The bedding materials directory
Contents

2 Contents
3 Introduction
4 Cereals
6 Woodchip
8 Paper products
10 Sawdust and wood shavings
11 Sand
12 Bracken
13 Pea haulm
14 Rape straw
15 Miscanthus
16 Waste regulations
17 Bedding requirements
18 Summary table

The information in this booklet has been compiled by ADAS and Dr Mary Vickers, Senior Beef Scientist, AHDB.
Photography: ADAS, CW marketing and Heather Walker.
There is a variety of bedding materials available for housed livestock.

Cereal straw has been the material of choice on most beef and sheep farms in the past, but availability and cost are becoming an increasing concern in some areas of the country where fewer cereals are grown.

Modern cereal varieties and straw shorteners have reduced straw yields, while high fertiliser prices have seen arable farmers preferring to chop and plough straw back into the soil. In some areas, straw is also being sought as a biofuel.

This short supply, along with high haulage costs, has forced many farmers to seek alternatives. Bedding has a significant bearing on animal health and welfare. Livestock kept in badly managed housing with poor environmental conditions will not grow well and will be more susceptible to disease.

When contemplating a new bedding material, consider the following:

- Will it keep animals dry and clean?
- Will it maintain a healthy environment for the stock?
- Will it provide a comfortable, safe bed?
- Is it readily available?
- Is it cost-effective?
- Is it easy to store?
- Will it produce manure that can be applied to land?
- Will it produce manure that can be composted?

A good bedding material should be:

- Comfortable
- Non-abrasive
- Non-slippery
- Highly absorbent to soak up water and urine
- Low in environmental bacteria

Figure 1. Big square baled straw prices
Straw is the most commonly used bedding material. It has good thermal properties and moderate absorption capacity, which makes it an ideal choice. Barley, wheat and oat straw are the most commonly used, although rye and triticale straw may be available in some areas.

**Cost in 2018**
- Barley straw £85–102/tonne ex field
- Wheat straw £75–91/tonne ex field
- Oat straw £85–100/tonne ex field

**Availability**
Barley and wheat straw is the most abundant in the UK. The land area committed to oats is increasing and so availability may improve.

**Absorbency**
Good-quality straw generally has a moisture content of no more than 15–20 per cent. Oat straw is the most absorbent at 2.86 L/kg, followed by wheat, then barley straw, which are 25 per cent and 33 per cent less absorbent, respectively. Oat straw is also 10 per cent more absorbent than sawdust.

**Quantities**
Deep litter bedding is preferable – topping up as needed. Barley straw is robust and lasts longer than wheat straw, which is brittle and breaks down easily. Barley and oat straw are palatable, so a proportion will be eaten.

**Benefits**
Straw is still the most abundant material used. It creates a warm, comfortable bed, and can be a palatable forage.
Storage
Straw should be stored under cover, if possible. Wet straw has little absorptive capacity.

Animal health and welfare
Mould spores can produce dust, which may cause respiratory problems, particularly in young animals. In wet years, the amount of mycotoxins produced by moulds present on the straw may be high.

Around 300 harmful mycotoxins have been identified. Growing wheat after maize, poor growing conditions and poor storage can increase the risk.

Ruminants are considered less sensitive to mycotoxins than pigs and poultry, but intake over a prolonged period may affect reproduction and growth. In acute cases, clinical symptoms include weight loss, low milk production and lowered immune status.

Straw and muck can harden onto hooves, particularly between the claws, enabling pathogens to infect the foot more easily.

Disposal
Straw breaks down readily and can be spread on farmland after use.

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Table 1. Standard figures for farmyard manure (FYM) taken from AHDB Nutrient Management Guide (RB209)

<table>
<thead>
<tr>
<th>Feed type</th>
<th>Nitrogen (N)</th>
<th>Phosphate (P)</th>
<th>Potash (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat/barley straw</td>
<td>5.0–6.0</td>
<td>1.2–1.5</td>
<td>9.5–12.5</td>
</tr>
<tr>
<td>Sheep FYM</td>
<td>6.0</td>
<td>3.2</td>
<td>9.4</td>
</tr>
<tr>
<td>Cattle FYM</td>
<td>7.0</td>
<td>3.2</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Note: Actual figures may vary depending on the diet fed and the dry matter of the manure
Woodchip can create a good free-draining bed for housed sheep and cattle on relatively dry diets, provided the woodchip has less than a 30 per cent moisture content. A moisture content of 20 per cent is preferable to maximise absorbency.

