Content list available at http://epubs.icar.org.in, www.kiran.nic.in; ISSN: 0970-6429

Indian Journal of Hill Farming

June 2019, Volume 32, Issue 1, Page 92-95

Indigenous Technical Knowledge (Itk) Practiced by Dairy and Piggery Farmers in Meghalaya

M. Defenderson Shadap[1] • Sao Evalwell Dkhar[2*]

[1]Directorate of Agriculture, Shillong, Meghalaya

[2]College of Post Graduate Studies, Central Agricultural University, Umiam

ARTICLE INFO

Article history:
Received 26 July 2018
Revision Received 20 January 2019
Accepted 9 March 2019

Key words:
ITK, Livestock, Traditional, Documentation, Animal Husbandry.

ABSTRACT

Indigenous Technical Knowledge (ITK) in the field of animal husbandry and veterinary is a practical knowledge that has been developed from the experiences of the farmers who made use of their talent in solving some of their problems under their local conditions using locally available materials. ITKs are still in vogue in rural Meghalaya therefore identification and documentation of such indigenous practices is very important, lest they disappear or endanger to extinction. The study was conducted in two districts *viz*. East Khasi Hills and Ri-Bhoi districts taking two villages from each district. The information was documented using Focus Group Discussion and also through interviewing with the farmers who practiced ITK in their livestock management. ITKs on care and management such as healing of wounds, diarrhoea, foot and mouth disease, increasing body mass, bone fracture, *etc.* of dairy and piggery are recorded.

1. Introduction

The introduction of standardised technological packages has contributed a lot to the development of dairy and piggery enterprises in the state. But there is no denying the fact that only limited numbers of technologies developed or generated are diffused in the system and are being adopted by the farmers. The use of ITKs is very much in vogue in rural India and so also in rural Meghalaya. These Indigenous Knowledge practices have been percolating from one generation to another by oral transmission and considered to be the holistic approach for livestock management methodologies adopted by non-literate cultures. All over India, there are experienced and knowledgeable specialists who practice indigenous techniques but their knowledge is not well documented, merely being transmitted verbally from one generation to the next. ITK refers to the unique, traditional, local knowledge existing among people in a given community which have developed over time and continue to evolve.

Indigenous knowledge is not an abstract scientific knowledge. It is concrete and relies strongly on intuition, historical experience and directly perceivable evidence of benefits (Farrington and Martin, 1987). Traditional rural veterinary practices have been developed by making good use of locally available herbs/ herbal products/ other natural resources. Besides being cheaper, it is believed that such treatment is effective and free from side/harmful effects. For example it was reported that 19.30 per cent of ITKs used in Boro rice cultivation were highly effective and 43.86 per cent moderately effective (Talukdar *et al.,* 2012). Meghalaya is predominantly a hilly state. The livestock wealth of this state consists chiefly of cattle, buffaloes, sheep, goats, pigs and poultry. According to livestock census 2007, the state has 8.87, 0.22, 0.21, 3.65, 5.24 and 30.92 lakhs heads of cattle, buffaloes, sheep, goats, pigs and poultry respectively (GoM, 2012). There are around 470 personnel who include A.H. & Veterinary Officer and Veterinary Fields Assistant, 4 veterinary hospitals and 92 veterinary dispensaries in Meghalaya.

*Corresponding author: sao27evalwell@gmail.com

Keeping in view of the difficult hilly terrain and the insufficient technical manpower and veterinary institutions, the people developed or rather still use the traditional practices that are suitable to the local situation. With the dissemination of modern practices the indigenous practices have started to lose their background and also have eroded to a large extent. It is in this backdrop that documentation of such indigenous knowledge is important so as to preserve the potential values they possess, such as value for sustainable development (Mishra *et al.,* 2011) and also helping other people to live in harmony with nature in a suitable manner.

