Guidelines¹ on

The provision of enrichment material for pigs

1. CONTEXT

This document has been produced in conjunction with Member States and other stakeholders and has been produced in order to aid understanding of the below requirement. The aim is to satisfy the behavioural needs of pigs and at the same time comply with the legal requirements.

2. SCOPE

Council Directive 2008/120/EC defines the minimum standards of welfare for all categories of pigs. It recognises the importance of foraging and exploratory behaviour and provides suggestions for appropriate material:

Paragraph 4 of Annex 1

"... pigs must have permanent access to a sufficient quantity of material to enable proper investigation and manipulation activities, such as straw, hay, wood, sawdust, mushroom compost, peat or a mixture of such, which does not compromise the health of the animals."

and equally so for sows and gilts in Article 3(5):

"5. Member States shall ensure that, without prejudice to the requirements laid down in Annex I, sows and gilts have permanent access to manipulable material at least complying with the relevant requirements of that Annex."

This is what we refer to as enrichment material in this document which offers a range of possibilities that allows farmers (together with the veterinarian or other advisor) to choose the materials most suitable to the local conditions. When making their choice farmers will take into consideration their personal circumstances such as the type of farm, the climatic conditions, which materials are readily available and the economic impact.

¹ Guidelines as such are not legally binding. They do however represent the European Commission’s interpretation of the legal minimum requirements.
3. WHY ENRICHMENT IS IMPORTANT

Pigs investigate their environment and manipulate objects for many reasons - searching for food, looking for bedding materials or a place to lie down or out of simple curiosity about their living area. The foremost, usually referred to as foraging is a combination of rooting and biting, confirming food value by smell and taste. As part of this evolutionary process, natural selection favoured the most successful by enabling pigs to find food all year round. This is a fixed trait in the modern, domestic pig even though they are provided with sufficient food by farmers.

Thus all pigs are still highly-motivated to explore their surroundings in search of food even in a familiar pen with a nutritionally-balanced diet.

- Within the first few days of life, piglets will start to forage and are highly motivated to investigate their environment. Several studies have shown beneficial long-term effects of providing nursing piglets the possibility to root and chew.
- Wild boars spend 85% of their active day on foraging and feeding.
- When domestic pigs are allowed to live freely in a woodland setting, they still spend 75% of their waking hours on foraging and feeding – even when well-fed (as the following diagram illustrates).
- For indoor systems today this means that the urge for the pig to forage and root is still present, even when they are fed ad-lib and should not be hungry. However, the amount of time spent in this activity is responsive to nutritional needs so they may forage more if they are hungry or have any nutritional imbalances in their diet for example.

(Data from Stolba & Woodgush, 1989)

Thus providing a sufficient quantity of suitable materials is important for the welfare of pigs for two reasons

- To enable pigs to fulfil their innate need to bite, root and manipulate. This need is so deeply embedded that if pigs do not have sufficient opportunity for these behaviours, they become stressed and frustrated.
- To reduce risk of tail and ear biting. One (but not the only) reason for these is scarcity of materials to bite. In this situation, some pigs redirect their innate biting behaviour towards other pigs.
4. NECESSARY CHARACTERISTICS OF ENRICHMENT

When domestic pigs are provided with appropriate enrichment material, investigation and manipulation will be expressed. It should also ensure that they don’t use others in the group as an outlet for their need to bite.

To provide the opportunity for ‘proper investigation’ enrichment materials need to:

- **Sustain interest.** Novelty value encourages investigation and manipulation but exploratory behaviour normally decreases within five days of materials being placed in the pen. However there is variation in the continued interest shown. Those which are ignored more quickly (especially artificial ones e.g. made out of iron, plastic) are regarded as less enriching for the animals.

- **Be clean.** They will normally lose interest in enrichment material that is soiled with faeces. Material can become heavily soiled when provided at ground level. This can be avoided by frequent replacement of objects, replenishment of edible materials or by suspending the objects slightly above floor level.

