

"Indian Global Leadership in Veterinary Science and Practice"

Context

- High disease incidence in cross-breed animals & high treatment costs
- Indiscriminate use of antibiotics and other veterinary drugs
- Consumer health seriously compromised
- Global demand for urgent solutions for AMR

Is aspiration for global leadership a pipe dream or sufficiently realistic

- **Can we think beyond fire fighting**
- **Leadership is earned only through effective performance**
- **What does India have to show w.r.t animal health management**

A rich ethno-veterinary health tradition exists in India.



Where to look for performance data

- Textual sources with clinical guidelines for diagnosis and herbal therapies like Mrugayurveda, Palakapya samhitha, Mathangaleela, Pakshi Ayurveda
- Hundreds of region specific traditional community practices for animal health

EVP IS WORKING!

Results of recent EVP results documented by NDDB across 16 milk unions



Other Ailments



S.No	Other Ailments	July 2018		Aug 2018		Sep 2018		Oct 2018	
		No.of Cases Treated with EVM	No.of Cases Cured	No.of Cases Treated with EVM	No.of Cases Cured	No.of Cases Treated with EVM	No.of Cases Cured	No.of Cases Treated with EVM	No.of Cases Cured
1	Agalactia	2	2					4	4
2	Anoestrus	698	587	949	761	1253	1005	1635	1191
3	Bloat	13	11	62	60	78	68	47	41
4	Blood in milk			18	17	9	8	18	18
5	Deworming	658	626			389	382	387	375
6	Diarrhoea	46	42	420	385	89	82	140	120
7	Ectoparasites/ticks			18	18	31	29	34	34
8	Endometritis					204	172	12	4
9	Fever	49	37	63	54	56	49	117	98
10	FMD foot lesions	5	5	33	33	88	70	60	52
11	FMD mouth lesions	20	19	36	34	57	49	69	62
12	Indigestion	15	15	10	10	78	68	44	41

Continue.....



Krishna Milk Union Vijayawada Andhra Pradesh



Repeat Breeding cases treated by EVM

Total no. of cases recorded	Total no. of Cases treated with EVM	Animals calved after EVM	Animals conceived, at various stages of pregnancy	% animal conceived
532	532	385	135	97.74 %

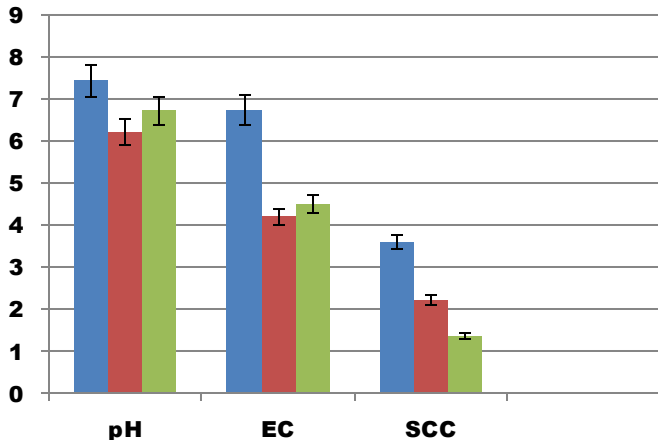
Cost effectiveness in comparison to antibiotics :-

Over all treatment cost of Repeat breeding cases by EVM is about Rs.50/- to Rs.75/-

While the treatment cost by antibiotics is about Rs.1000/- to Rs.1500/- with no guarantee on conception.

Insights from mode of action studies on Mastitis

reduction of pH, Electrical Conductivity (EC) and Somatic Cell Count (SCC) before and after treatment with herbal formula in comparison with normal values.



■ **Before treatment**

■ **After treatment**

■ **Normal Milk**

Research article

Nair M N B, Punniamurthy N, Mekala P, Ramakrishnan N and Kumar SK.2017. Ethno-veterinary Formulation for Treatment of Bovine Mastitis, RRJVS/ Journal of Veterinary Sciences S1. 25-29.

Examples of recent EVP research publications

International Journal of Applied and
Natural Sciences (IJANS)
ISSN(P): 2318-4014; ISSN(E): 2319-4022
Vol. 6, Issue 5, Aug - Sep 2017; 23-30
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Engineering and Technology
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ANALYSIS OF THE MECHANISM OF ACTION BY MOLECULAR DOCKING STUDIES OF ONE ETHNO VETERINARY HERBAL PREPARATION USED IN BOVINE MASTITIS

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Research & Reviews: Journal of Veterinary Sciences

Ethno-veterinary Formulation for Treatment of Bovine Mastitis

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In-Vitro Antimicrobial Activity of Ethnoveterinary Herbal Preparation for Mastitis



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Kempanna et al. J Ayu Med Sci 2018; Apr-Jun 3(2): 349-52



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Journal of Ayurveda Medical Sciences

Quarterly Journal for Rapid Publication of Research in Ayurveda and other traditional medicine

Review Article

Ayurveda Understanding of Mastitis in Dairy Animals

Kumar Seethakempanahalli Kempanna, Balakrishna Nair Mannoor Narayanan, Natesan Punniamurthy, Girish Kumar Venkateshappa

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Dhanwantharam Kashayam for Preventing Post- Partum Complications in Cross-Bred Cows



Suresh Bharath¹, Puniamurthy N² and Nair MNB^{3*}

Research & Reviews: Journal of Veterinary Sciences

e-ISSN:2581-3897

Prevention of Mastitis in Cattle During Dry Period Using Herbal Formulation

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At the frontiers of Veterinary Sciences: Complexity of animal biome

- **Multiple causative factors responsible for all health conditions .**
- **Single molecules for single targets is simplistic biology (with very limited applications for short interventions in acute conditions).**
- **Observations of molecular changes at cellular level cannot be extrapolated at systemic level**
- **Despite incredible insights at molecular level, systemic understanding of whole systems biology is at its infancy**



The promise of Pashu-Ayurveda

- Pashu-Ayurveda represents a systemic theory of biological change
- It complements molecular biology

Time to recognize preclinical and clinical design limitations

- **Bioassays used in modern pharmacology due to their fragmented nature cannot assess systemic effects of any intervention.**
- **Overall quality of modern veterinary evidence on safety, and efficacy is POOR due to reductionist preclinical and clinical research designs .**
- **Modern Veterinary Health Science has limited knowledge of food and nutrition**

Trans-Disdisciplinary Veterinary Health Science (TDVHS)


**The new framework for Indian leadership in
21st Century**

3 objectives of Trans-Disciplinary Veterinary Health Sciences (TDVHS)

- Enhancing Health of livestock
- Managing disease with natural products
- Improving quality of Animal food

21st Century road map for Global leadership in Veterinary Health Science

- **Create a 10 year All India Coordinated TDVHS programme**
- **TDVHS Research on Health, Disease and Animal Products**
- **PG programme for Veterinarians in TDVHS**
- **PG programme in Pashu Ayurveda**
- **Training millions of farmers and para-vets in TDVHS applications**
- **Using ICT creatively**



Thank You