Sero-epidemiology of Bovine Brucellosis in Andhra Pradesh

K.K. Swarna Latha, B.Shobhamani and B.Sreedevi,

College of Veterinary Science,
Tirupati, Andhra Pradesh.

Introduction

- **Brucellosis is an important but often a neglected disease in India.**
- **It affects almost all the farm animals**

- **threat to livestock economy by**
- **causing abortions,**
- **loss of offspring,**
- **infertility and reduction in milk yield.**

- **The sero-survey - over different geographical areas would help in understanding the distribution and epidemiology of the disease to curtail the malady.**

- **Keeping this in view,**
- **the present investigation was carried out to ascertain the extent of prevalence of brucellosis amongst the bovine population in different districts of Andhra Pradesh by employing various serological tests.**

Materials and Methods

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- **The present study was conducted in North costal and Telangana regions of undivided Andhra Pradesh.**

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- **21 villages in 3 districts from North costal**
- **33 villages in 7 districts from Telangana region were included in the study.**
- **The details are given in Table I.**

Source of data

- Cows and buffaloes presented to the
- 1. veterinary hospitals,
- 2. animal health camps with reproductive disorders –
- 3. Dairy farms - ‘apparently healthy animals-
- included in the present study

- **Table I: Sero-prevalence of bovine brucellosis in various districts of Andhra Pradesh**

Region	District	No. of Villages	No. of sera samples tested	Number positive	Percentage positive
North-Coastal	Srikakulam	6	273	54	19.78
	Vizianagaram	7	243	29	11.93
	Visakhapatnam	8	310	30	9.67
Telangana	Rangareddy	4	89	15	16.85
	Warangal	5	123	18	14.63
	Nalgonda	5	179	17	9.49
	Medak	4	156	31	19.87
	Karimnagar	5	163	13	7.97
	Mehaboobnagar	5	171	11	6.43
	Khammam	5	149	30	20.13
Total		54	1856	248	13.36

- **A total of 1856 sera samples**
- **1703 sera - from apparently healthy cattle and buffaloes**
- **153 sera samples - history of reproductive disorders**

- The details pertaining to
- age,
- breed,
- sex,
- reproductive disorders and other epidemiological data was recorded.

- **Each sera sample was subjected for AB-ELISA (PD-ADMAS, Bangalore) – brucella abs,**

- **The epidemiological data was analyzed as per Snedecor and Cochran (1994).**

Results and Discussion

- total of 1856 bovine sera samples were screened with AB-ELISA
- 248 samples - positive for brucella antibodies
- overall prevalence - 13.36 %.

prevalence

- **Sera samples from all the 10 districts had brucella antibodies.**

- **higher (20.13%) and lower (6.43%) prevalence was recorded from Khammam and Mehaboobnagar Districts respectively (Table. I).**

- **These findings are in close accordance to sarumathi (2002) and Dhand *et al.*, (2005) - reported 12.5 percent and 12.09 percent prevalence in Andhra Pradesh and Punjab states respectively.**

- A prevalence of 13.08 percent and 13.59 percent was recorded among bovines in the North-coastal and Telangana regions respectively.

- **Suresh *et al.*, (1993) - observed a uniform distribution - disease in different districts of Tamilanadu.**

- **The higher prevalence - may perhaps be attributed to the reason that the infected animals are not excluded.**

- **Source – infection - herd (Mokhtar *et al.*, 2007).**

Species wise prevalence

- **Out of 1130 cattle - 14.69 percent**
- **726 buffaloes - 11.29 percent - exhibited brucella antibodies.**

- **Similar findings with increased incidence in white cattle compared to buffaloes was observed by, Bhattacharya *et al.,* (2005);**

Gender wise

- **Of the total bovines**
- **13.92 percent - females**
- **7.14 percent - male animals**

- were positive for brucellosis.

- **The females were found to be more susceptible than the males as reported by Anuradha and Ganesan (2006), and Rahman *et al.*, (2011).**

Breed wise

- **The prevalence of bovine brucellosis was higher (16.79%) in crossbreds compared to the indigenous cattle (11.91%),**

- **which is in accordance with Suresh *et al (loc.cit)* and is attributed to the inherent resistance of the native breeds to infection, Sarumathi *(loc.cit)*.**

Age wise

- 1-3 years - 12.28 percent
- 3-6 years - 15.53 percent
- 6-9 years - 11.13 percent

- **which is an agreement with the reports of Rahman *et al.*, *(loc.cit)* and (Radostits *et al.*, 2007).**

- **Among the 804 bovine samples - from organized farms - 11.44%**
- **1052 samples - from the rural sector - 14.83% were found to possess brucella antibodies .**

- **Rajesh *et al.*, (2003) and Bhattacharya *et al.*, *(loc.cit)* also reported higher sero-prevalence in animals under rural farming than in organized farms.**

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- **In the rural areas there may be more chances of contact between the healthy and infected animals or their discharges,**
- **which may be attributed to the higher prevalence of brucellosis - rural areas.**

- **The sero prevalence of bovine brucellosis may have some relationship to the size of the bovine population of the village (Dhand *et al.*, 2005),**
- **and large herd size (Makita *et al.*, 2011).**

- **In the animals where artificial insemination was practiced,**

  a prevalence of 14.11% was noticed

  while 9.82% was observed among the animals where natural service was practiced.

- **Makita *et al.*, (2011) recorded brucellosis in artificially inseminated herds and opined that,**
- **contamination of frozen semen might be the reason.**

- **Among the 153 animals having reproductive disorders,**
- **20.26 percent were found to be positive to brucellosis;**
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- **Earlier, significantly higher prevalence (32.75%)**
- **in animals with history of reproductive disorders (Battacharya *et al.*, *loc.cit*) and 33.87% prevalence in animals with a history of abortions (Dhand *et al.*, 2005) was recorded.**

to conclude...

- **The overall prevalence - 13.36%,**

to conclude..

- A total of 1856 bovine sera samples were screened with AB-ELISA of which 248 were found to be positive with an overall prevalence of 13.36 percent.

Higher prevalence (14.69%) - cattle than in buffaloes (11.29%).

The prevalence was more in (13.92%) females than in males (7.14%),

cross breeds (16.79%) were highly susceptible compared to indigenous cattle (11.91%).

The prevalence high

- **in rural sector (14.83%),**
- **in artificially inseminated animals (14.11%)**
- **and in animals with reproductive disorders (20.26%).**


THANK
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