To provide the opportunity for ‘proper manipulation’, enrichment materials need to be **safe** and:

- **Chewable** fulfilling the need to bite, i.e. allow pigs to sink their teeth in the material, ingest it and providing them with information such as taste, odour, etc.

- **Investigable** allowing pigs to root using their snout.

- **Deformable and moveable** allowing thorough interaction with any material, i.e. the pig may change the
4. MAINTAINING HEALTH

First and foremost any enrichment provided to pigs must “not compromise the health of the animals”. Feed and straw or any other source of roughage if harvested or stored poorly, can mould or harbour disease-causing agents which may then cause health problems and injuries.

Straw
Above the thermal neutrality value (i.e. 25-27°C), straw bedding might increase the risk of heat stress, as fermentation within the bedding in deep litter systems is a source of additional heat. However, straw provided in small amounts for manipulation rather than as bedding, or provided in racks, should not give rise to any thermal problems.

On the issue of health one author concluded in 2005 that “the relation between the use of straw and pig health is equivocal: some diseases/injuries are more prevalent in strawed housing systems while the opposite is the case for other diseases/injuries”.

Other materials:
In certain circumstances some materials may not be suitable, e.g.:
- a) sawdust from fresh/green wood is considered to be wet and cold for the animals;
- b) dry sawdust when airborne is dusty, irritant and potentially carcinogenic;
- c) certain woods and their dust contain toxins that can produce severe allergic reactions;
- d) peat may contain disease agents;
- e) mushroom compost may contain substances hazardous to pigs.
- f) dirty enrichment objects can provide a reservoir for disease-causing agents.
Deformability and chewable qualities are desired properties of enrichment but the way in which it breaks down can cause safety issues. For example, metal strips in tyres can cut the mouth when pigs bite into it. With wood, the risks depend on the dryness of the wood, possibly also on the type. After cutting, trees retain the resilient structure of live wood for some months if the wood is not dried. Contrary to this, older and drier wood, such as commercially bought timber, may in some cases splinter when bitten into.

Finally, enrichment material must not be poisonous to the pigs.

5. TYPES OF ENRICHMENT

5.1. **The best enrichment material**

Clean, dry and wholesome straw or green fodder (hay, grass, silage, alfalfa, etc.), that is regularly replenished, can offer all of the main properties that pigs find attractive, that is, edible, chewable, investigable, deformable and moveable. Straw stimulates exploratory behaviour and studies show that exploratory behaviour increases when more straw is available.

However, because straw is not always available or practical as a bedding material, it can be supplied in smaller quantities solely as enrichment in a variety of systems such as feeders or racks.

5.2. **Mixed enrichment materials**

Some types of enrichment are more fulfilling than others, however a mixture of materials, which includes a substrate as bedding can further increase investigatory and manipulatory behaviour. This is particularly important in systems where bedding cannot be provided as a source of enrichment. This does not just mean more...
of the same enrichment, but a variety of enrichments within a pen which offer different forms of stimulation i.e. if there is soft wood attached to a chain then consider providing edible forms of enrichment such as stubble foods (turnips etc.) or forages in racks etc.

5.3. Other enrichment materials

Straw may not be an option in all countries, systems or climates. In this case, other materials may then be more appropriate. For example, mushroom compost, sawdust, peat, hay, alfalfa or silage can provide good alternatives to straw. Further materials not mentioned in the legislation, may also be appropriate, providing they fulfil the legislative requirements and allow for ‘proper investigation and manipulation activities’ without compromising health. For example, peanut shells, miscanthus, ground wood, ground maize corn cobs, natural ropes, compressed straw cylinders, pellets, hessian cloth, shredded paper or natural soft rubber. Note that some of these materials may need to be used in combination with others as they do not have all the necessary main properties.

6. ENRICHMENT MATERIALS

6.1 Bedded systems

In such systems the daily provision of bedding not only ensures that pigs have access to a clean, dry lying area and clean enrichment, it also provides novelty which then stimulates investigation and manipulation activity. Even in these systems however, consideration should be given to providing alternative ways to stimulate more interest e.g. provision in racks or providing bales for the pigs to pull apart themselves.

