

## Indoor – in fully or partially slatted housing

In housing systems where materials for bedding cannot be provided as a source of enrichment various other enrichment materials should be provided. Some of these will need to be used in combination with other enrichments as presented alone, they do not fulfil the required properties to be considered **optimal** enrichment, nor do they meet the legal minimum requirements.<sup>7,8,11</sup>



Finishers on slats with enrichment objects (AHDB Pork).




### Things to consider when using non-bedding type enrichments:




- As a general rule, object-based enrichments are best suited for pigs kept in systems with slatted floors. However, with different presentations, substrate in small amounts can be effective without adversely affecting slurry systems
- Consider using two or more of these enrichments at any one time
- Introduce new materials and objects from time to time, change their presentation (ie suspend or place on the floor) to prevent pigs losing interest in them
- Keep clean, and replace if items become damaged or destroyed (suspending items can help reduce them becoming fouled)
- Objects placed on the floor can encourage pigs to express natural rooting behaviour.




## Dry sows in fully or partially slatted housing

For dry sows housed on slats or in partially slatted housing, providing enrichment can have a range of benefits, including reducing aggressive behaviour directed at their pen-mates, biting and chewing pen fittings, excessive drinking or chewing on nipple drinkers and reduce stress in the animals.<sup>2</sup>

Suggested materials for how to provide enrichment for dry sows housed on slats or partially slatted housing can include:

Enrichment Material/Item	Suggested Properties and level of interest as enrichment	How to present it	Practical considerations
<p>Paper or cardboard</p> 	<p>Suboptimal (chewable and manipulable – maybe edible and investigable, if not recycled)</p>	<p>Paper can be provided shredded or as sheets, either loose as a partial bedding, or from a side mounted rack. Cardboard can be as sheets or as boxes, usually provided loose in the pen. Provide as available, but enough to avoid competition and squabbling. Replace as required.</p>	<p>Care must be taken to ensure there are no staples, to avoid harm to the pigs. Shredded paper can be obtained at a cost, but may not be suitable for all slatted housing as large amounts could interfere with some slurry systems. Recycled paper and cardboard is much less suitable as it may contain toxins from print ink etc. Should be complimented by edible and investigable materials.</p>
<p>Hessian cloth sacks (or jute/burlap etc.)</p> 	<p>Suboptimal (chewable and manipulable – of limited edible and investigable quality)</p>	<p>Can be provided suspended on rope, tied to gates or attached to pen walls. Provide as available, but enough to avoid competition and squabbling. Replace as required.</p>	<p>Cloth sacks made of natural materials and fibres are best. Costs can be from 50p/sack. Be aware that any long sections that break off may block slurry systems if they pass through slats. Should be complimented by edible and investigable materials.</p>
<p>Root Vegetables (eg turnips, fodder, beet swede)</p> 	<p>Optimal (edible, chewable, investigable and manipulable)</p>	<p>Can be provided either loose in the pen, or in a tray/dispenser/rack attached to the side of the pen. Provide as available, but enough to avoid competition and squabbling. Replace as required.</p>	<p>Be careful not to provide too much, and consider supplementary nutritional value to overall rations. Root vegetables can take up space in the trough which will encourage sows to root for their feed as well as exploring the root vegetables. Depending on the season, some surplus vegetables can cost, and need replacing regularly.</p>

