B-27: Environmental influence on reproductive performance of imported Nili Ravi buffaloes

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The effect of meteorological factors on reproductive performance of Nili Ravi buffaloes imported to Sri Lanka was studied. Available records of 271 imported Nili Ravi buffaloes maintained at Nikaweratiya National Livestock Development Board farm were used for the analysis. Meteorological data on

daily ambient temperature, relative humidity, and rainfall were obtained from Kurunegala district meteorological station. Mean ambient temperature of the experimental station fluctuated from 22.7 $\pm$ 0.5°C to 32.2 $\pm$ 1.1°C diurnally. Relative humidity varied from 54 to 77% during the day, and fluctuated between 79 and 92% during the night. Night time humidity was positively correlated to day time humidity ($r=0.79$; $P \leq 0.01$), and to rainfall ($r=0.73$; $P \leq 0.01$). The experimental station experienced a mean annual precipitation of 1,256 mm. Mean calving interval was 453.9 $\pm$ 56.1 days. Mean interval from calving to first service was 134.2 $\pm$ 93.1 days. This was longest ($P \leq 0.05$) amongst March calvers, and shortest amongst December calvers. Calving to first service interval had a negative correlation with rainfall and a positive correlation ($r=0.74$; $P \leq 0.01$) with maximum daily temperature, suggesting beneficial effects of rainfall and detrimental effects of thermal stress on post partum ovarian activity. Mean birth weight of calves was 29.6 $\pm$ 4.6 kg. Heaviest calves were born in December. Calf birth weight was positively correlated to rainfall ($r=0.63$; $P \leq 0.05$), indicating beneficial affects brought about by rainfall on calf birth weight. The results suggest rainfall and maximum daily temperature as important meteorological determinants of calf birth weight and post partum ovarian activity, respectively.