Research has shown that woodchip offers many animal health and welfare benefits, with limited bacterial growth and less dust than straw.

**Cost in 2018**
£40–80/tonne dependent on treatment and location.

**Availability**
Home-grown wood can be used but should be dried for 6 to 12 months beforehand. Most seasoned hard and soft woods work well for bedding.

Larch is unsuitable because of its tendency to splinter. Moisture content and type of chipper used can also affect the amount of splintering.

Bulk woodchip can be supplied but may be green and have a high moisture content, requiring extra drying and space. Woodchips from virgin timber are not classed as waste and are not, therefore, subject to waste controls when used as animal bedding.

Virgin timber includes whole trees (or the woody parts of trees) and any off-cuts, shavings or sawdust produced from this material.

Woodchips from untreated waste wood, for example packing crates and single-use pallets are classified as waste, but can be suitable for animal bedding. Waste wood must be classified as grade A.

Untreated recycled wood is cheaper but must be screened for nails and other sharp objects.

Treated timber is not permitted for bedding because of the risks to animals, the human food supply chain and problems of dealing with the soiled bedding.

A waste exemption has to be registered with the Environment Agency to use waste wood as animal bedding. The appropriate exemption is U8. Further details can be found on the EA website [gov.uk/guidance/waste-exemption-u8-using-waste-for-a-specified-purpose](http://gov.uk/guidance/waste-exemption-u8-using-waste-for-a-specified-purpose)

**Absorbency**
The woodchip must be below 30 per cent moisture for maximum absorbency.

Larger chips drain freely, allowing liquid to pass through. The bottom layer absorbs moisture well, leaving the upper layers relatively dry and friable.
There are several options for sourcing woodchip. Home-grown wood or some types of recycled wood that can be chipped on the farm are most cost-effective.

If purchased, woodchip may be more expensive than straw, depending on transport costs and total amount used. However, it can be used for several seasons.

**Quantities**
A shallow 10 cm depth is preferable, applying a fresh top-up layer as required. Typically, this will be every 2–3 days for cattle on a silage-based diet, or every 7–10 days for sheep on a dry diet. Frequency will be affected by DM content of the diet.

**Benefits**
Can be reused for many winters. Animals stay clean. There is little dust, so this is a high-welfare bedding. It is readily available and does not require spreading as the animals move it around when walking.

**Storage**
Must be stored under cover and kept dry. Chipped product takes up a lot of space.

**Animal health and welfare**
Animals are as clean as on straw, and health and welfare is equally as good.

Less risk of mould development and dust, resulting in fewer respiratory problems. Untreated recycled wood may contain nails, staples or glass, which may cause injury. Only buy from a reliable source.

**Disposal**
To compost the used material, it should be heaped and turned every four to six weeks. The resulting material can be sieved, with any remaining coarse woodchips reused as bedding next winter and the compost spread on land or composted for a further two to three years. Sieving adds an additional cost (approximately £5/tonne) and works only with hardwood chips.

Data from the Woodchip for Livestock Bedding project suggests that the nutrient level of woodchip compost is lower than straw-based composts.

If using woodchips produced from virgin timber, the resulting manure is not classified as waste and can be spread on the land in accordance with Nitrate Vulnerable Zone (NVZ) rules and the Code of Good Agricultural Practice (COGAP).

If using recycled woodchips, a waste exemption must be registered with the Environment Agency – see page 16.
Paper products

Paper makes absorbent bedding, with a moisture content of approximately 10 per cent. It is not dense and is easily displaced by heavy animals and, unless shredded into small pieces, tends to leave bare patches of floor.

It is difficult to obtain directly from paper mills but can be bought ready prepared by bedding companies at a higher cost.

