

Ethno Veterinary Herbal Medicine for Clean Milk Production - A Successful Model for the World



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Dairy for Nutrition & Livelihood

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#Milkismore



**IDF-FAO Session on innovative solutions
for AMR management (13 Sept 2022)**

Ethno Veterinary Herbal Medicine (EVHM)



India's holistic-unbroken tradition of 4K yrs

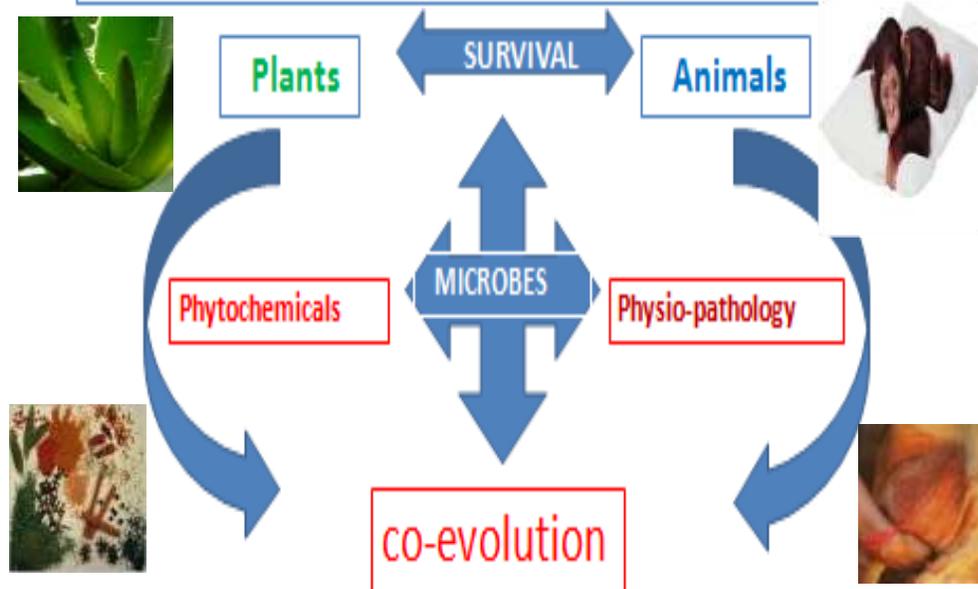
Codified and the Folk / Oral traditions :
Siddha, Ayurveda, Y(u)nani, Gso-rigpa (Amchi-Tibb), etc.

A large body of knowledge do exist outside these organized medical systems.

Ethno Veterinary Herbal Medicine (EVHM) is the knowledge pertaining to the health care of animals, preserved through oral / folk traditions for generations.



INTERACTIONS OF PLANTS / ANIMALS THEIR CO-EVOLUTION with MICROBES



- Survival advantages were conferred upon plants capable of producing noxious bitter-tasting chemicals.
- Animals tolerate the phytochemicals and consume the plants as an energy source

ONE HEALTH : A HOLISTIC APPROACH



GLOBAL ACTION PLAN (WHO, FAO and OIE) on AMR

The complex epidemiology of AMR needs interdisciplinary research approaches involving humans, animals, plants and the environment.

I am of the opinion that in addition to the GAP on AMR, research should be directed towards a holistic approach through the One-Health concept to mitigate the risk of AMR and to achieve SDG.



Aloe vera.. ...
Honey. ...
Turmeric paste. ...
Garlic. ...
Coconut oil.



State/UT in India



EVM for Mastitis (Aloe vera, Turmeric, calcium oxide)
enables clean milk production



Mastitis in bovines –what we don't know?!
Antibiotics and other synthetics in clinical mastitis – not effective -why?

- **Why a herbal alternative ?**
Rational & successful *phyto-therapy* in managing mastitis, consistently on a large scale for over a decade across India.
EVHM can contain AMR

NO TIME TO WAIT:
SECURING THE FUTURE
FROM DRUG-RESISTANT
INFECTIONS

REPORT TO THE
SECRETARY-GENERAL
OF THE UNITED NATIONS
APRIL 2019

IACG Intergovernmental Coordination Group on Antimicrobial Resistance

Information Flow Analysis (IFA)



- Information Flow Analysis (IFA) is an innovative strategy for “Big Data” analysis.
- More specifically, it is a Systems Pharmacology based method for studying cause-effect relationships.

