INTRODUCTION

The use of wood waste in animal bedding is widespread. Dry softwood shavings are sold as horse bedding in bags and this is a lucrative market for a specialised product. Softwood sawdust is sometimes used in cow cubicles where pumps are used to transfer the slurry. Large chips, up to 10cm diameter are used in outdoor corrals for cattle, but there is growing concern that this system is causing pollution of ground water. Bark peelings are sometimes used as bedding, but they are not very absorbent.

WOODCHIP FOR ANIMAL BEDDING

This information sheet deals with the use of dry woodchip as an alternative to straw under sheep and cattle housed in sheds. It is based on five years experience by the Pontbren Farmers' Group who own and operate a Farmi chipper. The Group use dry hardwood which has been seasoned for at least six months before chipping. The main source for the wood is hedgerow and woodland restoration work, but some sawmill waste in the form of slabwood is also used.

Fig 1: Ewes on woodchip bedding

The chipper is set to produce a chip of about 3cm – postage stamp size. Initially woodchips are spread across the shed floor to a depth of 10cm. This is then topped up with an extra 5cm every 7 – 10 days for sheep on dry food, or every 2 – 3 days for cattle on silage: this is significantly less frequent than is required with straw and therefore reduces labour costs.

The farmers using the system have been pleased with the results compared with straw. The woodchip is less labour intensive and stock remain clean with low incidences of foot problems and reduced need to belly clip lambs before dispatch to the slaughterhouse. Research at Coleg Llysfasi has shown that animals on woodchip bedding have equivalent growth rates to those housed on straw.

Detailed costings have not been undertaken at Pontbren, but the large fluctuations in the price of straw, compared with the relatively stable waste wood price must be considered. Indicative costs from work carried out by ADAS suggest woodchip works out at around £43/tonne.

Fig 2: Tree seedlings growing in woodchip compost

Woodchip requires less handling than straw as the stock will move the material around with their feet, meaning it does not have to be spread so thoroughly as straw bedding.

Another consideration when choosing bedding material is where the material is coming from. The majority of straw used as animal bedding in Wales is imported from England. This has implications for cost, the Welsh economy and also the environment due to the long transport distances involved.

USED WOODCHIP BEDDING FOR COMPOSTING

When the soiled woodchip bedding is removed, it composts rapidly and at high temperatures. The compost has been re-used as bedding and as a growing medium for tree seedlings in the Pontbren tree nursery. CALU also has a project looking at the suitability of composted woodchip bedding as a substrate for growing exotic mushrooms. The ability to re-use the composted material is particularly attractive. Paying once for bedding which can be used two or three times without additional cost has to be good!

Further analysis of the composted material has been undertaken by ADAS. Results suggest it has potential as a soil improver or a (very rich) growing medium. The compost is dry, clean and free from weeds and pathogens because of its high composting temperature. It is easier to store and handle than straw based manure. At the time of analysis (2004) the material was considered suitable for crops with organic status. In other respects, the material is composted farm yard manure.

Fig 3: Turning a compost heap

Further trials are about to start to compare different timber types. This note will be updated when appropriate.

Research in Canada has shown that woodchips retain considerably more nitrogen during the composting process than straw does. Nitrogen, whilst being a major plant nutrient, is also a key "greenhouse" gas. Thus nitrogen retention not only means that the compost has a higher nutritional value, but also lower losses of volatile nitrogen mean there is less of an impact on air quality.

The only difficulty encountered to date has involved woodchip used in cubicles causing blockages in a slurry tanker.

SUMMARY

- ✓ Easy to handle
- ✓ Cost effective if have own source of wood
- ✓ No dust problems
- ✓ Very absorbent
- ✓ Keeps animals' feet clean
- ✓ Replace bedding less frequently
- ✓ Potential market for compost
- × Possible blockages in slurry tankers

Ongoing research at Pontbren is funded by Glasu and the WDA.

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