			<p>Significant cost and time associated with use.  <b>Avoid parsnips as they are toxic to pigs.</b>  <b>Must not be kitchen waste.</b></p>
<p>Natural rope (eg sisal or hemp)</p> 	<p>Suboptimal (chewable and manipulable – maybe edible and investigable, but not always)</p>	<p>Can be wound around the bars of gates or pen fittings, or suspended vertically. Knots can be added to the rope to increase complexity and make it more difficult to break pieces off. Appears to hold the pigs' interest best when<sup>19</sup>:</p> <ul style="list-style-type: none"> <li>-A sisal rope about 1 m (40 in) long is used</li> <li>-The diameter of the rope is about 14mm (approx. 1/2 inch)</li> <li>-About 20 cm (approx. 8 inches) of rope touches the floor.</li> </ul> <p>Provide enough rope pieces to avoid competition and squabbling.  Replace when required (ie if damaged or soiled).</p>	<p>Comes in various thicknesses.  Thicker rope is better and less likely to pass through slats.  Should be complimented by edible and investigable materials.</p>
<p>Football/wellington boots/plastic items</p> 	<p>Marginal (maybe chewable and manipulable – not edible or investigable)</p>	<p>Present either suspended on rope/chain, or given loose in the pen.  Provide enough to avoid competition and squabbling.  Once pigs begin to show no interest, replace with another object or enrichment material.  Can vary suspending balls or wellingtons and providing them loose.  Replace when required (ie if damaged or soiled).</p>	<p>If provided loose in the pen, toys can become quickly soiled, and reduce in interest.  Minimal installation in terms of time and cost.  Never introduce dirty wellington boots as this could easily transfer disease or be a health risk to the pigs.  Some commercial items available.  Should be complimented by optimal or suboptimal materials.</p>
<p>Fresh wood (virgin – recently cut not dried)</p> 	<p>Suboptimal (chewable and manipulable – maybe edible and investigable, but not always)</p>	<p>Can be suspended (for example by a chain) at pig head height or left at floor level.  Wood can be put into a holding tube or attached to a wall using a hook.  The size of the wooden pieces should be proportional to the size of the pigs.</p>	<p>Make sure there are no sharp edges and that the wood is not dried or splintering, and will not cause harm to the pigs or the pen. Fresh cut softwood wood stimulates more interest as it is more odorous.  Hardwoods can be harder to chew. Pigs can manipulate wood better if it is suspended.</p>

		<p>Provide enough pieces to avoid competition and squabbling.          Replace weekly, or more often – as required.</p>	<p>Wood pieces should be thick enough to ensure they will not pass through the slats.  <b>Avoid yew, which is poisonous to livestock.</b>          Should be complimented by edible and investigable materials.</p>
<p>Strong hosepipe</p> 	<p>Marginal (chewable and manipulable – not edible or investigable)</p>	<p>Can be wound around the bars of the gates suspended vertically, or fixed to the pen walls.          Provide enough hosepipe to avoid competition and squabbling.          Replace when required (ie if damaged or soiled).</p>	<p>Should be thick enough not to pass through slats.          Should be changed regularly to try to maintain pigs' interest.          Should be complimented by optimal or suboptimal materials.</p>
<p>Plastic dog/pig toys</p> 	<p>Marginal (maybe chewable and manipulable depending on design – not edible or investigable).</p>	<p>Present either suspended on rope or chain, or given loose in the pen.          Provide enough toys to avoid competition and squabbling.          Once pigs begin to show no interest, replace with another toy or enrichment material. Can vary suspending toys and providing them loose.          Replace when required (ie if damaged or soiled).</p>	<p>If provided loose in the pen, toys can become quickly soiled, and reduce in interest. Should be changed regularly to try to maintain pigs' interest.          Minimal installation in terms of time. Can range in cost from cheap to expensive.          Should be big enough not to pass through slats.          Some commercial items available.          Should be complimented by optimal or suboptimal materials.</p>
<p>Straw or hay in racks or compressed (not as bedding)</p> 	<p>Suboptimal (edible, chewable and manipulable – but may not be easily investigable)</p>	<p>Can be presented in racks, dispensers or containers, positioned so that:</p> <ul style="list-style-type: none"> <li>- Access by the pigs is easy</li> <li>- That it can be easily refilled by staff</li> </ul> <p>Provide enough to avoid competition and squabbling.          Refill as required.</p>	<p>Narrow gaps between bars of the rack helps to prevent too much enrichment being pulled out and falling onto the slats.          Consider the supplementary nutritional value to overall rations.          It may be necessary to place a tray on the floor under rack/dispenser to prevent fallen material affecting the slurry system. Regular re-filling of the racks/dispensers can take a lot of time of staff and materials can be costly.</p>

Stimulating interest and providing an activity for pigs is a useful way to enable pigs to express natural behaviour. Varying the objects on a weekly basis also provides novelty.



