

**PERCEIVED EFFECTIVENESS OF INDIGENOUS TECHNICAL KNOWLEDGE AMONG
LIVESTOCK OWNERS IN BUNDELKHAND REGION OF UTTAR PRADESH**

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ABSTRACT

The study reveals that there is a significant difference in the perceived effectiveness of ITK and PST among livestock owners in nearly all the seven parameters, viz., cost, accessibility, compatibility, sustainability, adaptability, rationality and complexity in relation to all the three ailments, viz., bone fracture, arthritis and paralysis among livestock. Since the livestock owners perceive ITK as more favourably accepted among the rural communities owing to its cost effectiveness, local availability in the flora and fauna of the village, less complex in preparation and administration or application, compatible to social and cultural habitats and its prolonged use makes them sustainable in their mindsets.

KEY WORDS : indigenous technical knowledge, bone fracture, paralysis, arthritis.

INTRODUCTION

India has a very rich heritage of indigenous knowledge used for treating various ailments of human beings and livestock, which today is becoming extinct due to wide usage of modern medicines (Vivekanandan, 1993 and Yoseph, 2002). Several projects have been launched by government and non-government organizations for their documentation in order to accelerate research, planning and development (Dwivedi, 1998). Treatment of various livestock disorders, viz., digestive, respiratory, reproductive, etc is thought to be easy by feeding the animal a grinded mixture of several herbs, but treating bone fracture, arthritis and paralysis is quite uncommon in emergency situations in rural India. Hence an attempt was made to document indigenous practices on such three aspects and thereafter its perceived effectiveness in relation to modern scientific therapy was analyzed in respect to several parameters.

MATERIALS AND METHODS

This study was conducted purposively in Bundelkhand region of Uttar Pradesh. Bundelkhand inhabited by about 5 percent of the state's population is a semi arid and resource poor region, where rainfed extensive agriculture is commonly practiced. The average productivity of total livestock is very less leading to poor economic conditions of the livestock owners, thereby making them dependent on treating their livestock through usage of locally available herbs.

Four villages from each district, viz., Jhansi, Lalitpur, Jalaun, Hamirpur and Banda were selected purposively depending upon the concentration of livestock species as well as known to use indigenous technical knowledge for various ailments of livestock. Initially resource personnel's having good experience of treating animals for various ailments were identified to document indigenous practices for bone fracture, arthritis and paralysis, which were thereafter screened with the help of experts. Thereafter scientific methods for treating various ailments were enlisted parallel among indigenous practices and they were further exposed among 200 randomly selected respondents (ten from each village) to study the perceived effectiveness between indigenous technical knowledge (ITK) and parallel scientific technologies (PST) through structured interview

schedule in respect to seven parameters, viz., cost, accessibility, compatibility, sustainability, adaptability, rationality and complexity regarding the bone fracture, arthritis and paralysis in animals. These parameters were studied on a five point continuum, i.e., most favourable (MF), favourable to great extent (FGE), favourable to some extent (FSE), favourable to least extent (FLE) and not favourable at all (NF) and the scores assigned were 4,3,2,1 and 0 respectively. The calculated mean values of these scores were analyzed to study the perceived effectiveness of indigenous practices and scientific technologies among livestock owners.

RESULTS AND DISCUSSION

The indigenous practice adopted for treating bone fracture among small and large animals includes application of paste prepared from equal proportions of mehendi leaves (*Lawsonia enermis*), turmeric (*Curcuma longa*), harjor leaves (*Cissus quadrangularis*), gurhal leaves (*Hibiscus rosasinensis*) and cactus stem (*Opuntia ficus indica*) on the fractured area and support was provided with the help of bamboo sticks and tied tightly by means of cloth. However the results in table reveals a significant difference in the perceived effectiveness of ITK and PST among livestock owners at 1 per cent level of significance in respect of cost, accessibility, compatibility, sustainability and adaptability, 5 percent level in respect to complexity but there was no significant difference in respect to rationality. Nigam and Sharma (2010) have reported use of root bark powder of *Buchnania latifolia* mixed in cow milk to treat bone fracture of livestock in Jhansi district of Uttar Pradesh.

