Relationship of mineral and hormone profile of bovines with reproductive disorders in organized dairy farms in Karnataka and Tamilnadu

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Introduction

- Reproductive disorders, important factors causing economic loss in bovine of organized farms

- To know the relationship of reproductive disorders with minerals and hormone status in cattle

Materials and Methods

- 570 Paired sera samples were collected at one month interval from organized dairy farms in Dharwad (128), Bijapur (195) in Karnataka and Chennai (109), Pondicherry (138) in Tamilnadu

- Collected reproductive history from the organized dairy farms

- Serum samples were screened for antibodies against brucellosis and infectious bovine rhinotracheitis by using Avidin-Biotin ELISA Kit developed by PD_ADMAS, Bangalore

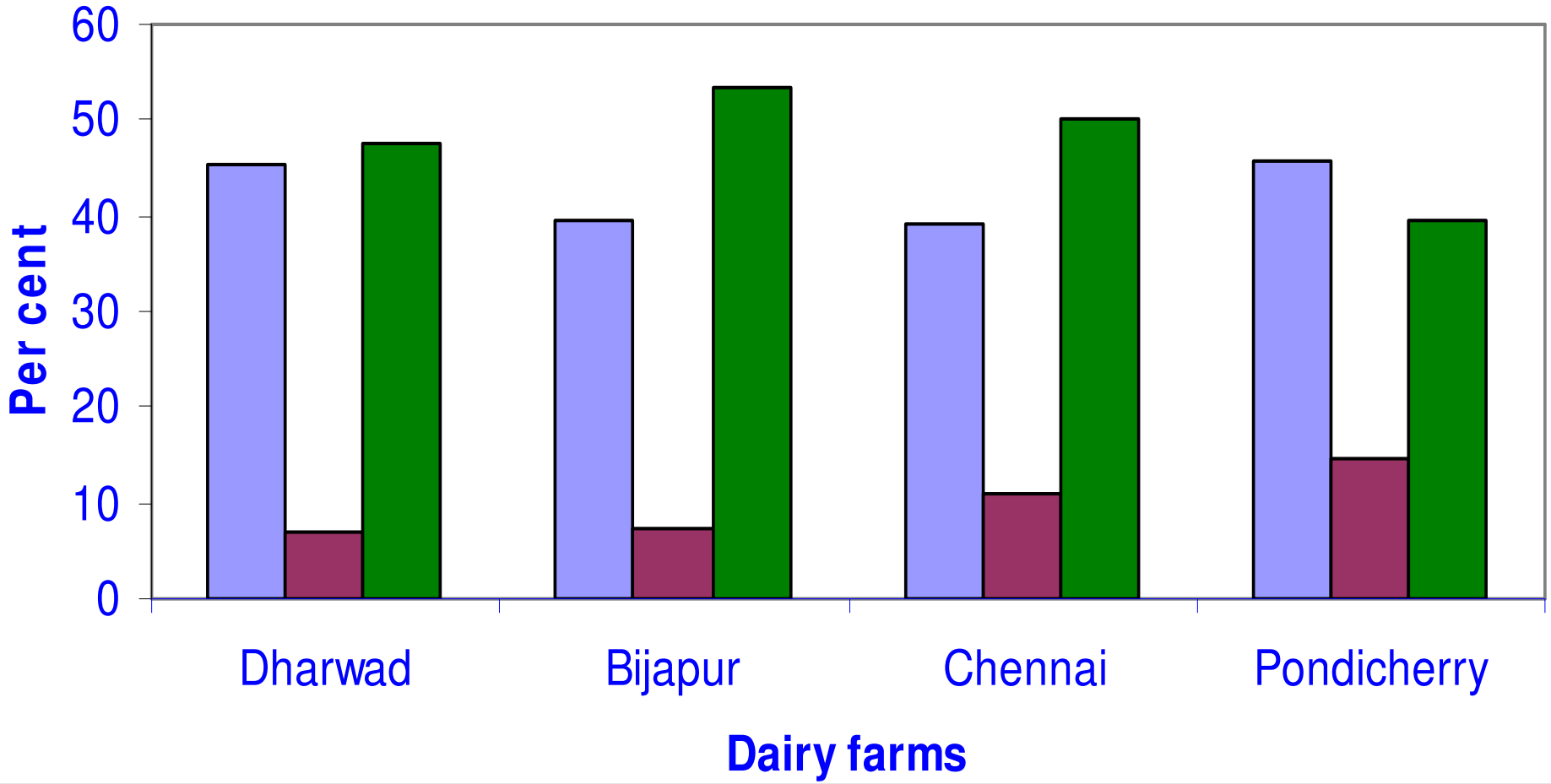
- Serum samples were used for estimation of minerals – copper, zinc, calcium, phosphorus and magnesium by using atomic absorption spectrometry

