extract of 5 leaves is mixed with 50 gm of molasses and added 1 litre water (for 100 birds). Application: Once daily for three days.
- Musa sapientum:** Extract of 1 raw fruit is mixed with 1 litre water (for 100 birds). Application: Once daily till complete cure.
- Piper betle:** Extract of 5 leaves mixed with 50 gm of molasses and added 1 litre of water (for 100 birds). Application: Once daily for three days.
- Carica papaya:** Extract of boiled fruit (500 gm) is mixed with 1 litre water (for 100 birds). Application: One times daily for three days.
- Zingiber officinale:** Extract of 100 gm of ginger is mixed with 10 gm black piper. The mixture is added to 4 litres of water (for 100 birds). Application: When disease appears apply once a day for three days.

- Piper nigrum:** 10 gm of fruit is mixed with 100 gm ginger extract and added to 4 litres of water (for 100 birds). Application: When disease appears, apply once daily for three days.



Fig 1: A. Poultry growing in the farm. B. *Moringa oleifera* Lamk. C. *Bryophyllum pinnatum* (Lamk.) Pers. D. *Piper nigrum* L. E. *Piper betle* L. F. *Azadirachta indica* A. Juss. G. *Carica papaya* L. H. Extract of *Curcuma longa* L. I. Extract of *Bryophyllum pinnatum*. J. Bicycle tyre made feeding device for small chicks.

- Allium sativum:** Extract of 100 gm ginger mixed with 10 gm of black piper and 30 gm of Garlic. The mixture is added to 4 litres of water (for 100 birds). Application: When disease appears apply once a day for three days.
- Moringa oleifera:** Extract of Sajina leaves (100 gm) mixed with 3 litres of water (for 100 birds). Application: Once a day from 25 days old.
- Azadirachta indica:** Extract of 4 or 5 leaves of maha neem mixed with 50 gm of molasses and added to 1 litre water (100 birds). Application: Once in a week for whole rearing period.
- Musa bulbisiana:** Ripe banana is chopped and given to the birds in the feed tub. Application: Given after 25 days old.
- Phaseolus mungo:** 100 or 200 gm of matimah (for 100 birds). Application: Given normally after 30 days old.
- Glycine max:** 200 gm (for 100 birds) after chopping is mixed with normal daily feed. Application: Normally given after 30 days old.
- Curcuma longa:** Extract of 50 gm raw turmeric mixed with 2 litres of water (for 100 birds). Application: During chick development till growing to medium size.
- Citrus aurantifolia:** Extract of half piece citrus or 50 gm is mixed with 50 gm of molasses. The solution added to 1 litre of water (for 100 birds). Application: During summer seasons.
- Brassica oleracea:** Chopped cabbage supplied like daily feeds. Application: Commonly used as alternative feed to save normal feeds.

Apart from the above cited ingredients, some other materials like curd, molasses alone are found using commonly by the poultry farmers of the villages. According to the farmers, curd can enhance the growth of the birds thereby increase the final weight. Molasses on the other hand was fed to induce the birds to take plenty of water, as water

can prevent mainly the excretory disorders. However, from the above findings it is clear that formulations from different plant species can be used for ethnoveterinary remedies to various poultry diseases in a rural poultry farm. It not only helps in poultry farm management in remote area but at the same time increase the economic benefit by reducing the cost of production of the birds.

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