Example of wood in a holding tube, mounted on a pen wall (AHDB Pork).



Straw rack with straw and under tray on slats (EUWelNet)

How to be confident that the enrichment is appropriate?

Signs of insufficient enrichment could include;

- More aggressive behaviour directed to their pen-mates. This can include fighting or chewing and biting e.g. ears, flank and vulva biting
- Excessive drinking or chewing on nipple drinkers
- Biting or chewing at pen fittings
- Unsettled pigs
- Increased noise.



All of the above could also indicate the early signs of a health breakdown.










## Weaners in fully or partially slatted housing

For weaners housed on slats or in partially slatted housing, providing enrichment can have a range of benefits, including reducing aggressive behaviour directed at their pen-mates, biting and chewing pen fittings, excessive drinking or chewing on nipple drinkers and reduce stress in the animals.<sup>2</sup> If the weaners have come from enriched pre-weaning environments, it is very important that suitable and sufficient enrichment continues to be provided in their post-weaning environment to prevent frustration.<sup>21,22</sup>

Suggested materials for how to provide enrichment for weaners in fully or partially slatted housing can include:

Enrichment Material/Item	Suggested Properties and level of interest as enrichment	How to present it	Practical considerations
<p>Natural rope (eg sisal or hemp)</p> 	<p>Suboptimal (chewable and manipulable – maybe edible and investigable, but not always)</p>	<p>Can be suspended or wrapped around pen fittings. Knots can be added to the rope to increase complexity and make it more difficult to break pieces off. Appears to hold the pigs' interest best when<sup>19</sup>:</p> <ul style="list-style-type: none"> <li>-A sisal rope about 1 m (40 in) long is used</li> <li>-The diameter of the rope is about 14mm (approx. 1/2 inch)</li> <li>-About 20 cm (approx. 8 inches) of rope touches the floor.</li> </ul> <p>Provide enough rope pieces to avoid competition and squabbling. Replace when required (ie if damaged or soiled).</p>	<p>Thicker rope is better and less likely to pass through slats, and interfere with slurry system. Relatively inexpensive. Should be complimented by more edible and investigable materials.</p>
<p>Hessian cloth sacks (or jute/burlap etc.)</p> 	<p>Suboptimal (chewable and manipulable – not edible and of limited investigable quality)</p>	<p>Can be provided suspended on rope, tied to gates or attached to pen walls. Provide as available, but enough to avoid competition and squabbling. Replace as required.</p>	<p>Cloth sacks made of natural materials and fibres are best. Costs can be from 50p/sack. Be aware that any long sections that break off may block slurry systems if they pass through slats. Should be complimented by edible and investigable materials.</p>

<p>Fresh wood (virgin – recently cut not dried)</p> 	<p>Suboptimal (chewable and manipulable – maybe edible and investigable, but not always)</p>	<p>Can be suspended (for example by a chain) at pig head height or lower, or left at floor level.  Wood can be put into a holding tube or attached to a wall using a hook.  The size of the wooden pieces should be proportional to the size of the pigs.  Provide enough pieces to avoid competition and squabbling.  Replace weekly, or more often – as required.</p>	<p>Make sure there are no sharp edges and that the wood is not dried or splintering, and will not cause harm to the pigs or the pen. Fresh cut softwood wood stimulates more interest as it is more odorous. Hardwoods can be harder to chew. Pigs can manipulate wood better if it is suspended. Wood pieces should be thick enough to ensure they will not pass through the slats.  <b>Avoid yew, which is poisonous to livestock.</b>  Should be complimented by edible and investigable materials.</p>
<p>Strong hosepipe</p> 	<p>Marginal (chewable and manipulable – not edible or investigable)</p>	<p>Can be wound around the bars of the gates suspended vertically, or fixed to the pen walls.  Provide enough hosepipe to avoid competition and squabbling.  Replace when required (ie if damaged or soiled).</p>	<p>Should be thick enough not to pass through slats.  Should be changed regularly to try to maintain pigs' interest.  Should be complimented by optimal or suboptimal materials.</p>
<p>Plastic dog/pig toys</p> 	<p>Marginal (maybe chewable and manipulable depending on design – not edible or investigable).</p>	<p>Present either suspended on rope or chain, or given loose in the pen.  Provide enough toys to avoid competition and squabbling.  Once pigs begin to show no interest, replace with another toy or enrichment material. Can vary suspending toys and providing them loose.  Replace when required (ie if damaged or soiled).</p>	<p>If provided loose in the pen, toys can become quickly soiled, and reduce in interest.  Should be changed regularly to try to maintain pigs' interest.  Minimal installation in terms of time. Can range in cost from cheap to expensive.  Should be big enough not to pass through slats.  Some commercial items available.  Should be complimented by optimal or suboptimal materials.</p>

