

**To establish whether there are differences
in performance between 757 (Lloyd
Maunder's) birds and the Maurice Millard
257 those currently used within the
Sheepdrove system**

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Sheepdrove



Organic Farm



Abstract.

1. Sheepdrove Organic Farm wanted to know whether the performance of the Lloyd Maunders (757) birds would differ from that of their current breed the Maurice Millard (257) and whether chicks sourced from an organic parent flock would perform differently to those from a conventional parent flock.
2. An experiment was undertaken using two different sources of day old chicks, 1000 day old Maurice Millard (257) and 1000 day old Lloyd Maunders (757). These chicks were then put through the Sheepdrove (SOF) organic production system and 30 random birds were weighed every week until depletion, at 11 weeks.
3. The conclusions of the study are;
 - 3.1. There are no significant differences between the average weekly weights of the birds from the two different sources, although the LM birds achieve a more consistent weight, a smaller weight range.
 - 3.2. Further research is required to ensure this weight data is an accurate representation of the performance of both breeds.
 - 3.3. Further research is required to establish if the origins of the parent flock (organic or conventional) affects the performance of the chicks.

Objectives.

4. There are two objectives of the study;
 - 4.1. To establish if there are any significant differences in performance between the 757 (Lloyd Maunders) birds and those currently used, the 257 (Maurice Millard) birds, within the Sheepdrove system.
 - 4.2. To identify if the performance of chicks from an organic parent flock, the 757 birds, differs from those from a conventional parent flock, the 257 birds.

Background.

5. The organic silvo-poultry system was established on Sheepdrove Organic Farm (SOF) in 2002. SOF currently sources its day old chicks from Maurice Millard who provide 257 birds from a conventional parent flock.
6. It has been suggested that a different source of day old chicks may result in a better performance over the production period. Now that the system at SOF has been established they can start to assess the performance of other birds within their system and compare them to that of the 257 birds.
7. Lloyd Maunders have just bought their first organic parent flocks, 757 birds housed in veranda systems. It was agreed to replace 1000 of the normal Maurice Millard 257 birds with 1000 of the Lloyd Maunders 757 birds for a comparison trial.

Methods.

8. The data for this trial was collected in the 11 week period commencing 1st September 2003.
 - 8.1. On arrival day (Monday) 30 of the 1000 Lloyd Maunder 757 birds and 30 of the 1000 Maurice Millard 257 birds, from the trial batch, were weighed in order to obtain an average starting weight for the birds.
 - 8.2. 30 birds from each of the two trial batches were then weighed every Monday until depletion.
 - 8.3. Prior to being moved to the field sheds the Lloyd Maunder birds were leg ringed and their back feathers were colour sprayed for easy identification in the field, in case of migration between field sheds.
 - 8.4. The data was collected and analysed producing a mean weight for each week of growth.

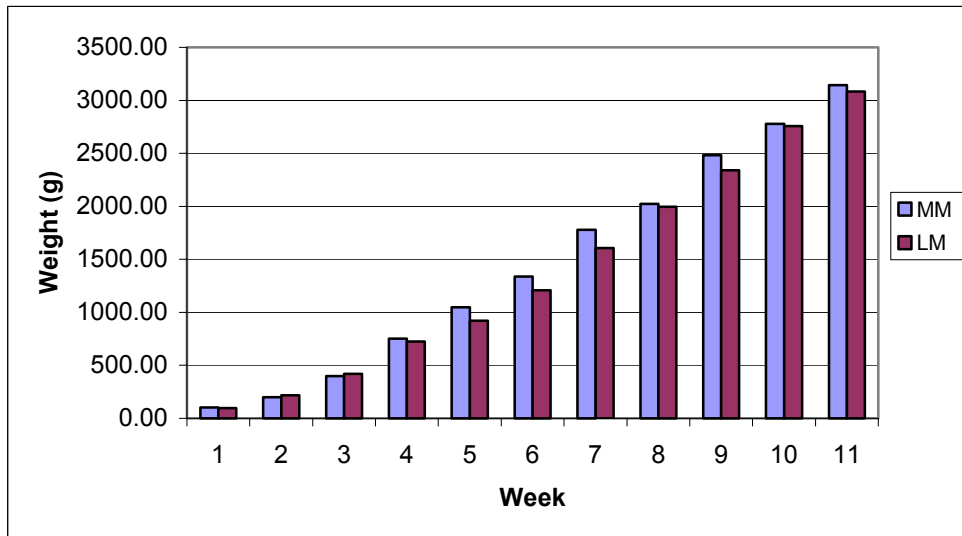
Results.