6.2. Enrichment material not used as bedding

When enrichment as bedding is not possible, as in slatted systems, it can be provided in feeders or racks.
Enrichment material such as straw can be problematic if it passes into slurry systems but this can be avoided with careful management. Adequately sized gaps between bars help to prevent too much enrichment material from being pulled out and falling onto the slats. Providing enough enrichment only for daily use ensures that it remains interesting and is consumed rather than ending up in the slurry.

Use of straw on slatted floors requires that the straw is chopped. One Swedish study showed that it was possible to use lengths of 70mm, while lengths of 130mm were problematic. The best length to use will depend on the type of slatted floor. Ensuring that the daily amount of straw proffered to the pig is actually used by them will help avoid that the slurry system is blocked. However, daily pen cleaning is also needed to ensure that mixed manure and straw do not stay on the solid pen area and hazard the pen hygiene. Another study looked at the practical management of the slurry system, the mechanical scrapers used, the pump and other technical aspects, however, it was concluded that no “one size fits all” solution is available. The management and technical aspects of the system must be adapted to the situation on the farm in question.

Placing racks over mangers or clean mats can help restrict enrichment falling directly onto the slats and allows pigs to continue eating it. Although chopped straw is less attractive as a material and diminishes the benefits, when compared to long straw, studies show that it is still better than no straw for the pigs. When loose material such as straw, hay, miscanthus can only be given in racks or otherwise small quantities, chewable objects are also needed.

Other materials
For suckling piglets, soft materials such as sisal rope, hemp rope and burlap sacks function well. For weaned piglets as well as all older pigs they are also attractive but care needs to be taken to arrange in such a way that

---

2 In Sweden manure is always stored in concrete cisterns outside of the stables.
the pig cannot tear off large pieces that can fall through slats and interfere with the slurry removal system. Fresh wood (pieces of trees cut during recent months and not dried), preferably suspended in a horizontal position below snout level, are efficient in sustaining pigs’ interest over months and can reduce tail and ear biting. It is suitable for all age groups, but suckling piglets may prefer softer materials. In order to maintain active biting and exploration, it is recommended that pieces of wood are replaced with fresh ones at least twice a year.

| Wooden blocks | Rope | Trough with soil to root in |

6.3. Less useful enrichment material

Objects, such as hard plastic piping and chains are often used to provide distraction. They alone however, cannot fulfil all the main properties that have been defined. They are not edible and are barely deformable. They may be kept clean by being suspended over the pen but pigs can quickly lose interest.

More significantly they do not meet the legal minimum requirements. In order to do so, additional enrichment needs to be provided.

For example it has been observed that pigs spend much more time interacting with straw than plastic piping.

<table>
<thead>
<tr>
<th>Pen floor</th>
<th>Enrichment</th>
<th>Time spent on exploration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid</td>
<td>Straw bedding</td>
<td>20 %</td>
</tr>
<tr>
<td>Fully-slatted</td>
<td>Suspended plastic piping</td>
<td>1%</td>
</tr>
</tbody>
</table>
An increase in meaningful enrichment increases exploratory behaviour while an increase in the number of plastic piping does not.

7. CORRECT USAGE OF ENRICHMENT MATERIALS

Indicators that something is wrong; what to look for:

Non-animal based:
- The characteristics and qualities of the material themselves and correct management of these materials

Animal based:
- Inappropriate exploratory behavior (i.e. a low ratio of exploration directed to the enrichment material in comparison to that directed at pen fittings and other pigs or vacuum oral behavior)

The following two indicators indicate, but are not specific to, provision of enrichment material:
- Presence of bitten tails
- Presence of severe skin lesions

7.1 Proper access to enrichment material

Within a group of pigs, both feeding behaviour and exploratory behaviour, is synchronised. There are two peak exploring periods, one during the morning and one in the afternoon with both lasting for several hours. The materials provided need to be available for oral manipulation to all pigs at all times. Observation of sustained interest in materials provided to pigs can be used as an indicator that it is enriching the pigs’ environment in some way. However, if pigs have sustained interest in biting and chewing parts of the accommodation and/or their own faeces, this can indicate that additional enrichment materials should be provided within the pen.