2. Methodology

The study was carried out in East Khasi Hills and Ri-Bhoi districts of Meghalaya during June-July 2013. Two villages from each identified district were purposively selected depending upon the concentration of livestock species as well as known to use indigenous technical knowledge for various practices among animals. A multistage random sampling was applied to draw the samples for the study and total of 40 livestock respondents were identified using nomination method. The villages under consideration include Umroi and Kyrdemkulai of Ri-Bhoi district and Umlyngka and Mylliem villages of East Khasi Hills district. Identified livestock respondents from each village were interviewed and documentation of ITKs related to piggery and dairy farming were performed. Focus group discussion methodology was adopted to identify and get the descriptions of the traditional practices prevalent in the selected villages. In order to confirm the plants or other ingredients or substances used to heal the ailments in animals they were requested to show them and observations were made to know the actual procedure of application or mixing of different ingredients in most of the cases.

ITK used/practiced by Piggery farmers

Care & Management	Description
Wounds (Both for pigs and cattle)	**i)** The soot (***pring***) which is collected from the chimney and *Zanthoxylum khasianum* **(*Jaiur*)** fruits which are pounded to powder are mixed together using Mustard oil to form a mixture. The mixture is topically applied on the worm/maggot infested wound. Apply twice daily for 1-2 days. Showed sign of recovery within 2-3 days. **ii)** Using ash of tobacco plants (*Nicotiana tabacum*) ***duma sla*** mixed with mustard oil and the paste is applied on the wound. Apply once or twice and the wound is healed within two days **iii)** Making a paste of crushed leaves of *Centella asiatica (**Khliang syiar**)* to apply on the affected area. Apply once a day and within two days the wounds recovered.
Dysentery/ Diarrhoea	**i)** Fresh leaves of marijuana (**bhang**) are given raw to the pigs. Another procedure of giving marijuana is by mixing the chopped marijuana leaves in the cooked food. It is given as and when the food is given to the pigs. **ii)** Juice of *Centella asiatica (**Khliang syiar**)* is either mixed in the food or given for direct consumption. **iii)** Fresh bark of *Myrica esculenta* (***Dieng Soh Phie bah***) is grounded and little water is mixed. The mixture is given to animal along with their food. **iv)** Fresh Leaves / bark of *Psidium guajava (**Soh pyriam**)* from which an extract is prepared and given to pigs.
Increase Body mass	The fermented rice (***jawa***) and other waste collected from the local alcohol processing unit is given to the four months and above pigs. The ***jawa*** is given together with the food and vegetable. This is given to increase the body weight of the pigs at a faster rate and would be ready for sale at fewer month.
Skin Rash	The bark of *Schima wallichii* (***diengngan***) is spread on the floor of pigsty. The itching makes the pigs to rub against the floor and thus the affected areas come in contact with the bark which help curing the skin rash
Fever	Rhizome of ginger crushed then mixed with mustard oil. The balm is applied by rubbing on the back of the pigs for two to three times

3. Result and Discussion

The indigenous technological knowledge practices practiced by piggery and dairy farmers of East Khasi Hills and Ri-Bhoi districts of Meghalaya were identified and described below:

Through this study it was also found that whenever there is a veterinary institution nearby, the famers are having less knowledge on the indigenous practices because they depend entirely on the modern medical aids available, the service of which is provided by the Animal Husbandry & Veterinary Department. In the far flung areas, the ITKs are still practiced but not in its entirety. Though some might have heard of the indigenous practice but they do not practice it as they believe in scientific approach and these farmers are usually in the age group of less than fifty years. The aged farmers are more inclined to practicing the indigenous knowledge as they are able to identify the herbs and know the methods of using such knowledge. Few other ITKs were not recorded because the farmers neither could show the herbs/resources due to unavailability during this season nor tell the local names of such herbs. It is very difficult to acquire indigenous knowledge which is regarded as secret or confidential. This brings more risk to losing the indigenous knowledge which is not documented but is stored in people's minds only. Some of the above ITKs documented are in conformity with findings of others such as Majhi (2008) where turmeric was used to cure bone fracture, (Amitendu *et al*., 2004) using common guava leaves for curing diarrhoea and *Centilla asiatica* for curing dysentery and (Punnussamy *et al.,* 2009) using powdered naphthalene to get away from lice and fleas.

