

Chopped Straw As A Litter In Sheepdrove Organic Farm Organic Silvo-Poultry System.

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Sheepdrove



Organic Farm



Abstract.

1. A trial was undertaken to determine whether there was an advantage in using an alternative litter in the poultry field sheds, than the usual straw, on the Sheepdrove Organic Farms (SOF) silvo-poultry production system. A chopped straw litter selected. It was intended to raise co-hort houses one on chopped straw litter the other on long straw litter. The condition of the litter and the bird's feet were observed throughout the 7-week production period of the birds. After 4 of the 7-week production period the supply of chopped straw was depleted and long straw was used from then on. The observations suggested that there were no differences in the condition of the chopped of long straw litter throughout the trial or on the health of the birds feet.

Objective.

2. The objective of the trial was to determine whether there was an advantage in using an alternative litter in the poultry field sheds, than the usual straw, on the Sheepdrove Organic Farms (SOF) silvo-poultry production system.

Background.

3. Long straw is the usual choice of litter material for the poultry field sheds in SOF's silvo-poultry production system. However, as a litter material it has its limitations. It can become wet and compact and allow ammonia to build within it. This ammonia can burn the bird's feet, causing foot lesions and lameness. In the past the processing plant veterinarian has drawn attention to the number of birds with foot lesions. This can be a serious welfare issue.
4. Therefore an alternative litter material was needed that would provide improvements within the field sheds. It is envisaged that this material would provide dryer conditions within the shed and hence improved bird welfare with less foot lesions.
5. The litter selected for the trial was chopped straw. This was chosen as it was believed that it would offer the needed improvements and if successful would be relatively easy to produce on-farm.

Methods.

6. The trial was to compare long and chopped straw litter over the 7-week production period that the bird's are housed in the field sheds on SOF.
7. Chopped straw was used as litter material in field shed 11 while in shed 12 the normal long straw was to be used. The chopped straw bale size used is comparable to a wood shaving size bale. Long straw was supplied as a D1000 bale.
8. Three-week-old birds were introduced to the prepared field sheds on 8th (shed 12) and 10th (shed 11) July 2003.
 - 8.1. For the initial litter-up prior to birds being housed shed 11 took 27 bales of chopped straw.
 - 8.2. Shed 11 was looked after by the poultry production and research team and decisions made on a daily basis on amounts of chopped straw to be added each day.

- 8.3. One large D1000 bale of chopped straw was used in shed 12.
- 8.4. Shed 12 was bedded-up daily in the usual consistent manor for the 49 days that the birds were housed in the field. Daily usage of the D1000 bale was expressed as a *percentage* of the bale size, with 20% being an average daily usage per shed.
9. Weekly checks were made on the condition of the bird's feet. Approximately 10-20% of the birds in each shed (approximately 1000) were inspected on each occasion.
10. The poultry team was supplied with a *pro forma* to collate information on weather, litter conditions and amounts of litter used. These were to be submitted daily.

Results.

11. Observations of both sheds were made during the trial. Table 1 presents these observations.

Table 1: Observations of field sheds during the litter trial.

Date	Shed 11 (Chopped straw)	Shed 12 (Long straw)
8 - 15 July	The birds were placed in the shed on 10th July. The first additional straw was added after 6 days. Litter condition was mostly good with only a small proportion of damp patches within the shed.	The birds were placed in the shed on 8 th July. The first additional straw was added after 6 days. Litter condition was mostly good with only bare damp patches around the pop-hole areas.
16 - 21 July	The litter remained clean and dry in the main body of the shed. Under perching and pop-hole areas became damp and bare. It was decided that at least 2 bales were to be added on a daily basis.	The litter remained in good condition with only areas around the drinker and pop-hole damp and slightly matted.
22 - 28 July	The litter stayed in a dry condition. Two bales were added daily.	Litter mainly dry with one large damp area around a drinker point and pop- hole areas.
29 July - 4 August	The litter became compact and matted in large areas around the drinkers and perching areas.	Litter began to deteriorate with a large area of wet compact litter. Maintenance to the shed roof caused the birds to take shelter in the shed for long periods. This would cause very wet litter. There was a strong ammonia smell from within the shed, which would indicate poor litter conditions.
5 - 11 August	The supply of chopped straw was depleted this week and long straw was used. Despite re-ordering of more chopped straw no more was delivered before the end of the trial. Additional factors impacted on the trial during this period. Maintenance to the shed roof caused the birds to take shelter in the shed for long periods. A substantial water leak caused a damp area within the shed. There was a strong smell of ammonia within the shed, indicating poor litter conditions.	Litter conditions reported as 'normal' although a large area in the centre of the shed that was very wet indicating inadequate use of straw at times.