Waste shredded paper and cardboard, dried paper sludges and plasterboard backing paper, can all be used for animal bedding. As these are considered wastes, a waste exemption must be registered before using them – see page 16.

Paper crumb

Paper crumb is a by-product from the paper industry, whereby short fibres are removed to produce a sludge-like material, which is then rolled to remove excess moisture at source.

Typically, the moisture content is around 50 per cent, but it can be kiln-dried to reduce the moisture content to less than 10 per cent. While this process significantly increases the moisture absorbency of the product, the cost also rises.

Lime ash (paper sludge ash)

Lime ash is produced from paper sludge, or the short fibres that are washed out when paper is recycled. The slurry contains lime, which is a filler and whitener used in the paper-making processes. This is burnt, filtered and has 15 per cent water added to produce a product that resembles a sand-like material.

It has been sold throughout the UK as a bedding desiccant and should not be used as a bedding by itself. Lime ash has a high pH of 9.4 to 12.9 and so must be used with other bedding materials to prevent animals from being burnt.

It has been mainly used in the dairy sector as it can help prevent mastitis but it can also be applied to beef and sheep housing, if mixed with straw, shavings or sand.

Lime ash requires a waste exemption (U8) to be registered if this is to be used as animal bedding. For more information, see gov.uk/guidance/waste-exemption-u8-using-waste-for-a-specified-purpose

Cost in 2018

- Prepared bedding at 10 per cent moisture content is £90–100/tonne
- Crumb from source at 50 per cent moisture content is £10–15/tonne
- Lime ash (depending on area) is £20/tonne

Availability

Shredded paper direct from source is difficult to find. Prepared paper bedding products are widely available but incur a higher cost. Paper crumb from source is available in most areas of the UK, with the price dependent on haulage costs. Lime ash is readily available throughout the UK.

Absorbency

Highly absorbent if kiln-dried to below 10 per cent moisture content. The raw product is significantly less absorptive. Lime ash is highly absorptive and needs moisture adding to prevent bedding sticking to the animals.
Quantities
For prepared paper bedding, beef cattle and sheep require a depth of 10 cm at the start of the winter. It can be used under straw at a depth of around 5–10 cm, which reduces straw requirement by up to 25 per cent.

Raw paper crumb can be used at a similar depth but may need replenishing more frequently. Lime ash can be added at a similar depth to paper crumb but must be mixed with another material.

Benefits
Prepared kiln-dried bedding has high absorbency, good thermal properties, is comfortable, produces little dust and degrades quickly. It also tends to have low spore and pathogen levels.

Raw crumb is less absorbent but much cheaper as a bedding source so can be used more liberally. Lime ash is readily available and cheap. High pH reduces pathogen loading.

Storage
Dried paper products must be stored under cover in dry conditions.

Lime ash can be stored outside but must be on a free-draining surface. It appears to form a surface crust that rain runs off, leaving the inside of the heap dry.

When stored under cover, moisture content levels continue to drop and the material can become very dusty, making it more difficult to handle.

Animal health and welfare
Prepared bedding may help reduce/control pathogen levels. Animals are kept warm, clean, and low dust levels reduce respiratory problems.

Raw paper crumb has had no adverse effects on livestock health or welfare on the farms using it, although no clinical trials have been performed.

Lime ash is highly alkaline and should not be used without a top layer of straw or other material, as the powder cakes on their skin and the high pH can scald their noses and teats.

Disposal
Paper products can clump together, making spreading or composting difficult. If clumps can be broken down, effective composting and spreading can be achieved.

Lime ash is non-organic and does not degrade when composted. It can be spread on fields but, because of its alkaline nature, test soil beforehand to check pH.

Analysis: Paper crumb at 40 per cent DM has N 2.0, P 0.4, K 0.2 total kg/tonne.

If composted, paper crumb requires an exemption to be registered under T23 – see gov.uk/guidance/waste-exemption-t23-aerobic-composting-and-associated-prior-treatment and an exemption to spread under U10 – see gov.uk/guidance/waste-exemption-u10-spreading-waste-to-benefit-agricultural-land
Sawdust and wood shavings

When screened and dried, sawdust can make a good bedding. However, it can be highly variable, depending on the source of the timber. Sawdust is widely available throughout the country. Some very fine products, especially those coming from hardwood, can be dusty and may pose a risk to health. Fine sawdust may contaminate fleeces and is less suitable as sheep bedding.