7.2 Cleanliness of enrichment material

If materials become soiled with faeces they are unable to fulfil the pigs’ needs and do not satisfy the legislative requirements.

Indicator:
Non-animal based
- Material soiled with excreta
- Soiling of pen

Animal based
- Increase of disease
- Increased dirtiness of animals
- Increased sham nest building in sows

7.3 Amount of enrichment material

In a study offering a range of access to straw racks, (from 3 to 24 pig spaces for a group of 27 pigs) the amount of exploratory behaviour increased as the number of available pig spaces increased. As well as the enrichment being appropriate, there should therefore, be a sufficient quantity for any pig to gain access when they are motivated to do so.
Note that providing meaningful enrichment in limited quantities generates competition which leads to aggression.

**If the materials are not replenished or are offered in such small quantities that they generate competition amongst the pigs they are unable to fulfil either the pigs’ needs or the legislative requirements.**

**7.4. Novelty and renewal**

The material needs to be regularly replaced or replenished so that the interest of the pig is sustained.

**7.5. Position of enrichment material**

The position of enrichment materials and objects also affects how pigs interact with them and the lower it is placed, the better.

When offered enrichment materials at different heights, pigs spend more time manipulating non soiled objects at ground level when compared to objects hanging 5 cm above floor level. Similarly, pigs manipulate these low-hanging objects more than those offered at snout level, as long as they are clean. Large quantities served all at once or presented out of reach of pigs might gain the taste of ammonia from the environment making them less attractive for the pigs.
In conclusion if the manipulable materials are not presented in a position to ensure easy accessibility by the pigs, they are unable to fulfil the pigs’ behavioural needs and do not satisfy the legislative requirements.
ANNEX I
A pictorial guide to enrichment material:
Fulfilling the need for investigation and manipulation.

In a Technical report submitted to EFSA (2011) it is highlighted that “An appropriate enrichment material can be defined as a material which stimulates exploratory behaviour for an extended length of time, preferably comparable to the level of occupation provided by straw.

The assessment below is in part based on available scientific knowledge and in part on practical experience.

All materials need to be safe, that is not be a health hazard or injurious. To ensure this some materials need to be properly stored and kept dry. Furthermore all the properties listed (edible, chewable, investigable and deformable and moveable) are necessary to meet the legal requirements. This means that if the material provided does not have all properties a combination of materials that together have all properties is essential.

The following lists are not exhaustive and the materials are not ranked. All of the materials listed may be used alone or in combination with others. However the smiley faces indicate their appropriateness in satisfying the pigs’ behavioural needs and some materials will not alone be suitable. Other materials not listed may be used provided they meet legal requirements.

Some of the typical materials that can be provided as enrichment and the behaviours they can fulfil:

<table>
<thead>
<tr>
<th>Materials offered as enrichment: bedding or roughage</th>
<th>Edible</th>
<th>Chewable</th>
<th>Investigable</th>
<th>Deformable and moveable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straw</td>
<td><img src="emoji" alt="Smiley" /></td>
<td><img src="emoji" alt="Smiley" /></td>
<td><img src="emoji" alt="Smiley" /></td>
<td><img src="emoji" alt="Smiley" /></td>
</tr>
<tr>
<td>Hay</td>
<td><img src="emoji" alt="Smiley" /></td>
<td><img src="emoji" alt="Smiley" /></td>
<td><img src="emoji" alt="Smiley" /></td>
<td><img src="emoji" alt="Smiley" /></td>
</tr>
<tr>
<td>Silage</td>
<td><img src="emoji" alt="Smiley" /></td>
<td><img src="emoji" alt="Smiley" /></td>
<td><img src="emoji" alt="Smiley" /></td>
<td><img src="emoji" alt="Smiley" /></td>
</tr>
<tr>
<td>Soil*</td>
<td><img src="emoji" alt="Sad" /></td>
<td><img src="emoji" alt="Sad" /></td>
<td><img src="emoji" alt="Smiley" /></td>
<td><img src="emoji" alt="Smiley" /></td>
</tr>
<tr>
<td>Wood shavings</td>
<td><img src="emoji" alt="Sad" /></td>
<td><img src="emoji" alt="Sad" /></td>
<td><img src="emoji" alt="Smiley" /></td>
<td><img src="emoji" alt="Sad" /></td>
</tr>
</tbody>
</table>
### Materials offered as enrichment: bedding or roughage