Conclusions

The livestock farmers of Meghalaya have been practising indigenous knowledge since time immemorial. The documented ITKs for piggery and dairy showed the richness of the time-tested traditional knowledge. The ITKs cited, though not exhaustive, serve to underline the fact that there is a vast storehouse of knowledge among the rural livestock owners. According to livestock owners the ITKs are valid and effective but they need to be validated scientifically. By doing so it provides scientific rationality for use of ITKs in future. Considering the advantages of ITKs such as being cheaper, easily available and have lesser side effects, their use may be encouraged. While encouraging the use of ITKs, some modifications may be made to make them scientifically rational by blending with the modern veterinary drugs. Documenting these ITKs is of great significance to preserve them for generations to come and also make it available to other farmers who are in need of them.

ITK used/practiced by Dairy farmers

Care & Management	**Description**
Wounds	As described previously
Foot and Mouth Disease	**i)** *Zanthoxylum khasianum* **(*Jaiur*)** fruits are crushed to powder and then mixed with crushed dry tobacco leaves (*Nicotiana tabacum),* stirred in a small quantity of water. The mixture is applied on the foot of the cattle where there is infection. Apply for two times a day for two to three days **ii)** Mixture of soot (***pring***) and mustard oil and apply topically on the infected area. **iii)** Drops of Spent Mobil (**engine oil**) or phenyl are applied on the infected foot of the cattle. **iv)** The cattle is made to trample on the mud for sometimes and then made it to cross the fresh river or stream to and fro so as to wash the feet.
Bone fracture, Dislocation of bones	**i)** Paste of fresh rhizome of turmeric (*Curcuma domestica)* (**shynrai stem**) mixed with mustard oil is applied and bamboo stick is tied/clamped around the affected area or fracture bones **ii)** Banana pseudo-stem is massaged on the affected area in such a way that the water from the stem spread on the affected area.
Lice and fleas	**i)** Powdered naphthalene ball applied on the body, leaving it for some time and then washed with water.
Constipation	Mixture of black salt (**kala namak**) *i.e.* rock salt and water administered orally to the cow. This relieve intestinal gas and reduce constipation

Acknowledgements

We would like to acknowledge and give our admiration the farmers of Meghalaya for having a deep root in tradition and not forgetting the knowledge passed on from their fore fathers which can be a resource pool for further scientific advancements and innovations in agriculture and animal husbandry.

References

Amitendu D, Arya HPS, Tadu B, Goswami A (2004). Indigenous Technical Knowledge in Animal Husbandry, Livestock Research for Rural Development, 16(8)

Farrington J, Martin A (1987). Farmer participation in Agricultural Research: a review of concepts and practices. Agricultural Administration (Research and Extension) Network Discussion Paper No.19. Overseas Development Institute, London.

Majhi SK (2008). Indigenous Technical Knowledge for control of insect pests and livestock disorders. Indian J. of Traditional Know, 7(3): 463-465,

Mishra OP, Singh AK, Kumar S (2011). Indigenous Knowledge of Bihar Farmers. Journal of Community Mobilization and Sustainable Development, 6(1): 046-049,

Punnussamy K, Gupta J, Nagarajan R (2009). Indigenous Technical Knowledge (ITK) in dairy enterprise in coastal Tamil Nadu. Indian J. of Traditional Know, 8(2): 206-211.

Talukdar RK, Barman S, Hussain H (2012). Documentation and perceived rationale of ITKs utilized in Boro rice cultivation by farmers of Kamrup District of Assam. J. Acad. Indus. Res., 1(7): 412-415

Government of Meghalaya. (2012). Report on integrated sample survey for estimation of production milk, egg and meat year 2011-12. Department of Animal Husbandry and Veterinary. Shillong.