Wood shavings are used extensively in the poultry and equine industries.

Cost in 2018
- Sawdust (bulk) £50–137/tonne, type of sawdust and volume dependent
- Kiln-dried small bales (20kg) wood sawdust £190–275/tonne kiln-dried
- Wood shavings (bulk) £125–140/tonne

Availability
Sawdust products are widely available throughout the country. Small, pre-packed bales of shavings are sold but are much more expensive than bulk deliveries. Bulk supplies of wood shavings mixed with small woodchips are also available.

Absorbency
Limited data from literature suggests sawdust has absorbency of 1.5–2.5 L/kg and shavings 1.5–2.0 L/kg. Softwood products are reported to be more absorbent than hardwood.

Quantities
For cattle, the suggested approach is to use 30–60 cm initially and muck out completely every four to eight weeks. Drainage is reported to be good initially but can become very poor over time. Sawdust can be used successfully in combination with straw, alternating the two materials. It can also be used in combination with mattresses in cubicles.

Benefits
Sawdust produces a comfortable, clean bed, if managed carefully, with a dry top layer, and is useful for bedding individual animals, such as ewes in lambing pens.

Storage
Sawdust should be stored under cover. Care should be taken with damp sawdust, which can heat in store, increasing the risk of combustion.

Animal health and welfare
Sawdust from treated wood must not be used to bed livestock. Damp sawdust can harbour moulds, and high coliform counts have been linked to an increased risk of mastitis in dairy herds.

Anecdotal reports have shown that wet sawdust bedding can increase the risk of foot problems such as scald in cattle and sheep. There is a potential health risk to humans of using very dusty sawdust, especially from hardwood.

Disposal
Sawdust and shavings from virgin wood are not classed as waste and the resulting manure can be spread on the land. If sourced from recycled wood, refer to the waste regulation section on page 16.

Woody materials such as sawdust and shavings have high carbon content and can ‘lock up’ nitrogen.
**Sand**

Sand is a clean, dry, inert bedding material often used on dairy units in cubicles and loose housing.

The nature and composition of sands can vary considerably (e.g. sea sand versus river or quarried sand), particularly in particle size, consistency and organic content. The most appropriate sand will depend on individual circumstances.

**Cost in 2018**
£10–20/tonne depending on area, delivery costs on top of this.

**Availability**
Widely available. Depending on location, sand may be described as animal bedding sand or sea sand.

**Absorbency**
Limited data suggests an absorbency of approximately 0.3 L/kg.

**Quantities**
In deep-bed systems, farmers using sand report starting with an initial 20–30 cm of sand and replenishing, as necessary. Sand may need levelling/raking where cattle dig their feet into the beds.

**Benefits**
Produces a clean, dust-free and well-drained bed. Reported to be beneficial in dairy housing systems for reducing mastitis.

**Storage**
No special requirements as sand is readily available throughout the year. Additional quantities can be purchased as necessary, reducing the need for extensive storage facilities.

**Animal health and welfare**
Reported to be beneficial when used in cubicles for dairy cattle, although fine-washed sand is recommended as coarser material can be too abrasive. Not generally recommended for use at calving as it sticks to the newborn calf.

**Disposal**
Sand is an abrasive substance and can accelerate wear in slurry/muck handling equipment and on concrete surfaces. The resulting manure can be spread on the land. Depending on the type of sand used, the manure may have a liming effect. Cornish sea ‘shell’ sand has a neutralising value of 30–40 per cent, although the material is slower acting than ground limestone.

Sand may also act as a soil improver if spread on heavy land.
Bracken has been used as livestock bedding for centuries. Harvesting the fronds in late summer/autumn when die-back starts naturally, is considered to produce the highest yield and most easily dried crop. Bracken spores are known to have carcinogenic properties and the material should be handled with care.