<table>
<thead>
<tr>
<th>Materials Offered</th>
<th>Edible</th>
<th>Chewable</th>
<th>Investigable</th>
<th>Deformable and moveable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sawdust</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
</tr>
<tr>
<td>Rack feed (straw, hay or silage)</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
</tr>
<tr>
<td>Hay provided in dispenser</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
</tr>
<tr>
<td>Pellet dispenser</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
</tr>
<tr>
<td>Mushroom compost</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
</tr>
<tr>
<td>Peat</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
<td>![emoji]</td>
</tr>
</tbody>
</table>

1. Depending on the width of the opening between bars, the degree of investigable varies.

### Considering the Animal’s Activity

- **Edible** materials are essential for nutrition.
- **Chewable** materials stimulate chewing, aiding digestion.
- **Investigable** materials encourage exploration and interaction.
- **Deformable and moveable** materials offer flexibility and variety.

### Slat Spacing Recommendation

- For fattening pigs, racks with a slat spacing of between 3.5 cm and 5 cm have proved successful in Switzerland, with a crossbar placed approximately every 9 to 10 cm.
- For breeding sows, the slat spacing should be between 6.5 cm and 7.5 cm.
- For weaned piglets, it should be around 2.5 cm.

### Additional Considerations

- Racks with square mesh grilles have proved less successful. The problem that often occurs with these racks is that the straw does not drop down.

---

---
<table>
<thead>
<tr>
<th>Materials offered as enrichment: bedding or roughage</th>
<th>Edible</th>
<th>Chewable</th>
<th>Investigable</th>
<th>Deformable and moveable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miscanthus pressed</td>
<td>🍃</td>
<td>🍃</td>
<td>🍃</td>
<td>🍃</td>
</tr>
<tr>
<td>Miscanthus chopped</td>
<td>🍃</td>
<td>🍃</td>
<td>🍃</td>
<td>🍃</td>
</tr>
<tr>
<td>Root vegetables (e.g. turnips, fodder beet swede)</td>
<td>🍃</td>
<td>🍃</td>
<td>🍃</td>
<td>🍃</td>
</tr>
</tbody>
</table>

*Although it may contain edible components*

Some of the typical materials and objects that can be provided as enrichment material:

<table>
<thead>
<tr>
<th>Material</th>
<th>Edible</th>
<th>Chewable</th>
<th>Investigable</th>
<th>Deformable and moveable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft, untreated wood</td>
<td>😞</td>
<td>🍃</td>
<td>😞</td>
<td>🍃</td>
</tr>
<tr>
<td>Shredded paper (not containing toxins)</td>
<td>😞</td>
<td>🍃</td>
<td>😞</td>
<td>🍃</td>
</tr>
<tr>
<td></td>
<td>BUT</td>
<td>🍃</td>
<td>😞</td>
<td>🍃</td>
</tr>
<tr>
<td></td>
<td>if recycled, contains toxins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Description</td>
<td>Symbols</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardboard</td>
<td>BUT if recycled, contains toxins</td>
<td>❌</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural rope</td>
<td></td>
<td>🌻</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cloth: Hessian sack</td>
<td>Some rooting possible if left at floor level</td>
<td>❌</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cylinder of compressed straw</td>
<td>A sufficient amount of straw needs to be accessible outside the cylinder. Use of open rack may be preferable.</td>
<td>🌻</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspended or fixed sawdust briquette (without glue)</td>
<td>Some rooting possible if left at floor level</td>
<td>❌</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic straw dispenser</td>
<td>Some rooting possible if left at floor level</td>
<td>❌</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sand and stones</td>
<td></td>
<td>🌻</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Not suitable when used as the only enrichment material in a pen**