- Serum estradiol and progesterone were estimated in paired serum samples by using radioimmunoassasy kits

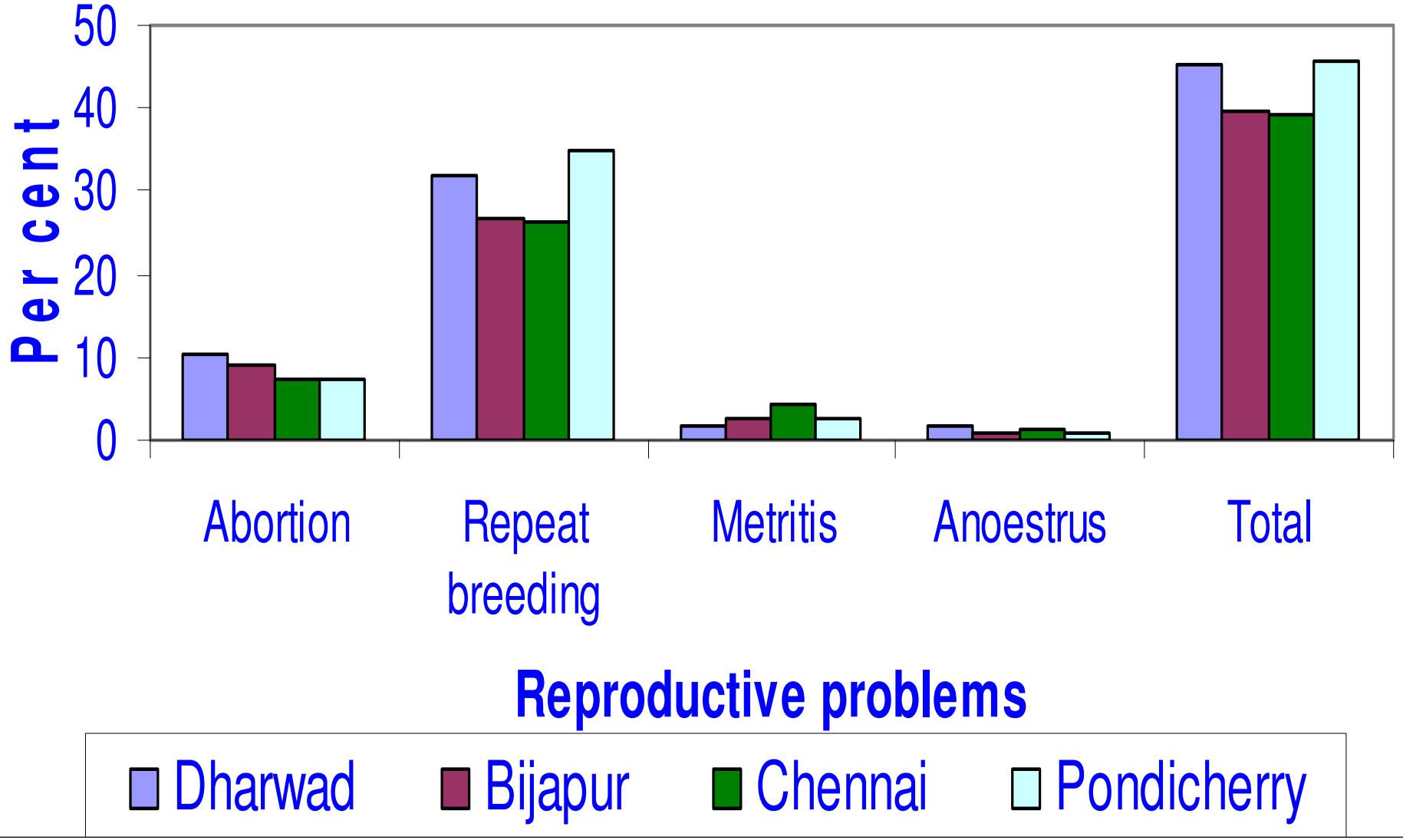
Results

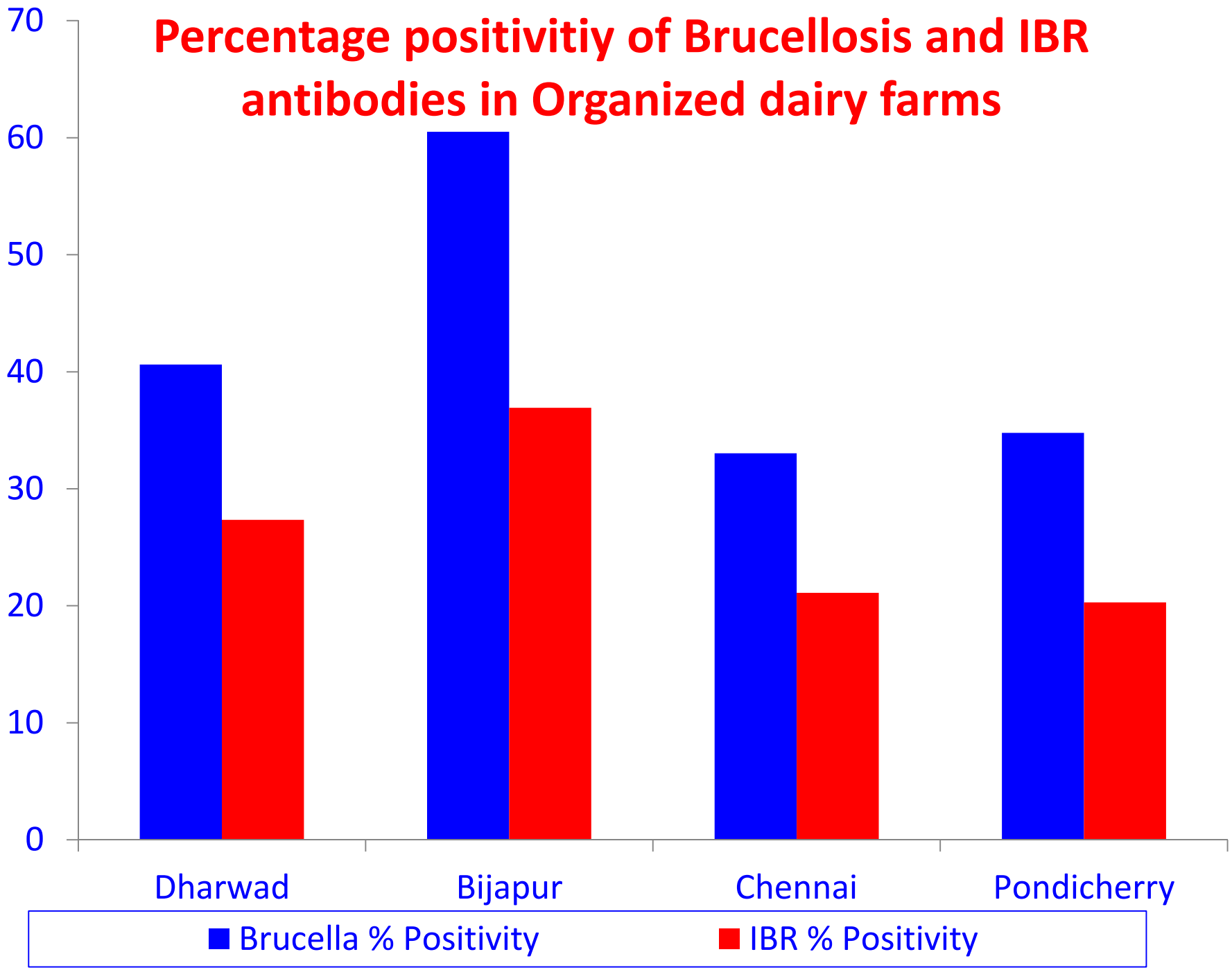
- Organized farms have 39-46 % (42%)of animals with reproductive problems
- Reproductive problem most common was repeat breeding (29.3%) in all the farms
- Out of 570 samples, 254 (44.6%) and 158 (27.7%) positive for Brucella and IBR antibodies