**Cost in 2018**
Costs usually consist of on-farm cutting, baling and transportation. Bracken is not typically sold off-farm.

**Availability**
Readily available in certain geographical areas. Harvesting may be difficult on some terrain.

**Absorbency**
It is suggested that bracken is at least as absorbent as cereal straw, with a moisture content of around 20 per cent.

**Quantities**
Quantities used are similar to conventional straw.

**Benefits**
Freely available in certain areas and can be harvested using conventional machinery. Creates a comfortable and durable bed. Can be stored easily. Stock don’t usually eat it.

**Storage**
No specific storage requirements, similar to conventional straw bale.

**Animal health and welfare**
Studies suggest bracken may cause bladder lesions or carcinomas in cattle and can lead to blindness in sheep. It is also thought to cause haemorrhages, with cattle more susceptible.

The toxicity of bracken varies with plant growth stage, but is highest in young leafy material and lowest at the optimum cutting stage in the autumn.

There is little information on how these risks can be reduced. It may be useful to observe animals after bedding down. If animals are eating the bracken, an alternative bedding may be required to minimise the risk of health problems.

**Disposal**
Bracken breaks down more readily than straw so can be spread on land and used as fertiliser. Analysis: Composted bracken bedding: Total kg/t. N 3.86, P 1.5, K 8.
Pea straw is often used as a forage feed due to its high protein content. It tends to be brittle and breaks up easily, making it difficult to bale. It is reported to make poor bedding because it is less absorbent.

**Cost in 2018**
£65/tonne plus delivery costs.

**Availability**
Available from larger straw merchants. However, only small amounts are grown in certain regions so not widely available in large quantities.

**Absorbency**
Reputed to have poor absorbency but no definitive figures are available.

**Quantities**
Pea straw should be used initially in the same quantity as other cereal straws. However, it may need replenishing more frequently due to being so brittle.

**Benefits**
Can be used as forage. Good drainage. Can use under cereal straw to reduce usage by up to 30 per cent, aids drainage and provides structure to bed, due to its ‘stemmy’ nature.

**Storage**
Must be stored undercover as it starts to degrade rapidly when damp.

**Animal health and welfare**
Due to poor absorbency, animals quickly become dirty.

**Disposal**
Pea straw breaks down readily and the resulting manure can be spread on land. Analysis: Pea straw (fresh weight): Total kg/t. N 1.2, P 3.9, K 20.0.

If it is being composted it will need an exemption to be registered under T23 and an exemption to spread under U10.
Oilseed rape straw is readily available and has a high oil content so is in demand as a biofuel. It has a stalky structure and is best used as a bottom layer with cereal straw on top.

**Cost in 2018**
£70/tonne ex field.

**Availability**
Readily available in some arable areas.

**Absorbency**
There are no figures available on absorbency but it appears to be free-draining more than absorbent.

**Quantities**
It is suggested that putting around 50–60 cm of rape straw in the base of a bed with cereal straw on top can reduce straw requirement by up to 30 per cent.

**Benefits**
A cheaper alternative to cereal straw. It is a free-draining bedding material and readily available in some areas of the UK.

**Storage**
Similar to cereal straw. However, some reports suggest that round rape straw bales need handling carefully as they are less robust, and have also been reported to be difficult to roll out.

**Animal health and welfare**
Rape straw should be dried to below 20 per cent moisture content to prevent moulds spoiling the product and causing animal health issues. This may prove difficult in UK conditions.

Rape straw is very stalky and may not be suitable for young lambs or calves.

If using oilseed rape straw, consider where the manure is going to be spread afterwards and check which herbicides, if any, were applied to the crop the straw came from. If the active ingredient aminopyralid remains in the manure, it can affect crops on the land where it is spread.

**Disposal**
Breaks down readily and the resulting manure can be spread. Analysis: Rape straw (fresh wt): (Total kg/t) N 7.0, P 2.2, K 11.5.
Miscanthus

Miscanthus, or elephant grass, is a perennial grass usually grown as a biomass crop. It is tall and stalky and, when harvested, has a high moisture content. It must be chopped and dried before use. Used increasingly in the equine and poultry industries, bedding companies chop the straw, dry it, and sell it in pre-packed, small bales.