IFA is unique and unlike statistical “Big Data” analysis methods; it determines changes in effect (function) values relative to changes in input (cause) values by measuring the overall degree of likeness (derivative values) between information spectra.

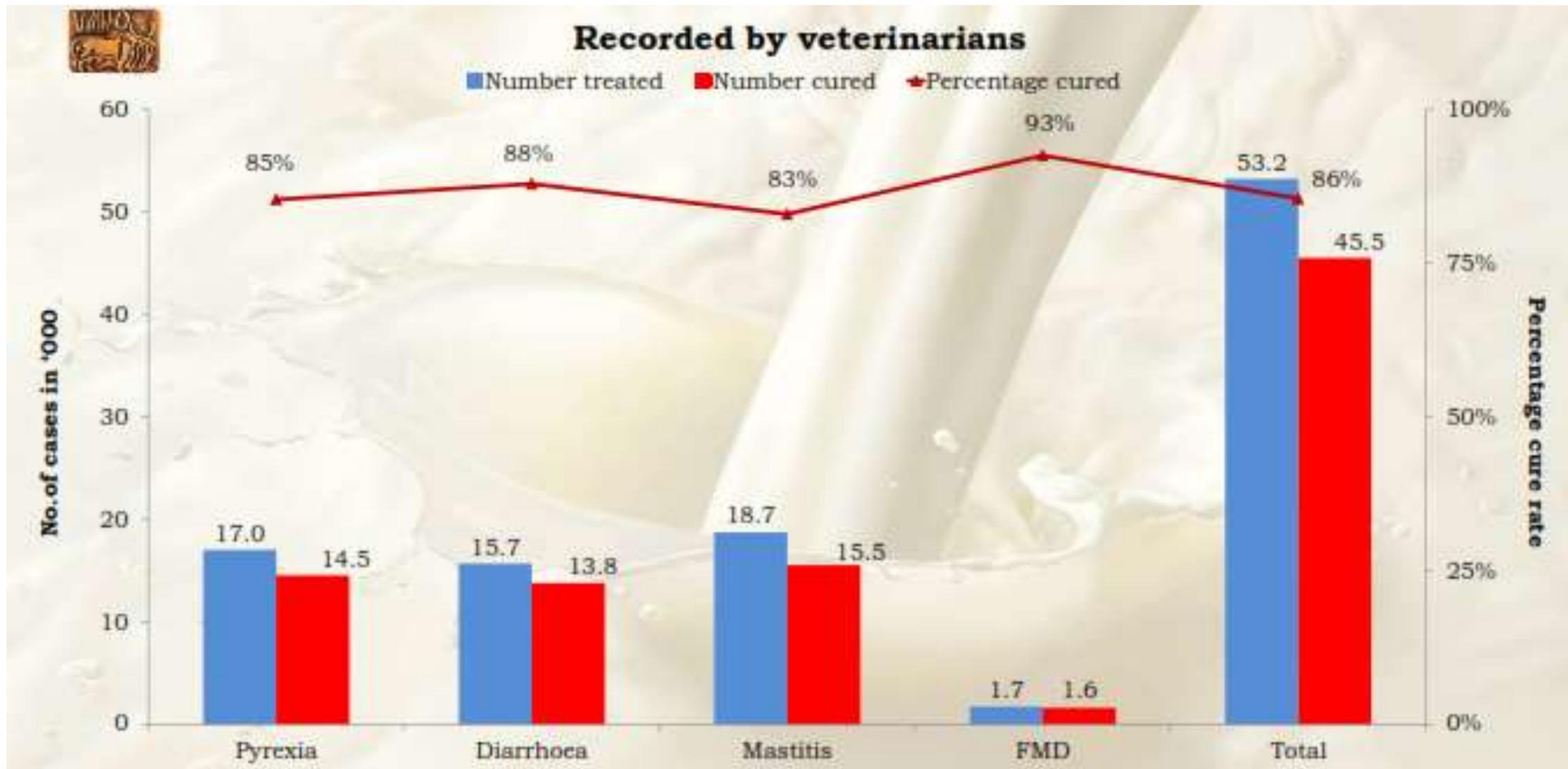
Staph aureus mastitis responds poorly to treatment and often remains persistent in the quarter

