

EFFECT OF WEATHER CONDITIONS ON PERFORMANCES OF BROILER PARENTS REARED IN OPEN HOUSES

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This study was carried out to investigate the effects of the weather conditions on the performances of broiler parents reared in open houses at NLDB Miriswatte farm (WL2). Data on daily temperature, number of rainy days and relative humidity for over five years (2016-2020) period were obtained from the Meteorology Division, Fruit Crops Research and Development Centre, Horana. Data on egg production of broiler parents, fertility of eggs, rate of hatchability of eggs and rate of mortality of parent birds were collected from record books available at the farm. Data of 50,250 birds from 15 batches of strain cobb500 were used for the study. Monthly average temperature, relative humidity and rainy days were calculated using inferential statistical methods. Pearson's correlation analysis and multiple linear regression were used to find out the relationship between weather parameters and production performances. Egg production, fertility, and hatchability of eggs were not significantly ($p > 0.05$) correlated with temperature, neither rainfall nor relative humidity. However, the mortality rate showed a positive correlation ($p < 0.05$) with temperature and a negative correlation ($p < 0.05$) with relative humidity and number of rainy days. According to the multiple linear regression, temperature, number of rainy days and relative humidity all together contributed to the rate of mortality by 18%. In conclusion, existing heat stress control methods such as installation of ventilation fans, providing of vitamin C with drinking water, availability of chilled water during hot temperature which undertaken at the Miriswatte farm for rearing broiler parent stock in open houses are up to a satisfactory level. However, further investigations are required to find out the temperature effect on the mortality rate of broiler parents.

Keywords: Egg production, Fertility, Hatchability, Mortality rate
Temperature