



## **THE INDIAN KNOWLEDGE SYSTEM: A WAY TO IMPROVE RESEARCH PRODUCTIVITY IN THE ANIMAL HUSBANDRY SECTOR**

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### **Abstract:**

*IKS is a systematic transmission of knowledge from one generation to the next. The ancestral knowledge will give us identity in the current regime of global intellectual property rights, regulation, and patent laws, preserving a pearl of received wisdom with enormous economic value. In the Vedic era, animals were considered wealth, whereas cow husbandry was a care point in lifestyle and economy along with sheep and goats. The Ministry of Education, Government of India established a division of IKS under the 'All-India Council for Technical Education in 2020', intending to promote interdisciplinary research on all sets of IKS for inculcating ancient knowledge. The productivity of research is the outcome of its utility for society. The traditional knowledge of animal husbandry has to be Preserved and disseminated to improve the productivity of farms and researchers working on it. With the help of this traditional knowledge, an academician may improve teaching skills and enhance productivity/outcome.*

**Keywords:** IKS, Animal Husbandry, Productivity.

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### **Introduction:**

Indian Knowledge System has a long history since Indian civilization has been there for a very long time with a long surviving civilization history, which ought to have documented knowledge. Based on experimentation, observation, experience, and analysis, the knowledge has evolved and comprises Jnan, Vignan, and Jeevan Darshan (MoE, 2023 and Mandavkar, 2023). However, most ancient knowledge was preserved and transmitted orally until a few centuries ago since paper and printing facilities were unavailable in those eras (Mahadevan, *et.al.*, 2022). Indian Knowledge System is the systematic transmission of knowledge from generation to generation. IKS is not about merely knowing about ancient knowledge; it is very important to document traditional knowledge, which is a manifestation of a human intellectual achievement over time, which is essential to make further progress. The ancestral knowledge will give us identity in the current global intellectual property rights, regulations and patent law regime. This preserves a received wisdom which gives us enormous economic value. Iftikhar (2023) in Hindustan Times reported that the Government of India will soon create IKS Wiki, an online repository involving students through a paid internship program to provide information on IKS, which could be the first state-sponsored initiative where youths will be encouraged to take up deep study on various topics related to IKS in Indian languages for

providing an authentic traditional Indian knowledge to learners.

Akhand Bharat has been a knowledge hub of the entire world (Sharma and Sharma, 1996) where two education systems were practiced viz. Vedic and Buddhist in Sanskrit and Pali Language respectively (Ghonge *et al.*, 2020) which began around the 3<sup>rd</sup> century B.C. The ancient University embodied Indian knowledge through multidisciplinary approaches like philosophy, music, Ayurveda and warfare skills. It focused more on moral values, ethics, and spiritualism to create a superior human character, intelligence, wisdom, and practical shape for students. Ancient Universities and scholars are a gold mine for shaping and improving higher learning and imparting vocational training in all branches (Mahesh *et al.*, 2023). The National Education Policy 2020 emphasized the promotion of IKS, highlighting the ancient education centers like Nalanda, Takshshila etc. to create a society with vibrant knowledge (Aithal and Aithal, 2019).

### **Animal Husbandry in Ancient Era:**

The first animals domesticated were dogs used for hunting, protection and companionship since human communities revolved around the hunter-gatherer paradigm in which wild animals were hunted. Animal husbandry was widely practiced in 5400 BCE and used as a workforce and food source. Horses were tamed by 4000 BCE, which became an essential component in warfare (Mark, 2022).

In the Vedic era, animals were considered as wealth, whereas cow husbandry was a care-point in lifestyle and economy along with sheep and goats. In the epic period, the treatment of various ailments using herbal medicines and surgical procedures was described. Nevertheless, significant progress was made in the Mauryan age, which preceded the period of Buddha and Mahavir, who preached non-violence towards animals. By this period, buffalo also became a recognized dairy animal. During the period of Ashoka, Veterinary science gained a new turn with the establishment of the first veterinary hospital (Singh, 2020). Ancient India created a process of education that mirrored the era's character: its social settings and cultural pragmatism (Singh, 2019).

### **Need of IKS in education:**

The necessity of the Indian Knowledge System as a part of mainstream education has been well-reported by Ghosh (2022). To inculcate ancient knowledge, the Ministry of Education, Govt. of India has established a division of IKS under the All-India Council for Technical Education in October 2020 with the objectivity of promoting interdisciplinary research on all sets of IKS, preserving and disseminating IKS for further research and societal applications. It will be engaged in spreading the rich heritage of our country and traditional knowledge of agriculture, Animal husbandry, basic sciences, Art and Literature, etc ([www.iksindia.org](http://www.iksindia.org)).

### **IKS research projects related to Agriculture and Animal Husbandry:**

According to the Division of IKS, Ministry of Education, Government of India, “the table below indicates the IKS research projects related to agriculture and animal husbandry.