<p>Football/wellington boots/plastic items</p> 	<p>Marginal (maybe chewable and manipulable – not edible or investigable)</p>	<p>Present either suspended on rope/chain, or given loose in the pen. Provide enough to avoid competition and squabbling. Once pigs begin to show no interest, replace with another object or enrichment material. Can vary suspending balls or wellingtons and providing them loose. Replace when required (ie if damaged or soiled).</p>	<p>If provided loose in the pen, toys can become quickly soiled, and reduce in interest. Minimal installation in terms of time and cost. Never introduce dirty wellington boots as this could easily transfer disease or be a health risk to the pigs. Some commercial items available. Should be complimented by optimal or suboptimal materials.</p>
<p>Shredded paper and cardboard</p> 	<p>Suboptimal (chewable and manipulable – maybe edible and investigable, if not recycled)</p>	<p>Can be provided loose in the pen, as a few handfuls daily, or as cardboard sheets or boxes Replace as frequently, or daily.</p>	<p>Care must be taken to ensure there are no staples, to avoid harm to the pigs. Can be obtained at a cost. Recycled paper and cardboard is much less suitable as it may contain toxins from print ink etc. Be aware that large amounts may block slurry systems. Should be complimented by more edible and investigable materials.</p>
<p>Wood shavings</p> 	<p>Suboptimal (investigable and manipulable – but offer limited edible, and chewable qualities)</p>	<p>Can be provided loose in the pen, as a few handfuls daily, or from a rack or dispenser. Replace as frequently, or daily.</p>	<p>Be aware that large amounts may block slurry systems. Significant cost and time associated with use. Should be complimented by more edible and chewable materials.</p>
<p>Straw or hay in racks or compressed (not as bedding)</p> 	<p>Suboptimal (edible, chewable and manipulable – but may not be easily investigable)</p>	<p>Can be presented in racks, dispensers or containers, positioned so that: - Access by the pigs is easy - That it can be easily refilled by staff Provide enough to avoid competition and squabbling. Refill as required.</p>	<p>Narrow gaps between bars of the rack helps to prevent too much enrichment being pulled out and falling onto the slats. Consider the supplementary nutritional value to overall rations. It may be necessary to place a tray on the floor under rack/dispenser to prevent fallen material affecting the slurry system. Regular re-filling of the racks/dispensers can take a lot of time of staff and materials can be costly.</p>



Stimulating interest and providing an activity for pigs is a useful way to enable pigs to express natural behaviour. Varying the objects on a weekly basis also provides novelty.



Weaners on slats with plastic piping suspended with chains are marginal enrichment, and should be complimented by optimal or suboptimal materials (AHDB Pork)

How to be confident that the enrichment is appropriate?

Signs of insufficient enrichment could include;



- More aggressive behaviour directed to their pen-mates. This can include fighting or chewing and biting e.g. ears, flank and tail biting
- Excessive drinking or chewing on nipple drinkers
- Biting or chewing at pen fittings
- Unsettled pigs
- Increased noise.





