

Is Weather (temperature) Having a Major Influence on the Final Weights of Chickens in Sheepdrove Organic Farm Organic Silvo-Poultry System?

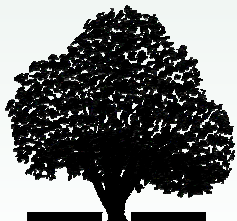
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**Final Report
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Sheepdrove



Organic Farm



**ELM FARM
RESEARCH CENTRE**

Abstract.

1. It was thought that weather, and in particular air temperature, could be a major factor in SOF poultry failing to reach its target market weight of 1.83kg kill out weight. This study used data from the SOF processing plant for the average bird weight for the twice weekly processing of the birds and hourly air temperature from an automated weather station sited on SOF which was averaged over the seven weeks prior to processing (the time the birds spend in the field sheds. The data between 20th January and 3rd September 2003 showed that there was no relationship between air temperature and final bird weight.

Objective.

2. To establish whether weather (temperature) is a major factor in the final weights of chickens from Sheepdrove Organic Farms organic silvo-poultry system.

Background.

3. Sheepdrove Organic Farm (SOF) has consistently failed to reach its target market kill out weight of 1.83kg. (2.61kg live weight). There could be a range of reasons for this including the breed, nutrition, management and environmental conditions. It has been suggested that a major factor could be the weather and in particular the temperature as the birds are located on a relatively exposed downland site. This study has used data from the SOF processing plant and SOF weather station in an attempt to identify whether temperature was a major factor.

Methods.

4. Data was source from SOF on weights of processed birds and from an automatic weather station located on SOF.
 - 4.1. Mean bird weights were used for all processing days (usually Mondays and Wednesdays) between 20th January 2003 and 3rd September 2003. This was supplied by SOF.
 - 4.2. Weather data was taken from the automated weather station on SOF. Hourly records of temperature etc are available. The mean air temperature data over the 7 weeks (including killing day) was produced for each batch that was processed. A mean night-time (6pm-5am) and day-time (6am to 5pm) temperature was also produced for the same period.
 - 4.3. Each of the two sets of data were plotted against each other and a regression was carried out to investigate the relationship between the two sets of data.

Results.

5. The data (66 points) were plotted in excel and a regression line fitted (see figure 1, 2 and 3).

Figure 1: Average finished bird weight against average temperature for time in field (20/01/03 - 03/09/03).