Cost in 2018
£300/tonne for small quantities of prepared pre-packed bales. Large bales of miscanthus at 20 per cent moisture content may be available in some areas at £40–50/tonne.

Availability
Prepared bedding is available nationally. However, large dried bales may only be available in certain areas.

Absorbency
Miscanthus is stated to be highly absorbent, able to absorb approximately three times its own weight in moisture, once dried to below 25 per cent moisture content.

Quantities
A good depth of 30–50 cm to start with, topped up with fresh bedding, as needed. Initially, the bed is not very dense and is easily displaced by stock, leading to bare patches. Practical experience suggests adding a small amount of moisture helps prevent this.

Benefits
High DM yield, can be grown on poorer quality land and is highly absorbent. Creates a comfortable bed with good thermal properties. Animals remain clean and warm.

Storage
Must be kept dry.

Animal health and welfare
Miscanthus straw bought from a bedding merchant is free of dust and mycotoxins. However, farmers may struggle to dry the product sufficiently to stop moulds forming.

Disposal
The resulting manure degrades quickly and can be spread onto land.
Waste regulations

Some alternative materials require a waste exemption to be registered with the Environment Agency before they can be used as animal bedding. The appropriate exemption is U8 and further details can be found on the Environment Agency website: [gov.uk/guidance/waste-exemption-u8-using-waste-for-a-specified-purpose](http://gov.uk/guidance/waste-exemption-u8-using-waste-for-a-specified-purpose)

The relevant agricultural waste exemptions are free of charge and can be registered online or on a paper form: [gov.uk/guidance/register-your-waste-exemptions-environmental-permits](http://gov.uk/guidance/register-your-waste-exemptions-environmental-permits)

Contact the Environment Agency customer service centre on 037 0850 6506 for further guidance and copies of the relevant forms.

The Environment Agency has a position statement that allows for the composting or anaerobic digestion of soiled bedding materials that have been used in accordance with U8 exemption: [gov.uk/guidance/waste-exemption-t23-aerobic-composting-and-associated-prior-treatment](http://gov.uk/guidance/waste-exemption-t23-aerobic-composting-and-associated-prior-treatment)

Farm Assurance Standards

Farm Assurance Schemes set rules on the use of alternative bedding materials. Ensure that materials used are permitted by Farm Assurance Standards.

Records of deliveries of waste material may need to be kept, for example, a Waste Transfer Note to comply with Red Tractor Standards. This information may be useful in demonstrating compliance with the law, exemptions, and dealing with any problems that may arise with unsuitable loads.
Reducing bedding requirements

To reduce bedding requirements there are a number of things to consider:

• Extend grazing period or consider outwintering where appropriate
• Store bedding in a dry place, preferably in buildings or under heavy-duty sheeting
• Ensure any water from gutters or water troughs cannot enter the bedded area
• Consider having a scraped (concrete) feed area that is cleaned out a few times a week. This can reduce the amount of bedding needed considerably, as up to 40 per cent of cattle waste is excreted while feeding
• Site water troughs on the scraped area
• Ensure buildings are well ventilated to eliminate moist air and help keep bedding dry
• Ensure buildings are free from leaks which may spoil bedding
• Ration type can have a big effect. Requirements are higher for animals on silage-based diets than those on concentrate or straw-based diets. Excessive salt intake can also cause animals to drink more and increase bedding requirements

• Ensure there are adequate space allowances for feeding, drinking, loafing and lying down, to minimise heavily soiled areas. Ensure stocking densities conform to Farm Assurance Scheme standards

Slatted floors can remove the need for bedding material

To comply with Red Tractor Assurance standards, non-slatted lying areas must be provided for breeding cows, in-calf heifers and calves.

Bedding must be provided on slatted floors for newborn and young lambs. Slats can be covered with rubber to increase comfort.
Summary table

The list of bedding materials described in this booklet is not exhaustive and other materials may be available.

Many of the alternative bedding materials discussed here work well when combined with traditional cereal straws, either forming a free-draining base layer underneath straw, for example rape straw, or in the case of paper or sawdust, mixing it in with it.