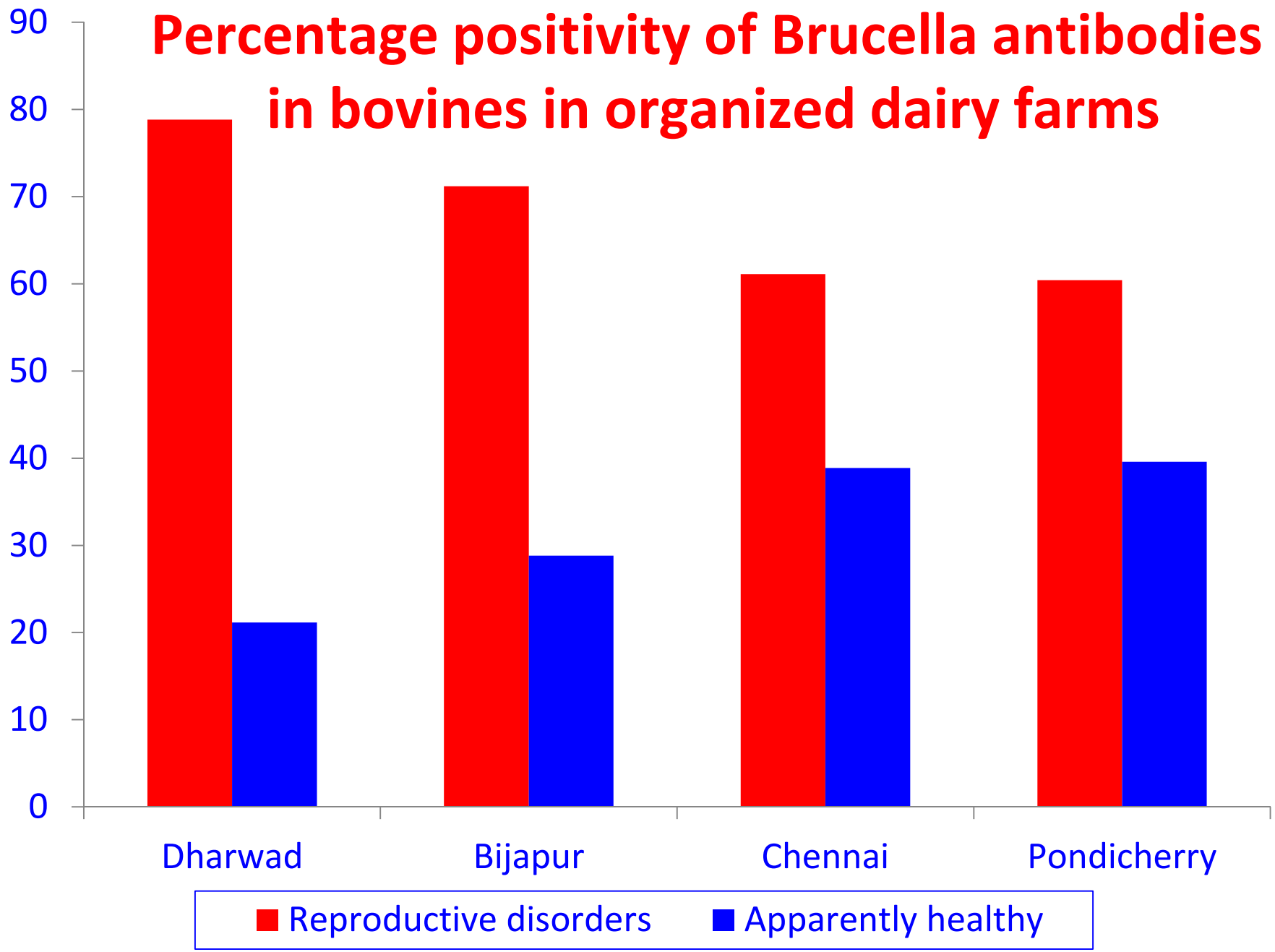
Distribution of bovines in four organized dairy farms

