

## Original Research Article

# Awareness and Adoption of Indigenous Technical Knowledge among Livestock Owners of Bihar

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## ABSTRACT

High cost and side effect of modern veterinary drugs is one of the major concern for the livestock farmers of India. Our country is endowed with vast natural resources and indigenous technical knowledge (ITK) that has capacity to solve the problems of livestock owners. ITK is being used in almost all the parts of country that is being propagated through one generation to another generation through words of mouth. Lack of proper awareness of ITK and adoption of natural resources is one of the major issues towards its final adoption. Considering the need for effective propagation of ITK, the research was carried out in selected districts of Bihar followed by training of livestock farmers regarding treatment of different diseases of livestock through use of the selected natural resources. Further the extent of awareness and its adoption level was taken from structured schedule prepared for this purpose. It was found that awareness score was high for the use of Jamun and Mango bark for the control of diarrhoea (56%), Kalmegh leaves as antipyretics (40%), use of Harjor for fracture remedy (60%). However the awareness score was found highest for the use of Haldi Paste in wound management (66%). So far the adoption score was concerned, the use of Haldi Paste was adopted by maximum (62%) number of respondents in the area under study. Thus high awareness and adoption level of the ITK's indicates its cost effectiveness and easily availability in remote rural area and hence it requires further propagation among farming community through training and demonstration.

### Keywords

Indigenous  
Technical  
Knowledge,  
Natural Resource,  
Awareness,  
Adoption

## Introduction

The success of a development program depends upon local participation and familiarity with the indigenous farm technology, which helps the extension agents to understand and communicate with the local people. The importance of Indigenous technical knowledge (ITK) is hidden in this proverb. Indigenous technical knowledge has two powerful advantages over outside knowledge - it has little or no cost and is readily available (Kothari, 1995), secondly, ITK is found to be socially

desirable, economically affordable, sustainable, and involve minimum risk to research users and widely believed to conserve resources. Thus, ITK provides basis for problem solving strategies for local communities.

In addition, the awareness and adoption of ITK assures that the end user of specific development projects are involved in developing technologies appropriate to their needs (Warren, 1993). Learning from ITK

can improve understanding of local conditions and provide a productive context for activities designed to help the communities. Yet ITK is still an underutilized resource in the development activities.

It needs to be intensively and extensively studied and incorporated into formal research and extension practices in order to make rural development strategies more sustainable. Hence, special efforts are needed for its awareness and adoption among the farming community by formulating a proper strategy.

Indigenous technical knowledge (ITK) refers to the unique, traditional, local knowledge existing within and developed around the specific conditions of women and men indigenous to a particular geographic area (Grenier, 1998). ITK can also be defined as any information originated out of farmers experience which has practical utility in solving farmers problems which is feasible, profitable and socially acceptable and adopted farmers own conditions which moves from one generation to another by word of mouth (Sabarathnam, 1996).

## **Materials and Methods**

This study was conducted in purposively selected four districts of Bihar namely, Jehanabad, Patna, Bhagalpur and Munger. From each district 100 livestock owners were selected randomly from one block representing the district. Thus a sample size of 400 respondents were interviewed personally through semi-structured schedule for assessing their existing knowledge about ITK and its adoption by the respondents. The data so collected were analysed for meaning interpretation. The awareness and adoption score were estimated through frequency and percentage.

## **Results and Discussion**

The above table indicates that, most of the livestock owners (224) were aware of the ingredients (Sap of Banana plants and Bans leaves mixed with sugar) used as ITK to control diarrhoea. This practice was adopted by 56 percent of livestock owners.

In case of fever, high number of livestock owners (160) were aware about use of Kalmegh leaves and this practice was commonly adopted by 40 percent of respondents. So far the ITK in case of fracture was concerned, most of the livestock owners (240) were aware about the Harjor plant paste and this practice was adopted by 224 respondents which is apparent by table I and II. The level of awareness was 216 with regards to using ITK to control the constipation through Gumma leaves and its use found by 54 percent of the livestock owner under study.

In case of use of Endoparaciticides a considerably high numbers of livestock owners (192) were aware of the ingredients palas seeds used in indigeneous preparations and was also found adopted by 46 percent of the respondents. So far the use of ITK in management of wound was concerned it was found that most of the livestock owners (264) were shown their awareness towards use of Haldi paste and its use was also found adopted by 62 percent of livestock owners under study.

It was revealed from findings of this investigation that all the selected ITK's were found effective as per the observations made by the livestock owners. Its high adoption level further indicates low cost and high effectiveness as perceived by the farmers. Such study will provide scientific rationality with minimum cost of production for use of different ITK's in future.