It is important to ensure that any bedding material has been screened to remove contaminants such as nails, metals, glass and plastic that could cause injury.

Products that must not be used for livestock bedding

These include:

- Poultry litter. Animal by-product regulations prevent the use of this because of the risk of diseases such as Salmonella
- Recycled rubber. It is illegal to spread this on the land as a fertiliser
- Woodchip produced from treated timber. This poses risks to animals, may impact on food chain safety and cause disposal problems
- Waste Gypsum and waste plasterboard are illegal to use as a bedding material. These materials can be applied to the land as a soil conditioner with a waste exemption

Table 2. Summary of bedding materials

<table>
<thead>
<tr>
<th></th>
<th>Cost per tonne</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straw</td>
<td>£75–102</td>
<td>Widely</td>
</tr>
<tr>
<td>Woodchip</td>
<td>£40–80</td>
<td>Widely</td>
</tr>
<tr>
<td>Sawdust</td>
<td>£50–275</td>
<td>Widely</td>
</tr>
<tr>
<td>Wood shavings</td>
<td>£120–220</td>
<td>Widely</td>
</tr>
<tr>
<td>Sand</td>
<td>£10–20</td>
<td>Widely</td>
</tr>
<tr>
<td>Paper products</td>
<td>£40–85</td>
<td>Widely</td>
</tr>
<tr>
<td>Bracken</td>
<td>On-farm harvesting</td>
<td>Niche</td>
</tr>
<tr>
<td>Pea haulm</td>
<td>£65</td>
<td>Limited</td>
</tr>
<tr>
<td>Oilseed rape straw</td>
<td>£70</td>
<td>Limited</td>
</tr>
<tr>
<td>Miscanthus Prepared bedding</td>
<td>Up to £200</td>
<td>Prepared bedding – limited</td>
</tr>
<tr>
<td>Absorbency</td>
<td>Benefits</td>
<td>Animal health</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Moderate</td>
<td>Abundant</td>
<td>Mould spores</td>
</tr>
<tr>
<td>Low</td>
<td>Abundant</td>
<td>Must be below 30% moisture content</td>
</tr>
<tr>
<td>Moderate</td>
<td>Abundant</td>
<td>Mould spores in damp sawdust. Can be dusty</td>
</tr>
<tr>
<td>Moderate</td>
<td>Clean, can be dust-free</td>
<td>None if kiln-dried and dust extracted</td>
</tr>
<tr>
<td>Low</td>
<td>Hygienic bedding material for cubicles</td>
<td>Coarse sand may be too abrasive</td>
</tr>
<tr>
<td>Low to high depending on product</td>
<td>Liming effect, abundant and cheap depending on product sourced</td>
<td>May cause teat scald when using lime ash</td>
</tr>
<tr>
<td>Moderate</td>
<td>Cheap, warm</td>
<td>Potentially carcinogenic</td>
</tr>
<tr>
<td>Low</td>
<td>Palatable forage</td>
<td>Animals become wet and dirty quickly</td>
</tr>
<tr>
<td>Low</td>
<td>Clean, dust-free</td>
<td>Very stalky material</td>
</tr>
<tr>
<td>High</td>
<td>Clean, dust-free</td>
<td>None</td>
</tr>
</tbody>
</table>
Beef and sheep BRP Manuals

Manual 1  Improving pasture for Better Returns
Manual 2  Assessing the business for Better Returns
Manual 3  Improving soils for Better Returns
Manual 4  Managing clover for Better Returns
Manual 5  Making grass silage for Better Returns
Manual 6  Using brassicas for Better Returns
Manual 7  Managing nutrients for Better Returns
Manual 8  Planning grazing strategies for Better Returns
Manual 9  Minimising carcase losses for Better Returns
Manual 10 Growing and feeding maize silage for Better Returns
Manual 11 Using medicines correctly for Better Returns
Manual 12 The bedding materials directory

See the AHDB Beef & Lamb website beefandlamb.ahdb.org.uk for the full list of Better Returns Programme publications for beef and sheep producers.