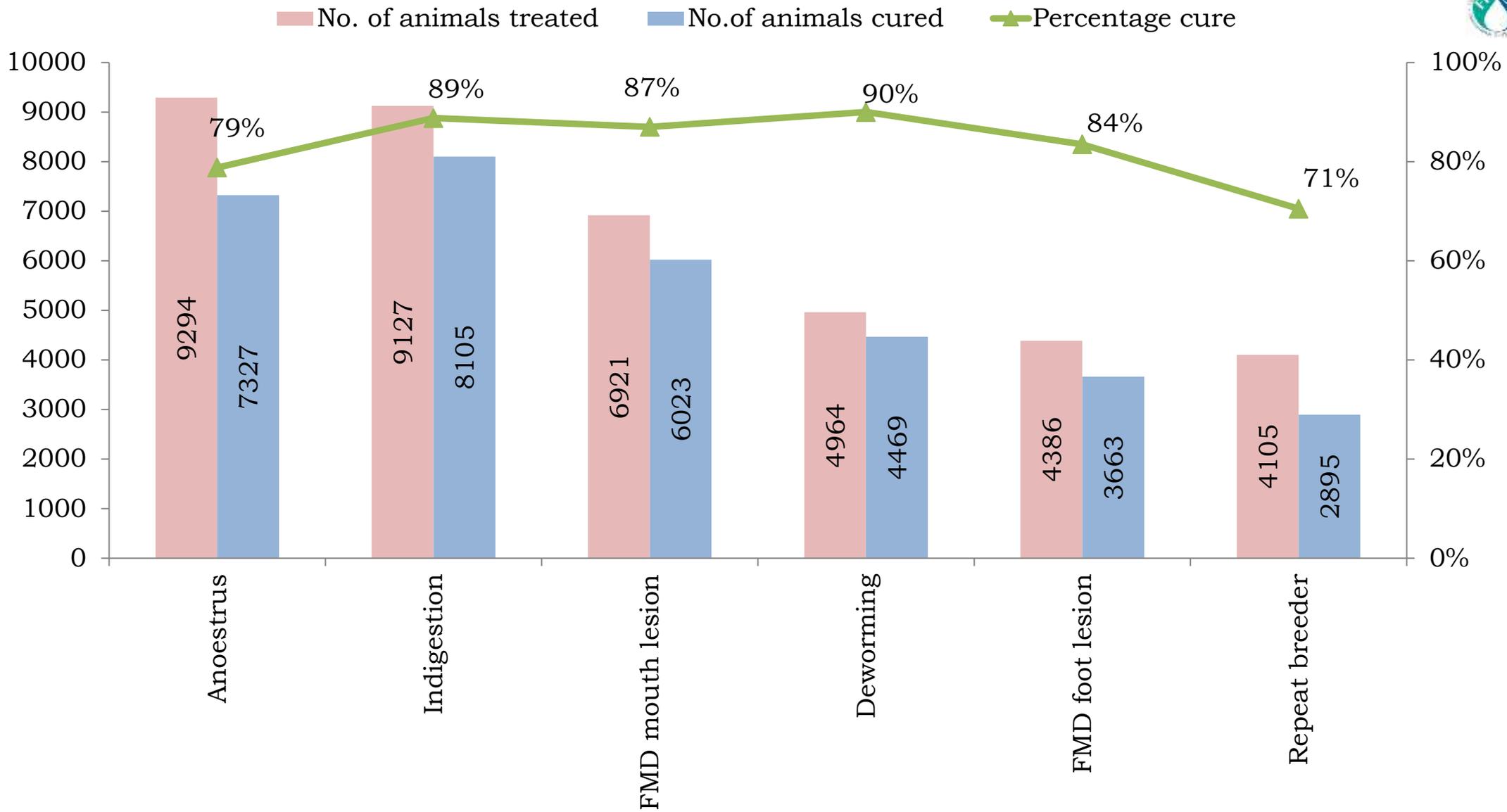
The combination of aloe , Curcuma and calcium oxide has a broad spectrum antibacterial effect against strains causing Mastitis .