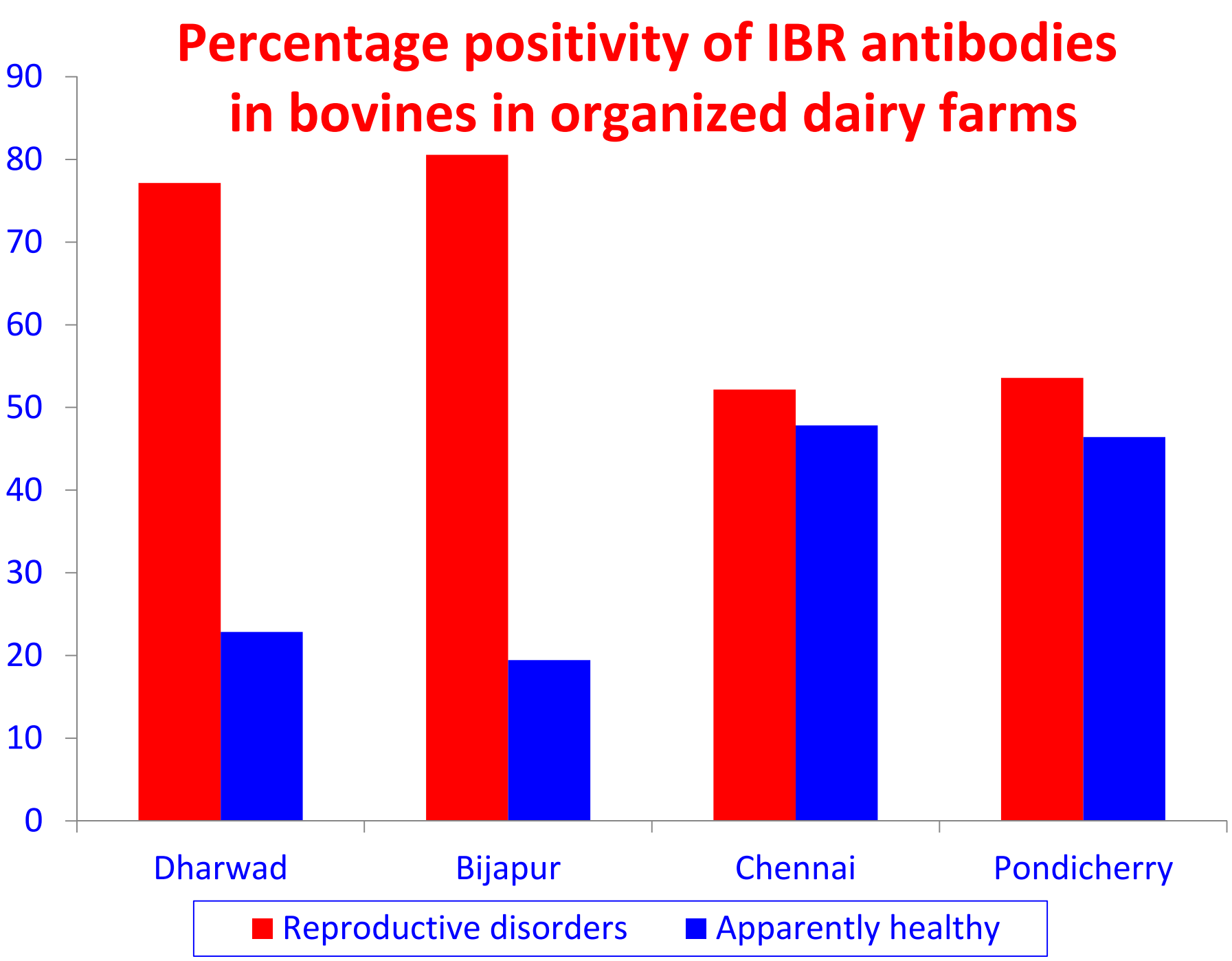


Reproductive disorders in bovines of four organized farms in Karnataka and Tamilnadu




Percentage positivitiy of Brucellosis and IBR antibodies in Organized dairy farms
70
60
50
40
30
20
10
0
Dharwad
Bijapur
Chennai
Pondicherry
Brucella % Positivity
IBR % Positivity


Percentage positivity of Brucella antibodies in bovines in organized dairy farms
90
80
70
60
50
40
30
20
10
0
Dharwad
Bijapur
Chennai
Pondicherry
Reproductive disorders
Apparently healthy