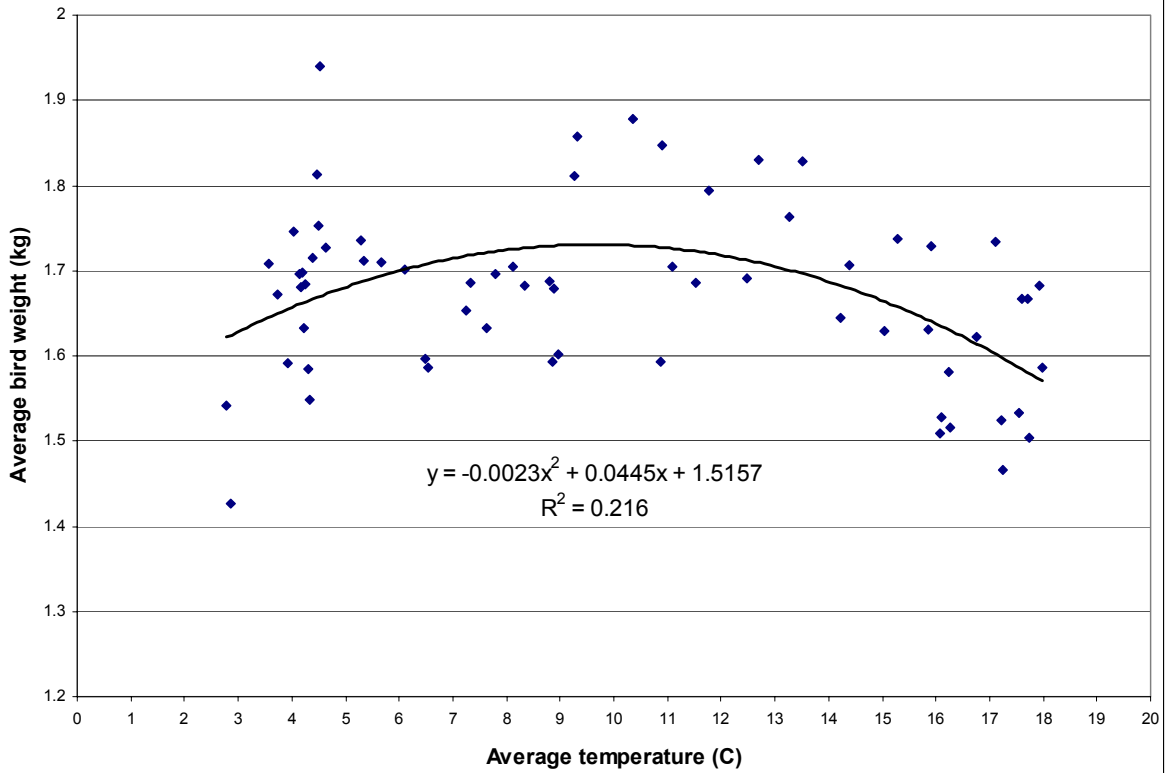
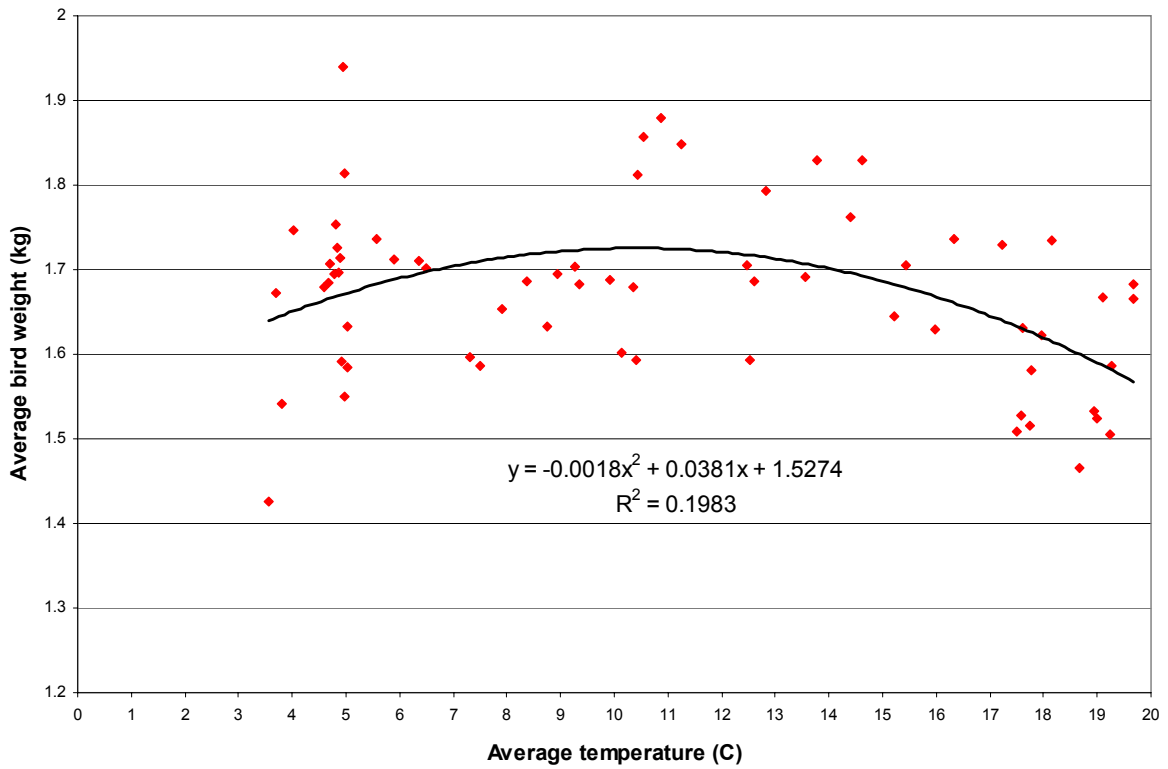
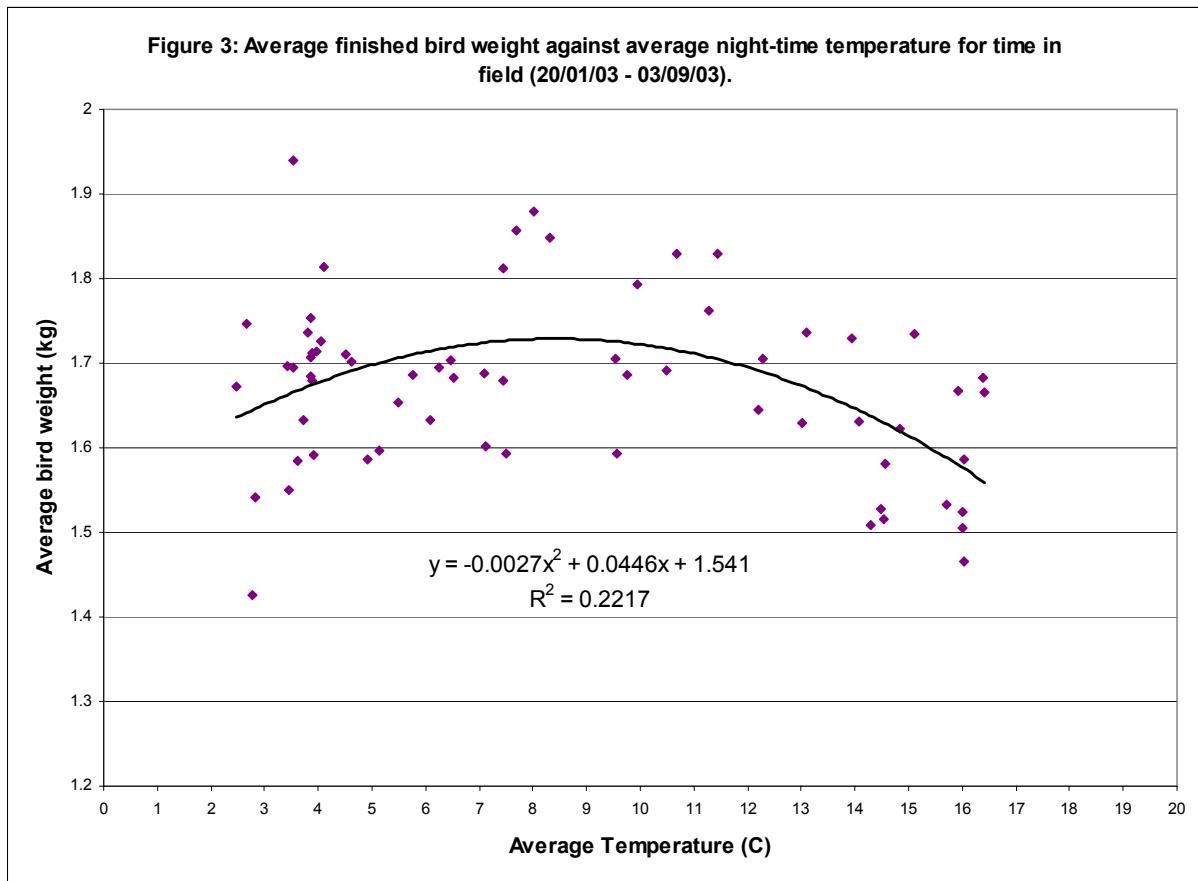


Figure 2: Average finished bird weight against average day-time temperature for time in field (20/01/03 - 03/09/03).





- 5.1. The fit of each of the lines was poor and with low values of R^2 there is not a significant relationship in any of the figures. From the data analysed there is no relationship between mean air temperatures, for all day, day or nighttime in the 7 weeks prior to processing and final weight.

Discussion.

6. There is no relationship between the mean temperature for the 7 weeks prior to processing and the final average end weight of the birds.
- 6.1. This study was only ever likely to identify whether air temperature as a major factor on the performance of the bird. As has been suggested in previous studies other factors may be of greater importance ie management, nutrition etc.

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