

## **CHAPTER 4**

### **DISCUSSION**

Environmental heat or heat stress is the most detrimental to dairy cattle and results in the hindrance of feed consumption decreased milk production and reproductive performance (Cavestany, 1985). This compromises the ability of the lactating cow to dissipate heat, resulting in heat stress.

The study was conducted during hot-dry and rainy seasons in Bangladesh, the average temperature is always higher than 27°C with the mean Temperature Humidity Index (THI) more than 78. This temperature is higher than the upper critical temperature for lactating cows (Berman et al., 1985) or when the Temperature Humidity Index (THI) exceeds 72 (Armstrong, 1994). From the study, it was found that negative correlation in highest milk yield with temperature (-0.23) and humidity (-0.27) that partially agree with Farooq et al., (2010) where they showed significant negative correlation (-0.63) between temperature humidity index and Rachid et al., 2002 also reported negative correlation in milk yield with temperature and humidity. When the temperature and humidity are relatively high, milk yield was lowest and fat, protein, and SNF contents were highest (Kaewkamchan et al., 2003).

The effects of environmental factors on milk production were reduced after installation of the entering of fan factor. The study showed that milk yield had positive correlation with light (0.17) and fan system (0.10) which indicated that milk production is improving due to provide sufficient lighting and fan system. That means entire fan and lighting systems in dairy farms were properly used during survey. For that reason the result of the study has showed positive correlation and which is similar with Suriyasathaporn et al., (2006) study result and also agreed with an earlier study in Thailand by Pongpiachan et al., (2000).

It was found that about 91.6% farms were used water from deep and rest of the farms was used water from pond source. In dairy farms, they were commonly used rubber matt as a bedding material and about 58.33% dairy farms were used rubber matt and 41.67% farms, they didn't use any bedding materials. In flooring system, it was found 66.67% farms had rough flooring system and rest of the farms had smooth flooring system. The absence of rubber matt or rough flooring

system in dairy farms was resulted laminitis which directly affects on milk production. This findings are agreed with Telezhenko, 2007.

It also showed that the correlation of highest milk yield with feed passage, water passage and shed height. Milk yield had showed positive correlation with FP (width) 0.43 but others like FP length (-0.03) and width (-0.05), shed height (-0.07) showed negative correlation with milk yield. . Like that FP (Width) had positive correlation with all the parameters such as FP (Length) (0.33), WP (Width) (0.25), WP (Length) (0.04), Shed height (0.07). FP (Length) had positively correlated with WP (Length) (0.73), Shed height (0.52) and negatively correlated with WP (Width). The correlation between WP (Width) and WP (Length) was negative (-0.03) including negative (-0.01) correlation between WP (Length) and Shed height. But these variables have less significant impact to increase or decrease milk production in dairy farms. Cow yields can be significantly impacted by feed and water availability. The availability of feed and water intake may be resulted to enhance milk production, which was fully agreed with Phillips, (2010).