All of the above could also indicate the early signs of a health breakdown.





## Growers and finishers in fully or partially slatted housing

For growers and finishers housed on slats or in partially slatted housing, providing enrichment can have a range of benefits, including reducing aggressive behaviour directed at their pen-mates, biting and chewing pen fittings, excessive drinking or chewing on nipple drinkers and reduce stress in the animals.<sup>2</sup> If the pigs have come from previously enriched environments, it is very important that suitable and sufficient enrichment continues to be provided in their grower and finisher pens environment to prevent frustration.<sup>20</sup>

Suggested materials for how to provide enrichment for growers and finishers in fully or partially slatted housing can include:

Enrichment Material/Item	Suggested Properties and level of interest as enrichment	How to present it	Practical considerations
<p>Natural rope (eg sisal or hemp)</p> 	<p>Suboptimal (chewable and manipulable – maybe edible and investigable, but not always)</p>	<p>Can be suspended or wrapped around pen fittings away from the crate. Knots can be added to the rope to increase complexity and make it more difficult to break pieces off. Appears to hold the pigs' interest best when<sup>19</sup>:</p> <ul style="list-style-type: none"> <li>-A sisal rope about 1 m (40 in) long is used</li> <li>-The diameter of the rope is about 14mm (approx. 1/2 inch)</li> <li>-About 20 cm (approx. 8 inches) of rope touches the floor.</li> </ul> <p>Provide enough rope pieces to avoid competition and squabbling. Replace when required (ie if damaged or soiled).</p>	<p>Thicker rope is better and less likely to pass through slats, and interfere with slurry system. Relatively inexpensive. Should be complimented by more edible and investigable materials.</p>
<p>Wood shavings</p> 	<p>Suboptimal (investigable and manipulable – but offer limited edible and chewable qualities)</p>	<p>Can be provided loose in the pen, as a few handfuls daily, or from a rack or dispenser. Replace as frequently, or daily.</p>	<p>Be aware that large amounts may block slurry systems. Significant cost and time associated with use. Should be complimented by more edible and chewable materials.</p>

<p>Hessian cloth sacks (or jute/burlap etc.)</p> 	<p>Suboptimal (chewable and manipulable – not edible and of limited investigable quality)</p>	<p>Can be provided suspended on rope, tied to gates or attached to pen walls. Provide as available, but enough to avoid competition and squabbling. Replace as required.</p>	<p>Cloth sacks made of natural materials and fibres are best. Costs can be from 50p/sack. Be aware that any long sections that break off may block slurry systems if they pass through slats. Should be complimented by edible and investigable materials.</p>
<p>Fresh wood (virgin – recently cut not dried)</p> 	<p>Suboptimal (chewable and manipulable – maybe edible and investigable, but not always)</p>	<p>Add to the group as objects. Can be suspended (for example by a chain) at pig head height or left at floor level. Wood can be put into a holding tube or attached to a wall using a hook. The size of the wooden pieces should be proportional to the size of the pigs. Provide enough pieces to avoid competition and squabbling. Replace weekly, or more often – as required.</p>	<p>Make sure there are no sharp edges and that the wood is not dried or splintering, and will not cause harm to the pigs or the pen. Fresh cut softwood wood stimulates more interest as it is more odorous. Hardwoods can be harder to chew. Pigs can manipulate wood better if it is suspended. Wood pieces should be thick enough to ensure they will not pass through the slats. <b>Avoid yew, which is poisonous to livestock.</b> Should be complimented by edible and investigable materials.</p>
<p>Strong hosepipe</p> 	<p>Marginal (chewable and manipulable – not edible or investigable)</p>	<p>Can be wound around the bars of the gates suspended vertically, or fixed to the pen walls. Provide enough hosepipe to avoid competition and squabbling. Replace when required (ie if damaged or soiled).</p>	<p>Should be thick enough not to pass through slats. Should be changed regularly to try to maintain pigs' interest. Should be complimented by optimal or suboptimal materials.</p>
<p>Plastic dog/pig toys</p> 	<p>Marginal (maybe chewable and manipulable depending on design – not edible or investigable).</p>	<p>Present either suspended on rope or chain, or given loose in the pen. Provide enough toys to avoid competition and squabbling. Once pigs begin to show no interest, replace with another toy or enrichment material. Can vary suspending toys and providing them loose. Replace when required (ie if damaged or soiled).</p>	<p>If provided loose in the pen, toys can become quickly soiled, and reduce in interest. Should be changed regularly to try to maintain pigs' interest. Minimal installation in terms of time. Can range in cost from cheap to expensive. Should be big enough not to pass through slats. Some commercial items available. Should be complimented by optimal or suboptimal materials.</p>