<table>
<thead>
<tr>
<th>Material</th>
<th>Edible</th>
<th>Chewable</th>
<th>Investigable</th>
<th>Deformable and moveable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chain</td>
<td>![Image](179x640 to 280x686)</td>
<td>![Image](407x653 to 441x687)</td>
<td>![Image](467x658 to 498x687)</td>
<td>![Image](529x658 to 559x687)</td>
</tr>
<tr>
<td></td>
<td>![Image](76x570 to 274x627)</td>
<td>![Image](360x586 to 391x615)</td>
<td>![Image](409x581 to 440x615)</td>
<td>![Image](467x586 to 498x687)</td>
</tr>
<tr>
<td></td>
<td>![Image](71x452 to 170x509)</td>
<td>![Image](360x586 to 391x615)</td>
<td>![Image](409x581 to 440x615)</td>
<td>![Image](467x586 to 498x687)</td>
</tr>
<tr>
<td>Rubber</td>
<td>![Image](179x640 to 280x686)</td>
<td>![Image](407x653 to 441x687)</td>
<td>![Image](467x658 to 498x687)</td>
<td>![Image](529x658 to 559x687)</td>
</tr>
<tr>
<td></td>
<td>![Image](71x452 to 170x509)</td>
<td>![Image](360x586 to 391x615)</td>
<td>![Image](409x581 to 440x615)</td>
<td>![Image](467x586 to 498x687)</td>
</tr>
<tr>
<td>Soft plastic</td>
<td>![Image](71x452 to 170x509)</td>
<td>![Image](360x586 to 391x615)</td>
<td>![Image](409x581 to 440x615)</td>
<td>![Image](467x586 to 498x687)</td>
</tr>
<tr>
<td>e.g. Alkathene pipe</td>
<td>![Image](71x452 to 170x509)</td>
<td>![Image](360x586 to 391x615)</td>
<td>![Image](409x581 to 440x615)</td>
<td>![Image](467x586 to 498x687)</td>
</tr>
<tr>
<td>Natural soft rubber</td>
<td>![Image](71x452 to 170x509)</td>
<td>![Image](360x586 to 391x615)</td>
<td>![Image](409x581 to 440x615)</td>
<td>![Image](467x586 to 498x687)</td>
</tr>
<tr>
<td>Hard plastic</td>
<td>![Image](71x452 to 170x509)</td>
<td>![Image](360x586 to 391x615)</td>
<td>![Image](409x581 to 440x615)</td>
<td>![Image](467x586 to 498x687)</td>
</tr>
<tr>
<td></td>
<td>![Image](71x452 to 170x509)</td>
<td>![Image](360x586 to 391x615)</td>
<td>![Image](409x581 to 440x615)</td>
<td>![Image](467x586 to 498x687)</td>
</tr>
<tr>
<td>Hard Wood</td>
<td>![Image](71x452 to 170x509)</td>
<td>![Image](360x586 to 391x615)</td>
<td>![Image](409x581 to 440x615)</td>
<td>![Image](467x586 to 498x687)</td>
</tr>
</tbody>
</table>

- **Chain**: Superficial only
- **Rubber**: The harder the rubber, the less chewable; The harder the rubber, the less deformable
- **Soft plastic**: The harder the plastic, the less chewable
- **Natural soft rubber**: The harder the plastic, the less deformable
- **Hard plastic**: The harder the plastic, the less deformable
- **Hard Wood**: Hard wood, can be too hard for the pigs to chew; Wood can splinter and cause chronic pain. Hard wood, in big blocks, can be too hard for the pigs to deform
<table>
<thead>
<tr>
<th></th>
<th>Ordinary ball</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt lick</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
</tbody>
</table>

![Ordinary ball image](image1)

![Salt lick image](image2)