**Table.1** Extent of awareness of Indigenous technical knowledge among livestock owners

Sl. No.	Indigenous Technical Knowledge (ITK)	Awareness level N= 400	
		Frequency	Percentage
<b>1.</b>	<b>Diarrhoea</b>		
i	Banana plant juice / juice of Bans ( <i>Bambusa arundinacea</i> ) mixed with Joggery	184	46
ii	Pulp of ripened Emali ( <i>Tamarindicus indicus</i> )	128	32
iii	Raktakambal leaves ( <i>Nymphaca nouchali</i> )	96	24
iv	Bark of Jamun, Unripe mango	224	56
<b>2.</b>	<b>Antipyretic</b>		
i	Stem and leaves of Kalmegh, boiled in water	160	40
ii	Grinded Roots of Apang ( <i>Achyramthes aspera</i> )	136	34
iii			
<b>3.</b>	<b>Fracture</b>		
i	Harjor plant ( <i>Cissamplelos quadrangularicus</i> ) paste	240	60
ii	Paste of Sahijan tree ( <i>Moringa oleifera</i> ) bark, lime and Haldi ( <i>Turmeric, Curcuma domestica</i> )	216	54
<b>4.</b>	<b>Constipation</b>		
i	Kadam leaves ( <i>Anthocephalus indicus</i> ) with molasses	168	42
ii	Mixture of Hartaki, Bahera and Amla (1:1:1)	192	48
iii	Seasum leaves	208	52
iv	Gumma leaves	216	54
v	Unripe Bel juice	192	48
<b>5.</b>	<b>Bloat</b>		
i	Dry Ginger/ Sonth and Black pepper mixed	232	58
ii	Mixture of Somraj ( <i>Centrathierum anthelminticum</i> ) and Indrajan ( <i>Wrightia tinctoria</i> )	160	40
<b>6.</b>	<b>Endoparacides</b>		
I	Bark leave of Dalim ( <i>Punita granatum</i> )	176	44
ii	Palas seeds	192	48
iii	Bark of Ashoka tree ( <i>Saraca Ashoka</i> )	120	30
iv	Saturated saline solution	104	26
<b>7.</b>	<b>Wound</b>		
i	Datura powder mixed with Karanj oil	192	48
ii	Haldi paste	264	66
iii	Neem leaf paste	248	62

**Table.2** Extent of adoption of Indigenous technical knowledge among livestock owners

Sl. No.	Indigenous Technical Knowledge (ITK)	Adoption level N= 400	
		Frequency (f)	Percentage
<b>1.</b>	<b>Diarrhoea</b>		
i	Banana plant juice / juice of Bans ( <i>Bambusa arundinacea</i> ) mixed with Joggery	168	42
ii	Pulp of ripened Emali ( <i>Tamarindicus indicus</i> )	128	32
iii	Raktakambal leaves ( <i>Nymphaca nouchali</i> )	88	22
iv	Bark of Jamun, Unripe mango	208	52
<b>2.</b>	<b>Fever</b>		
i	Stem and leaves of Kalmegh, boiled in water	152	38
ii	Grinded Roots of Apang ( <i>Achyramthes aspera</i> )	104	26
<b>3.</b>	<b>Fracture</b>		
i	Harjor plant ( <i>Cissamplelos quadrangularicus</i> ) paste	224	56
ii	Paste of Sahijan tree ( <i>Moringa oleifera</i> ) bark, lime and Haldi ( <i>Turmeric, Curcuma domestica</i> )	184	46
<b>4.</b>	<b>Constipation</b>		
i	Kadam leaves ( <i>Anthocephalus indicus</i> ) with molasses	120	30
ii	Mixture of Hartaki, Bahera and Amla (1:1:1)	184	46
iii	Seasum leaves	192	48
iv	Gumma leaves	208	52
v	Unripe Bel juice	216	54
<b>5.</b>	<b>Bloat</b>		
i	Dry Ginger/ Sonth and Black pepper mixed	216	54
ii	Mixture of Somraj ( <i>Centrathierum anthelminticum</i> ) and Indrajan ( <i>Wrightia tinctoria</i> )	144	36
<b>6.</b>	<b>Endoparacicides</b>		
I	Bark leave of Dalim ( <i>Punita granatum</i> )	136	34
ii	Palas seeds	184	46
iii	Bark of Ashoka tree ( <i>Saraca Ashoka</i> )	48	12
iv	Saturated saline solution	32	8
<b>7.</b>	<b>Wound</b>		
i	Datura powder mixed with Karanj oil	168	42
ii	Haldi paste	248	62
iii	Neem leaf paste	88	22

Since, the ITK's seems to be cheaper, locally and easily available in rural areas and have lesser side effects; the use of these ITK's may be encouraged by formulating proper strategy mainly through training and demonstration.

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