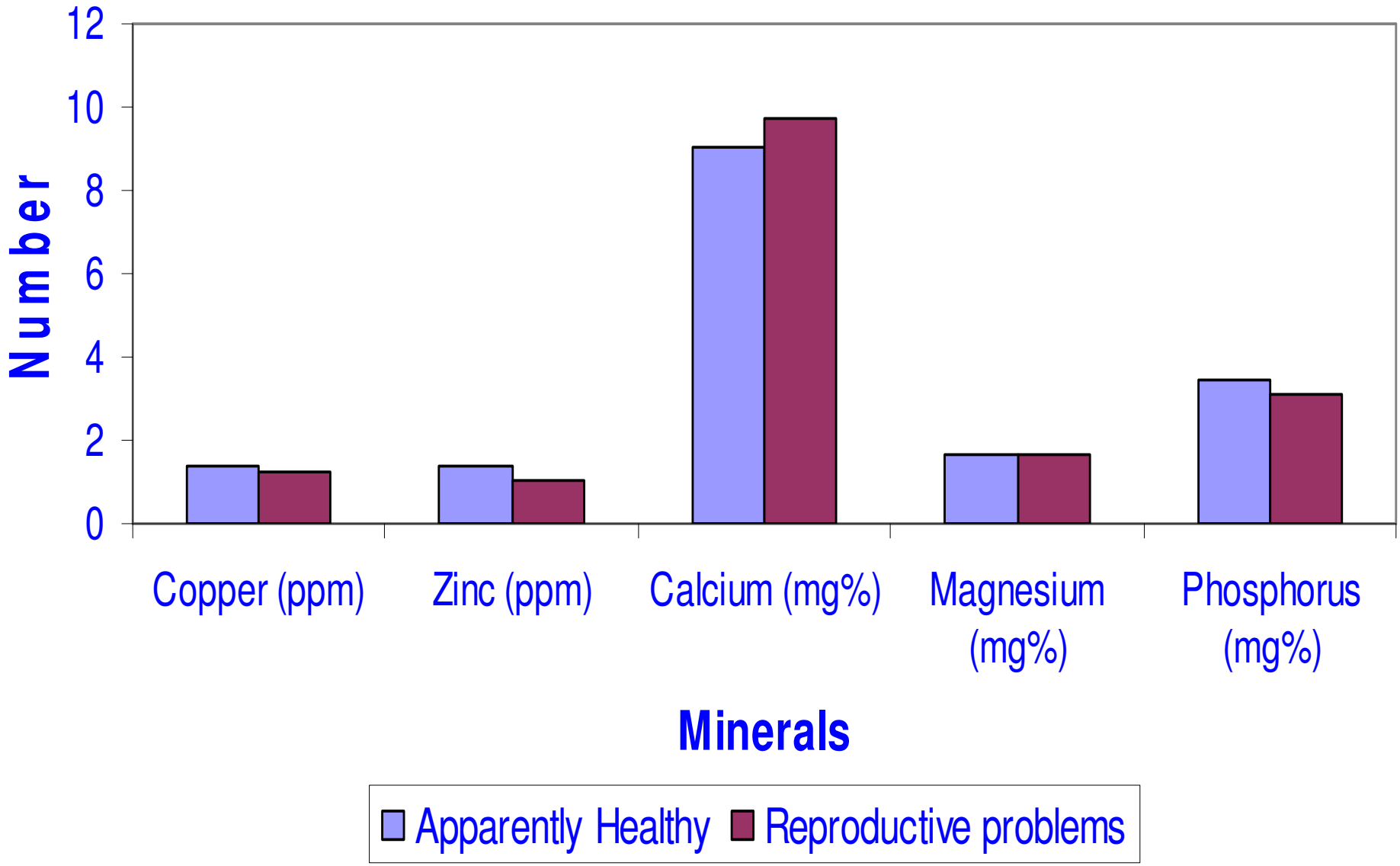

Percentage positivity of IBR antibodies in bovines in organized dairy farms
90
80
70
60
50
40
30
20
10
0
Dharwad
Bijapur
Chennai
Pondicherry
Reproductive disorders
Apparently healthy

- Serum copper, zinc, calcium, magnesium and phosphorus were 1.35 ppm, 1.40 ppm, 9.01 mg%, 1.64 mg% and 3.42% in apparently healthy

- Bovines with reproductive problems – 1.24 %, 1.02 ppm, 9.70 mg%, 1.65 mg% and 3.08 mg%