The indigenous practice commonly used for treating paralysis includes application of grinded paste prepared from 50 gms leaves of ishvarimul or Indian birthwort (*Aristolochia indica*), 50 gms of pipali (*Piper longum*), 25 gms of brahmi (*Bacopa monnieri*) and 8-10 flowers of palash (*Butea monosperma*) on the affected area of the animal. The results reveals a significant difference in the perceived effectiveness of ITK and PST among livestock owners at 1 percent level of significance among all the seven aspects, viz., cost, accessibility, compatibility, sustainability, adaptability, rationality and complexity.

The indigenous practice commonly used for treating arthritis involves feeding the animal grinded paste (@ 30 gms TID) prepared from mixture of 50 gms of greater galangal (*Languas galanga*), 25 gms of kuppi (*Acalypha indica*), 10 gms of camphor (*Cinnamonum camphora*), 50 gms of trifla (Mixture of equal proportions of *Terminalia balerica*, *Terminalia chebula* and *Embllica officinalis*), 75 gms of utran (*Pergularia daemia*), 50 ml of turpentine oil (*Syncarpia glomulifera*), 25 gms of pipali (*Piper longum*), 50 ml of alsii oil (*Linum usitatissimum*), Til (*Sesamum indicum*) and 25 gms of gugal (*Commiphora mukul*). However the critical perusal of table reveals that there is a significant difference in the perceived effectiveness of ITK and PST among livestock owners at 1 per cent level of significance in respect to all parameters except cost, which is significant at 5 per cent level. Galav, *et.al.* (2010) have reported application of til (*Sesamum indicum*) and sargua (*Moringa oleifera*) to treat arthritis of animals at Pushkar fair of Rajasthan.

These findings reveal that the livestock owners are more inclined to adopt indigenous practices due to their low cost as compared to modern allopathic therapies. Other predisposing factors includes easy availability of ingredients in the local flora and fauna of the village, no side effects, easy application on the affected portion, less complex in preparation as the ingredients are required to be mixed, grinded and applied on the affected portion. Such practices due to prolonged use have been adapted to the emotions, feelings, memories and impulses of the livestock owners as compared to scientific therapies. Since the practices were found to be highly effective in the absence of veterinary assistance, thereby making ITK more sustainable and rational as compared to PST.

However the available indigenous therapies were modified several times either by them or by their ancestors on the basis of experiences gained by them and found ITK's as more effective in rural settings where veterinary facilities are not available in emergency situations. This study further

Table : Mean value of perceived effectiveness of indigenous technical knowledge and their parallel scientific technology

Aspect	Parameter	Cost	Accessibility	Compatibility	Sustainability	Adaptability	Rationality	Complexity
Regarding Bone Fracture	ITK	2.93±0.049 ^a	2.14±0.050 ^a	2.94±0.047 ^a	2.95±0.047 ^a	2.93±0.049 ^a	1.89±0.082	1.45±0.090 [*]
	PST	1.23±0.053 ^b	1.49±0.081 ^b	1.22±0.053 ^b	1.31±0.101 ^b	2.07±0.103 ^b	1.75±0.058	1.19±0.047 ^{1*}
Regarding Paralysis	ITK	3.10±0.067 ^a	3.11±0.091 ^a	2.10±0.050 ^a	2.11±0.048 ^b	2.14±0.050 ^b	2.42±0.117 ^a	3.72±0.053 ^a
	PST	1.18±0.071 ^b	1.28±0.096 ^b	1.52±0.082 ^b	1.64±0.082 ^b	1.49±0.081 ^b	1.98±0.108 ^b	0.66±0.067 ^b
Regarding Arthritis	ITK	2.67±0.096 [*]	2.62±0.090 ^a	2.51±0.084 ^a	2.11±0.048 ^b	2.03±0.058 ^b	2.16±0.112 ^a	2.41±0.099 ^a
	PST	2.35±0.101 ^{b*}	1.25±0.103 ^b	1.58±0.105 ^b	1.67±0.080 ^b	1.11±0.075 ^b	1.72±0.103 ^b	1.87±0.097 ^b

a-b : Values bearing different superscripts within a column differ significantly ($P < 0.01$)

*a-b **: Values bearing different superscripts and (*) with in a column differ significantly ($P < 0.05$)

reveals that the Bundelkhand region is very rich in indigenous practices and similar studies shall be undertaken to cover the whole Bundelkhand region and other parts of the country to prepare a documentary of this authentic knowledge base. Experimental trials on several ITK's must to be conducted to identify the cost-effectiveness, accessibility, compatibility and sustainability in comparison to modern scientific therapies.

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