<p>Football/wellington boots/plastic items</p> 	<p>Marginal (maybe chewable and manipulable – not edible or investigable)</p>	<p>Present either suspended on rope/chain, or given loose in the pen. Provide enough to avoid competition and squabbling. Once pigs begin to show no interest, replace with another object or enrichment material. Can vary suspending balls or wellingtons and providing them loose. Replace when required (ie if damaged or soiled).</p>	<p>If provided loose in the pen, toys can become quickly soiled, and reduce in interest. Minimal installation in terms of time and cost. Never introduce dirty wellington boots as this could easily transfer disease or be a health risk to the pigs. Some commercial items available. Should be complimented by optimal or suboptimal materials.</p>
<p>Shredded paper and cardboard</p> 	<p>Suboptimal (chewable and manipulable – maybe edible and investigable, if not recycled)</p>	<p>Can be provided loose in the pen, as a few handfuls daily, or as cardboard sheets or boxes Replace as frequently, or daily.</p>	<p>Care must be taken to ensure there are no staples, to avoid harm to the pigs. Can be obtained at a cost. Recycled paper and cardboard is much less suitable as it may contain toxins from print ink etc. Be aware that large amounts may block slurry systems. Should be complimented by more edible and investigable materials.</p>
<p>Root Vegetables (eg turnips, fodder, beet swede)</p> 	<p>Optimal (edible, chewable, investigable and manipulable)</p>	<p>Can be provided either loose in the pen, or in a tray/dispenser/rack, attached to the side of the pen or suspended. Provide as available, but enough to avoid competition and squabbling. Replace as required.</p>	<p>Be careful not to provide too much, and consider supplementary nutritional value to overall rations. Avoid parsnips. Depending on the season, some surplus vegetables can cost, and need replacing regularly. Significant cost and time associated with use. <b>Must not be kitchen waste.</b></p>
<p>Straw or hay in racks or compressed (not as bedding)</p> 	<p>Suboptimal (edible, chewable and manipulable – but may not be easily investigable)</p>	<p>Can be presented in racks, dispensers or containers, positioned so that: - Access by the pigs is easy - That it can be easily refilled by staff Provide enough to avoid competition and squabbling. Refill as required.</p>	<p>Narrow gaps between bars of the rack helps to prevent too much enrichment being pulled out and falling onto the slats. It may be necessary to place a tray on the floor under rack/dispenser to prevent fallen material affecting the slurry system. Consider the supplementary nutritional value to overall rations. Regular re-filling of the racks/dispensers can take a lot of time of staff and materials can be costly.</p>

Stimulating interest and providing an activity for pigs is a useful way to enable pigs to express natural behaviour. Varying the objects on a weekly basis also provides novelty.



Growers with a commercially available plastic toy - Bite Rite™ (AHDB Pork)

How to be confident that the enrichment is appropriate?

Signs of insufficient enrichment could include;

- More aggressive behaviour directed to their pen-mates. This can include fighting or chewing and biting e.g. ears, flank and tail biting
- Excessive drinking or chewing on nipple drinkers
- Biting or chewing at pen fittings
- Unsettled pigs
- Increased noise.

All of the above could also indicate the early signs of a health breakdown.