Sr. No.	State Name	PI-Institute	Title	PI-Name
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1.	Meghalaya	“School of Natural Resource Management, College of Post Graduate Studies in Agricultural Sciences, (CAU-Imphal), Umiam”	“Revitalizing Indigenous Knowledge of Sustainable Farming Practices in North East India by Integrating Conservation, Research and Entrepreneurship”	Dr. Sanjay Swami
2.	Andhra Pradesh	“Central Tribal University of Andhra Pradesh, Vizianagaram”	“In Vitro Evaluation of Antioxidant free radical scavenging activity and Anti Proliferative properties of some indigenous Ayurveda Medical Plants used by Selected Tribes Groups of Andhra Pradesh”	Prof. T.V. Kattimani
3.		Indian Institute of Technology, Tirupati	“Evaluation of Various Traditional Indian Blood Purification (Raktamokshan) Medicines Using 3D Bio-Printed Microfluidic Organ-on-Chip Platforms”	M. Ravi Shankar
4.	New Delhi	Bhaskaracharya College of Applied Sciences (University of Delhi	“Development of Eco-friendly and Sustainable natural dyes from plant extract”	Siddharth Sirohi
5.	Tamil Nadu	SASTRA University, Thanjavur	“Impact of Satvik Food on the Gut-Microbiome Diversity: An Ayurgenomics Perspective”	Prakash Shankaran
6.		SASTRA Deemed to be University, Thanjavur	“Validation of Ayurvedic formulation as an Antibiotic Sparring Therapy against Urinary Tract infections in Cattle”	Dr. Saisubramanian Nagrajan
7.		SASTRA Deemed to be University, Thanjavur	“Study on the effect of Krimighna Ghana from Charaka Samhita in Treating Bovine Mastitis”	Dr. Shanker Syam Sundhar Panchapakesan
8.	Karnataka	The University of Trans-Disciplinary Health Sciences and Technology, Bengaluru	“A Study on the Efficacy of Pashu Ayurveda Formulations as Alternatives to Antibiotics in Bovine Infectious Conditions for Reduction of Antimicrobial Resistance (AMR) and Improve	Dr. Kumar S. K.

			Economics Status of Dairy Farmers in India”	
9.		Tumkur University, Bengaluru	“A Combinatorial approach towards the management of soil fertility, microbiome and plant health as per काश्यपीय-कृषि-पद्धति Kashyapiya-krishti Paddhati: A Scientific analysis of the Benefits of “मृत्तिका-जीव-मिश्रण” – Mrittika Jiva Mishrana”	Dr. R.G. Sharathchandra
10.	Gujrat	Atmiya University, Rajkot	“Development of Quality Biofertilizer using Cow Dung: Metagenomic Studies of Gir and Kankrej Breed”	Dr. Rohan Pandya
11.	Assam	Tezpur University, Napaam	“Microbial Interventions and Traditional Farming Practices for Sustainable Millet Production”	Dr. Nima D. Namsa
12.	Chhattisgarh	Dau Shri Vasudev Chandrakar Kamdhenu University, Durg	“A Clinical Study of Role of the Shastrokta Ayurvedic Aushadhi in the Management of <i>Krimi</i> (GI Worms) in Goats”	Dr. Rakesh Mishra
13.	Nagaland	Nagaland University, Nagaland	“Scientific Study of Zabo Farming System: A Farmer-Managed Traditional Irrigation System (FMTIS) under Hill Environment of Nagaland	Dr. Chitrasen Lairenjam

(Source: <https://iksindia.org/research-projects.php>)

### Courses available on IKS:

Various courses on IKS (four credit courses) are available on various online platforms like SWAYAM to get basic knowledge about IKS. These courses are conducted by Prof. B. Mahadevan, Dr. Vinayak Rajat Bhat, and Dr. R Venkata Raghavan, Indian Institute of Management Bangalore (IIMB), Chanakya University, Bangalore.

List of Courses:

- 1) Indian Knowledge System (IKS): Humanities and Social Science
- 2) Indian Knowledge System (IKS): Concepts and Applications in Science
- 3) Indian Knowledge System (IKS): Concepts and Applications in Engineering

### IKS and Productivity :

The productivity of any research is the outcome and its utility for society. Much experience-based research in our country is passed on orally or may be kept somewhere in the local language, or the literature is unavailable. Nevertheless, these are the tacit knowledge preserved and used by local people in day-to-day life an Indigenous knowledge. This ancient knowledge has to be preserved and documented for its propagation. In the current era of patent and IPR regimes, proper documentation is essential; otherwise, the ancient knowledge that we have orderly or/and use in day-to-day life can be claimed by others as their research outcome. For example, we all know that our farmers have used the neem as a pesticide for thousands of years. However, because we do not have any document or repository about neem as a pesticide a US company claimed it and got a patent. So, the traditional knowledge of India regarding neem as a pesticide has been patented by a US company. We need to upgrade and document our traditional knowledge to avoid such things. However, modern science neglected this fact, but the pharmaceutical industry has realised it (Subba Rao, 2006). Gupta (2011) reported that approximately 2000 patents related to Indian medicinal formulations were erroneously granted annually by various international patent offices. India has established the 'Traditional Knowledge Digital Library (TKDL)' in collaboration with 'the Council of Scientific and Industrial Research (CSIR)' and the Department of AYUSH. TKDL has a unique role in protecting the country's traditional knowledge from being claimed by other countries on using various medicinal plants. The TKDL has also enabled the cancellation and/or withdrawal of many wrongly claimed patents. This indicated that the academicians/ researchers must focus on preserving this knowledge.

#### **Conclusion:**

Document preservation and dissemination of traditional knowledge of animal husbandry practices are needed, which could help improve the productivity of farms and the researchers working on it. This will also protect Traditional knowledge from being claimed by other countries, which would be an outstanding achievement. With the help of this traditional knowledge, an academician may improve teaching skills and enhance productivity/ outcome.

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