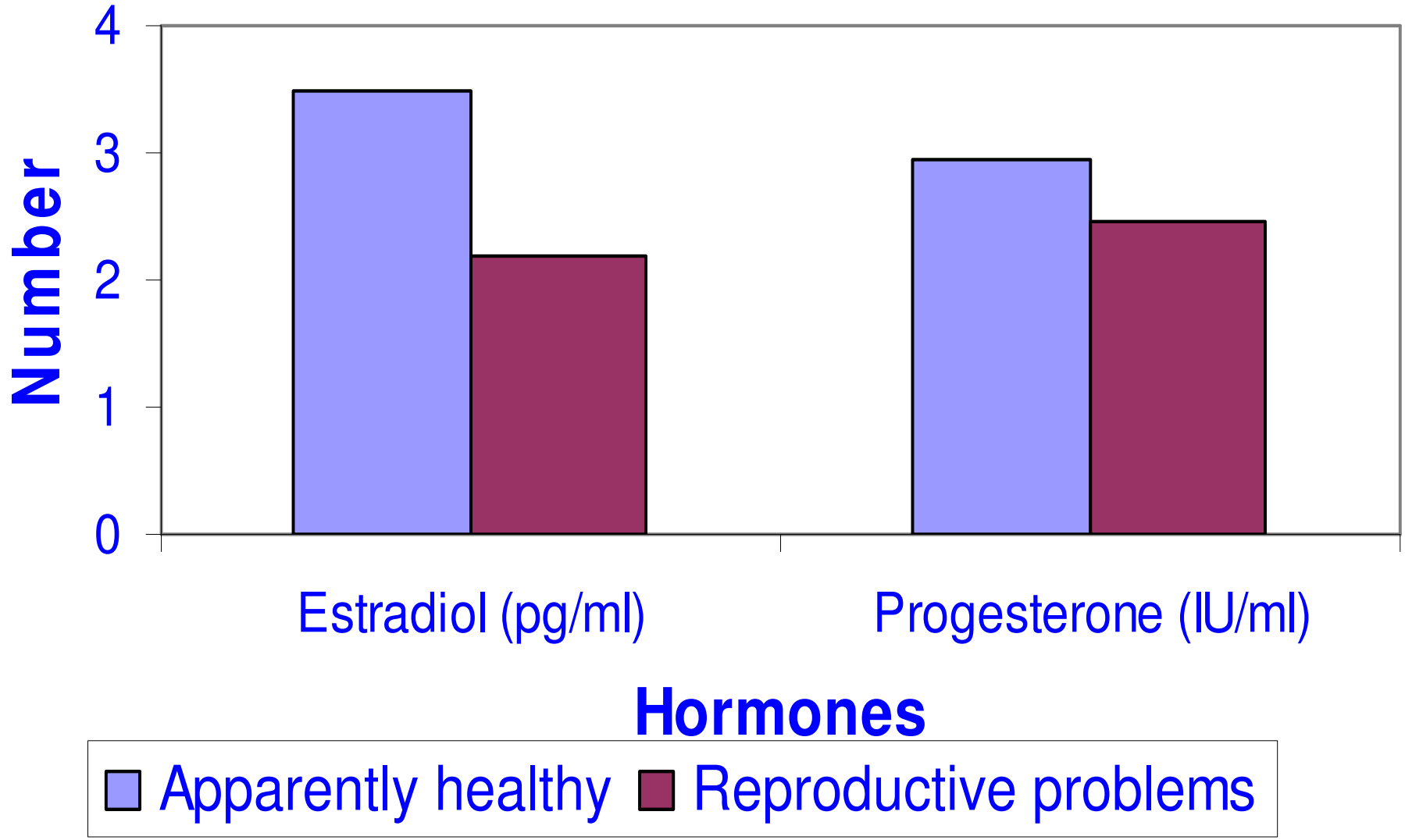
- Serum zinc and phosphorus showed significant ($P<0.05$) decrease in animals with reproductive problems

Serum mineral status of bovines in organized farms



- 3.50 pg/ml and 2.94 IU/ml of estradiol and progesterone in apparently healthy bovines
- 2.18 pg/ml and 2.46 IU/ml of estradioland progesterone in bovines with reproductive problems
- Decrease in hormone levels in bovines with reproductive problems

Hormone status of bovines in organized farms



Conclusion

- Brucella and IBR antibodies showed no significant relationship in bovines with reproductive disorders and apparently healthy

- Mineral and hormones have relationship with reproductive disorders in bovines of organized dairy farms

- Regular estimation of minerals and hormones in bovines may aid in early detection of reproductive disorders


THANK YOU