9. Weekly average bird weights can be found in Table 1 and Figure 1.
 - 9.1. The birds all started at a similar weight as day old chicks.
 - 9.2. This continues until week 4 when, as Figure 1 demonstrates, the MM birds begin to achieve a slightly greater weight.
 - 9.3. The MM birds maintain this until depletion in week 11.

Table 1: Weekly average weights of 30 Maurice Millard (MM) and Lloyd Maunder (LM) birds, including standard deviation.

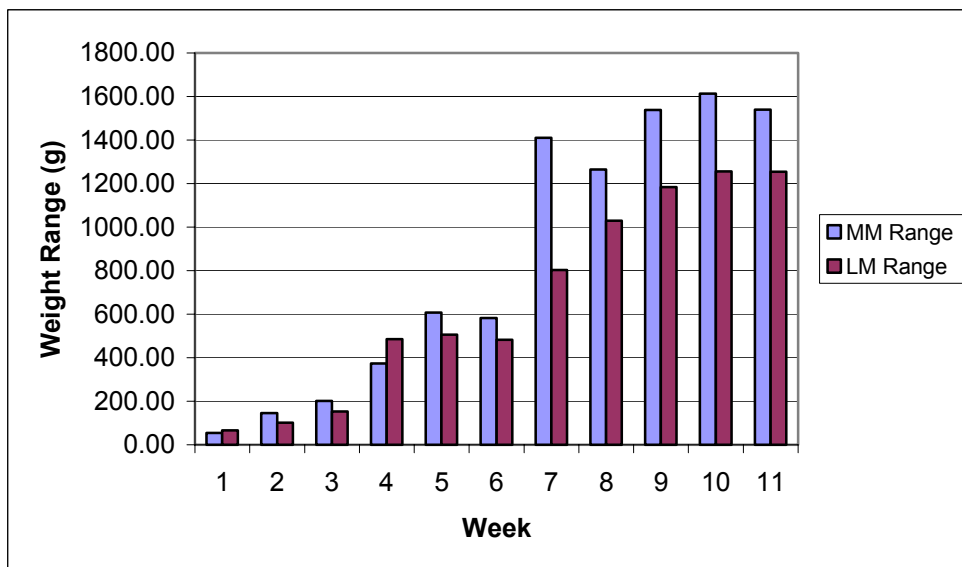
Week	Day	MM	LM	SD
Day Old Chicks		47.4	48.2	0.57
1	8	102.97	97.47	3.89
2	15	200.70	216.13	10.91
3	22	397.20	418.90	15.34
4	32	751.13	725.77	17.94
5	37	1048.50	919.93	90.91
6	43	1337.67	1207.77	91.85
7	51	1777.53	1607.60	120.16
8	57	2022.03	1996.23	18.24
9	65	2482.83	2339.00	101.71
10	71	2778.53	2758.10	14.45
11	77	3143.47	3083.97	42.07

Figure 1: Weekly average weights of 30 Maurice Millard (MM) and Lloyd Maunder (LM) birds



9.4. The MM birds have a greater weight range than the LM birds except in weeks 1 and 4, shown in Figure 2.

Figure 2: A comparison of the weekly weight ranges of 30 MM and 30 LM birds



Discussion.

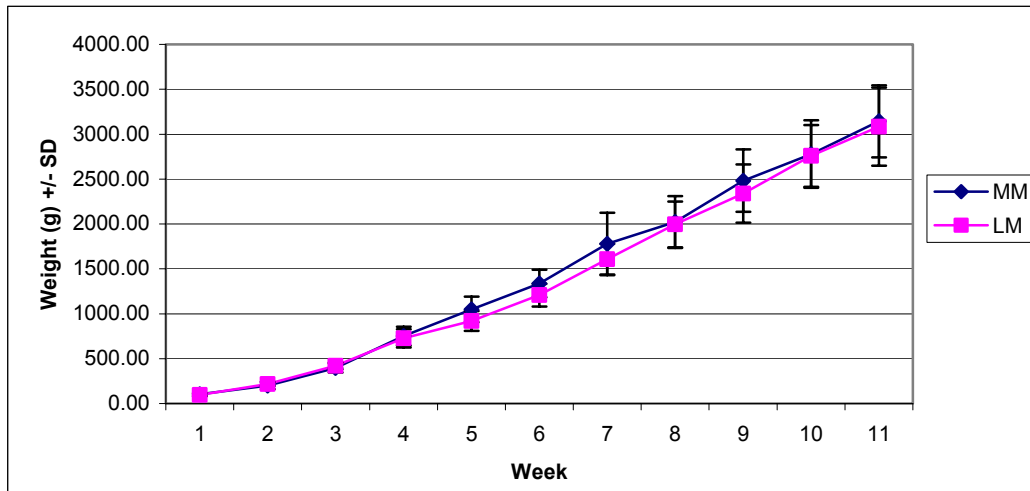
10. The experiment attempts to answer two questions-

10.1. Are there any differences in performance between the 757 (Lloyd Maunders) birds and those currently used, the 257 (Maurice Millard) birds, within the Sheepdrove system?