Punniamurthy, N. et al. (2017) *In-vitro* antimicrobial activity of EVM herbal preparation for mastitis. *Dairy and Vet Sci J* 3(2)

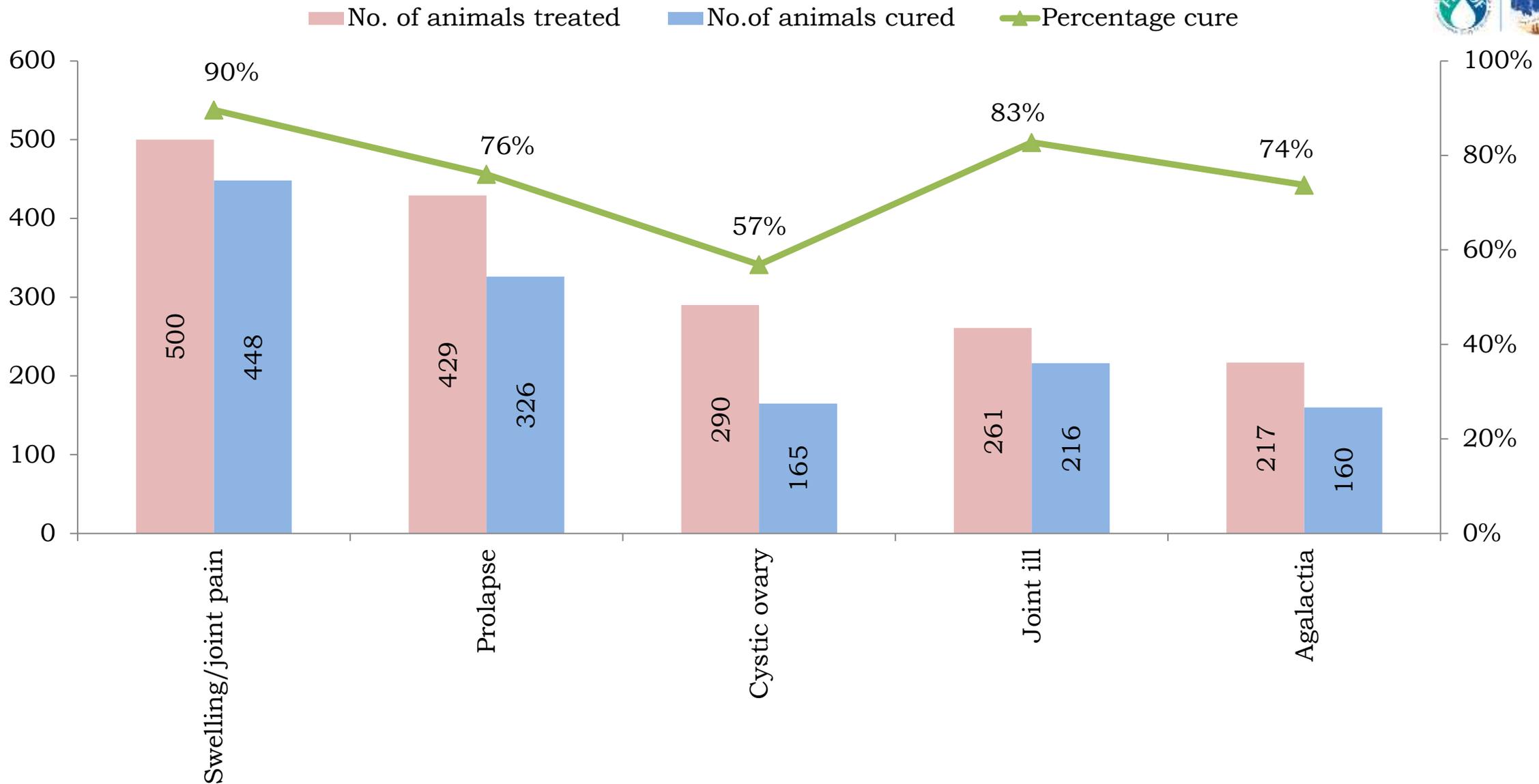
IFA results indicate that the constituents of the mastitis herbal formula are capable of modulating the immune response causing Mastitis

(personal communication – A Filiri)





Use of ethnoveterinary herbal preparations for ailments in bovines in various milk union Courtesy: National Dairy Development Board, Anand



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