Mortality records in a poultry farm are of immense importance to know the prevalence of diseases and for adopting preventive and control measures. Information regarding mortality pattern of layers and the causes under local condition of Tamil Nadu is inadequate. Considering the importance of proper documentation of poultry diseases in the analysis of occurrence of the diseases and finding out the etiological agent for taking appropriate disease control measures, a study was undertaken to find out the causes and pattern of layer mortality under tropical humid climate in Tamil Nadu.

Materials and Methods

In the present study nine batches of pure line layers consisting of White Leghorn (WLH), Rhode Island Red (RIR) and Rhodowhite (RIR and WLH cross) maintained at Institute of Poultry Production and Management, Tamil Nadu Veterinary and Animal Sciences University, Chennai were used, spread over 3 years (2009-2010 to 2011-2012). Causative agents were listed and per cent mortality was calculated during different seasons viz. Winter (December, January and February), Summer (March to May), southwest monsoon (June to August) and Northeast monsoon (September to November). Birds were reared in standard managemental conditions. Birds up to brooder and grower (0-20 weeks of age) were reared in deep litter system and there after the adults birds were housed in individual cages for egg production (21-72 weeks of age).

Mortality was recorded throughout the rearing period and post-mortem examination of all the 2668 birds died was done. The data were analysed as per standard statistical procedure.

Results and Discussion

The overall mortality pattern during brooder and grower period revealed that in summer the mortality was the highest (56.58%), followed by 22.11% during southwest monsoon, 18.25% in winter and in northeast monsoon the lowest (3.04%). High temperatures with high humidity during summer were stressors for birds which predisposed bacterial, parasitic, and other diseases. Behera et al. (2012) reported an overall brooding mortality of chicks as 64, 24.5 and 11 per cent in summer, winter and rainy season, respectively.

In the present study, the cause of mortality in brooder and grower chickens were analysed into Omphalitis, colibacillosis, hepatitis, pneumonia, coccidiosis and non-specific causes in that order. The highest mortality due to omphalitis was observed in summer (48.22%) followed by southwest (35.22%), northeast monsoon (23.08%) and the lowest in winter (12.98%) season. Terregino et al., (2000) found that the commonest causes of mortality in the first week were omphalitis, yolk sac infection and septicemia. Sharma et al., (2005) reported higher deaths due to omphalitis, weaklings, colibacillosis and pneumonia during first week in broilers. The
difference in mortality due to omphalitis during different seasons was found to be highly significant (P<0.01). Mortality up to 20 weeks of age was significantly lower during northeast monsoon (23.08%) and winter (12.98%) and higher in summer (48.22%) due to omphalitis. No significant difference was observed between summer and southwest monsoon. The incidence of colibacillosis in layer type chicken during brooding and growing period in different season ranged from a low 9.48% during winter to a high 23.05% during northeast monsoon. No influence of season it was observed. Hepatitis incidence also was observed to be not influenced by season in this study up to 20 weeks of age with the value ranging from a low 13.96% in northeast monsoon to a high 20.98% in winter. Feed toxicity due to high humidity in winter might be a possible reason.

Pneumonia and coccidiosis occurrence were found to be significantly (P<0.01) higher in winter, 22.13% and 29.10% respectively than other season. Both were low in summer (10.03% and 5.07%), but not significant during both monsoon seasons. Talha et al.(2001) reported a higher incidence rate of pneumonia in winter (71.43%) than summer (14.29%). Pugashetti and Shivakumar (2007) reported the mortality due to coccidiosis as 25.02 percent. The mortality due to non-specific causes was observed to be not influenced by season in this study. It was low (3.53%) in southwest monsoon and high in northeast monsoon (10.65%).

The causes of mortality observed in layer house were egg peritonitis, fatty liver haemorrhagic syndrome (FLHS), hepatitis, heat stroke, enteritis and non-specific in that order from high to low. The overall mean mortality percentage of 19.92 due to egg peritonitis was observed with a low incidence of 14.95% in winter as a high 23.27% in northeast monsoon, the difference during different seasons was not significant. The overall incidence of egg peritonitis (19.92%) observed in this study supported the report of Rahman and Samad (2004) who reported 37.5%, 35.42% and 27.08% incidence of egg peritonitis in summer, rainy and winter season, respectively. No significant season influence was observed for FLHS which was, 18.40% in northeast monsoon and 13.41% in winter. Hepatitis incidence was also not significantly different during different seasons although it was high (24.94%) in northeast monsoon and low during summer (15.07%).

During summer season the incidence of heat stroke was significantly (P<0.01) higher registering 34.01% against 20.39% during southwest monsoon. No case of heat stroke was observed during northeast monsoon and winter. Winter recorded significantly (P<0.01) high enteritis (42.99%) than northeast monsoon (23.98%). Summer and southwest monsoon had significantly lower enteritis cases (5.75 and 9.79%). Layer house mortality due to non-specific causes was not significantly different during seasons and the mean mortality was 7.89%.

**Summary**

In layer type chicken during brooder and grower periods, mortality due to omphalitis was high and significantly influenced by season. Incidences of omphalitis, pneumonia and coccidiosis were also significantly influenced by season. Omphalitis was highest in summer while hepatitis, pneumonia and coccidiosis were highest in winter. During laying period, the mortality due to egg peritonitis, FLHS and hepatitis were higher during monsoon. Heat stroke was significantly high during summer than in southwest monsoon and absent during northeast monsoon and winter. Winter had significantly higher incidence of enteritis resulting in higher mortality than northeast monsoon.
Clinical and Ultrasonographic Diagnosis of Thyroid Dysfunction in Dogs*

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The diagnosis of hypothyroidism is based on the presence of appropriate clinical signs, thyroid function tests and ultimately, adequate response to thyroid hormone replacement therapy. As these factors overlap with other diseases and are influenced by many causes unrelated to thyroid dysfunction (Ferguson, 2007), determination of thyroid size and volume by ultrasound may be useful to distinguish between hypothyroid and euthyroid dogs with non-thyroid illness (Mooney, 2008). The present study was taken up on various clinical features and ultrasonographic aspects of thyroid gland in hypothyroid dogs.

Materials and Methods

Thirty two dogs of various breeds, ages and sexes referred with presenting signs of hypothyroidism to the Teaching Veterinary Clinical Complex, Bhoiguda, College of veterinary science, Hyderabad of Sri Venkateswara Veterinary University were considered for the present investigation. All these dogs were thoroughly examined and blood was collected for routine hematology. Biochemical parameters were estimated using Star 21 plus semi-automatic biochemical analyzer and thyroid profile was carried out using Lisa elisa reader supplied by M/S Rapid

References