10.2. Can we identify if the performance of chicks from an organic parent flock, the 757 birds, differs from those from a conventional parent flock, the 257 birds?

11. Are there any differences in performance between the 757 (Lloyd Maunders) birds and those currently used, the 257 (Maurice Millard) birds, within the Sheepdrove system?

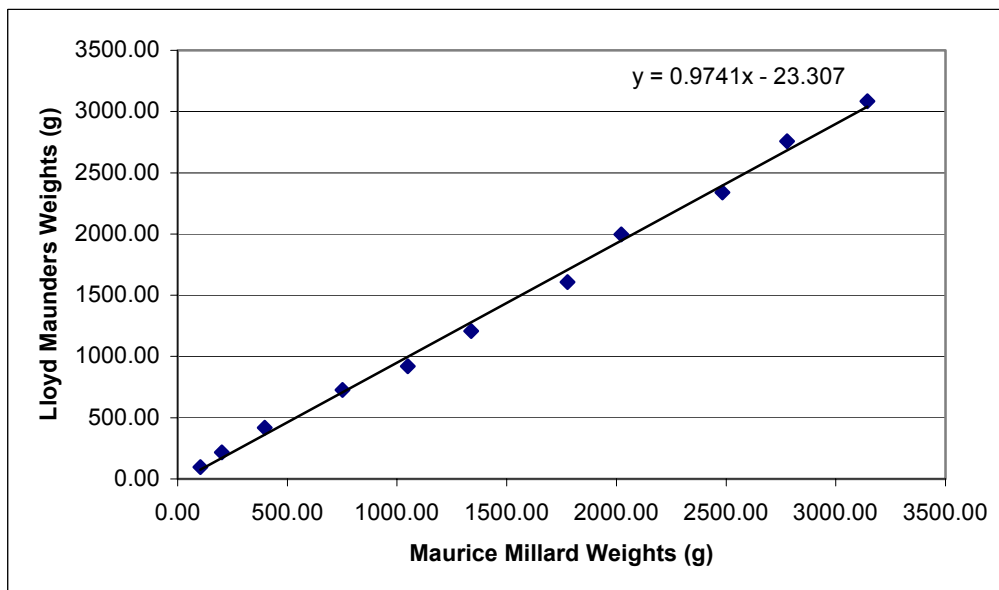
Figure 3: The weekly growth of 30 MM and 30 LM birds



11.1. Figure 3 shows the growth of both the MM and the LM birds from day old to depletion. It shows that although the MM birds are generally heavier than the LM the differences are not significant. It also illustrates that there are no striking features, just a steady and consistent growth.

11.2. The Pearson's product moment correlation test is used to indicate the extent of a linear relationship between two data sets, an r-value of +1 = perfect positive linear relationship and an r-value of - 1 = a perfect negative linear relationship. Figure 4 indicates a strong positive linear relationship between the two sets of weight data therefore a Pearson's tests was performed to confirm this. It gave an r-value of 0.99812, a strong positive linear relationship, which also indicates that the weight differences are not significant.

Figure 4: A comparison of the weekly weights of 30 MM birds and 30 LM bids in a scatterplot



11.3. Figure 2 shows that the MM birds had a greater weight range across the weeks. This suggests that although the MM birds had a higher weekly average weight than the LM their weights were less consistent i.e. the MM may have had some small birds and some heavy birds but the LM may have had lots of average sized birds, resulting in a lower average weight but a more reliable product.

12. *Can we identify if the performance of chicks from an organic parent flock, the 757 birds, differs from those from a conventional parent flock, the 257 birds?*

12.1. In this experiment both the parent flock and the breed of bird was changed therefore any differences in the performance of the chicks can not be attributed to either of these factors individually.

Conclusions and Future.

13. This study has brought to light several conclusions

13.1. It is highly likely that there are no differences between the performance of the MM and LM chicks within the SOF system when looking at the average weights.

13.2. It appears the LM birds achieve a more consistent weight across the 11 weeks, however in order to identify if this is due to them being a different breed or due to their parent flock being organic further research is needed.

13.3. In order to be sure these results are an accurate representation of the growth of these two breeds of bird further groups should be tested in the same way.

13.4. This experiment only took place over an 11 week period, it would need to be continued throughout the year in order to highlight any seasonal variations.

13.5. This experiment doesn't look at issues such as health or the number of birds from each breed that made it to depletion i.e. number of birds culled during the production period, number of birds that had gone off their legs/got green legs.