12 - 20 August	Bedding with long straw. Continued to have damp patches, matted and compacted. Strong smell of ammonia.	Litter conditions reported as 'good, normal litter' although damp conditions over most of the shed with strong smell of ammonia.
21 August	The birds were confined to the shed to allow for the clean up of the range area. This resulted in very wet litter that did not improve before birds went to the processing plant.	The birds were confined to the shed to allow for the clean up of range area. This resulted in very wet litter that did not improve before birds went to the processing plant.

12. The condition of the bird's feet was also checked during the period of the trial. Table 2 presents these observations.

Table 2: Observations of the conditions of bird's feet (sample size of 10 – 20% of 1000 flock).

Date	Shed 11 (Chopped straw)	Shed 12 (Long straw)
16.7.03	All feet clean and in good condition.	All feet clean and in good condition.
21.7.03	All feet clean and in good condition.	Three birds with dirty feet but no sores, one bird with cracks in base of the foot.
28.7.03	One bird showed signs of small sores on base of the foot.	Three with foot staining and cracks on base of the foot.
05.8.03	One bird showed signs of small sores on the base of each foot.	One bird with base sores.
12.8.03	Only one bird <u>with</u> clean feet, most showing signs of sores and dirt balls on toes.	Most of the birds had dirty feet with possible sores.
20.8.03	One third had dirty feet with possible sores. One had substantial sores at the base of the foot.	Half of the feet checked were good the other half dirty with sores.

13. Feet from both batches of birds were inspected on processing days, there was no difference between those birds raised on the chopped straw litter and those from the long straw litter.

Discussion.

14. The overall finding of this limited trial was that there was no benefit seen from using chopped straw as apposed to the long straw that is usually used in the SOF silvo-poultry field sheds.

15. The trial was not satisfactory with a number of factors resulting in an incomplete trial.

15.1. The inability to obtain adequate supplies of chopped straw resulted in only half of the production period being spent on chopped straw (the remaining on long straw litter).

15.2. The period of maintenance of the field sheds and the subsequent clear up of the ranging area also resulted in the birds being in the sheds for a greater period of time than would normally be expected (which would be expected to resulted in a wetter litter).

- 15.3. The weather, which plays a large part in free-range litter conditions, was also unusually dry and warm during the whole period of the trial. Rain was only recorded on 5 days. These very dry conditions would have resulted in the best possible weather conditions to maintain a dry litter environment in the sheds. Under wetter conditions there may have been difference between the two treatments.

Conclusions and future

16. The trial was unsatisfactory for a range of reasons and so the results that were achieved cannot be taken as conclusive. However, under these conditions chopped straw as litter gave no improvement over long straw as a litter on the health of the birds feet.
17. However, we have learnt a lot from the trial.
 - 17.1. If chopped straw was to be used as litter it would likely have to be managed in a different way than long straw e.g. turned, raked.
 - 17.2. The cost of chopped straw is high and consideration to bringing it 'in house' would be needed.
 - 17.3. The constant damp litter around drinker points due to spillage could be an issue to the welfare of the birds. Nipple or other drinkers should be investigated.
 - 17.4. The trial has however underlined the importance of using smaller trial sheds where the environment and maintenance issues are more controllable and the need for tighter protocols.

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