

Working Safely with Bales on the Farm

Information Sheet

Nov 2020

Fatal injuries involving work with bales

Farmers, contractors and all on farms need to know and understand the risks involved when dealing with all types of bales. Many people have been killed when working with bales on Irish farms. Some of whom have died as a result of being crushed by falling bales or rolled over by round bales. Others have been crushed or trapped by tractors or farm machinery which was involved in transporting or moving bales on the farm.

Bales are commonly made from hay, straw or silage and pose a significant risk while being made or handled on the farm.

Baled silage is now made on over two-thirds of all farms in Ireland and accounts for one third of all silage made. It is particularly prevalent as the primary silage-making system on both beef farms and smaller-sized farms. However, it is also widespread as a second silage-making system and as a simple means of storage of extra fodder on many other farms.

When moving bales, take into account the weight of any load and handling equipment attached. Machinery instruction manuals will provide the relevant information but, for example, a telescopic handler lifting three big bales may be carrying a load of nearly 2 tonnes; a lorry trailer carrying 36 big bales may be carrying a load of more than 20 tonnes.

- Do not lift or stack higher than the capabilities of the handling equipment being used.
- Do not carry a bale or bales on a loader or telescopic handler in such a way that it obscures the driver's vision.

Safe stacking location

- Select an uncluttered storage site from which the bales can be conveniently and safely removed at feeding time.
- Chose a level, smooth and where possible a hard surface or well drained area on which to store the bales as soft or uneven ground increases the risk of machinery incidents. Regularly check ground condition and repair if damaged or uneven.

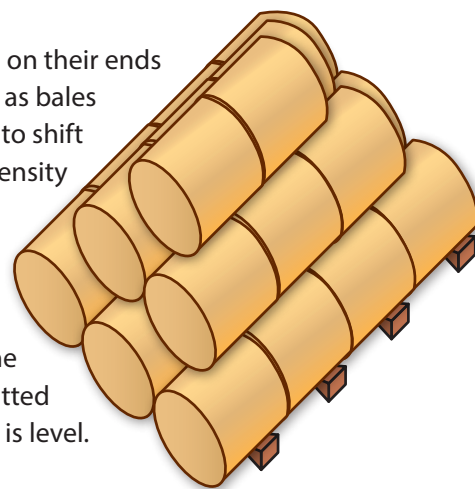


- Do not allow a person/pedestrian to be present during stacking and de-stacking work to prevent injury if a bale falls.
- Stacks should be positioned well away from overhead power lines.

Round bales

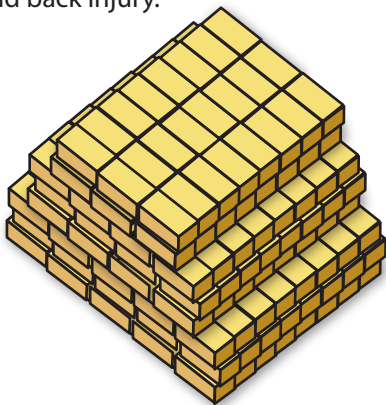
Where space permits it is best to store all round bales one high on their flat ends. However, this may not be practical. If round bales must be stacked the safest stacking method is on their curved sides in a pyramid stack. The bales on the outside of the bottom row should be prevented from moving by means of chocks or other supports. The maximum height of the stack should be 3 bales high. Where the bales are not very dense (unwilted hay) or soft (below 35% dry matter in wrapped silage), the maximum height of two bales is advised.

Stacking round bales on their ends is not recommended as bales can have a tendency to shift due to the variable density of the material in the bale. Storage of round bales on their ends or sides in a single layer on the ground can be permitted provided the ground is level.



Square bales

- Square bales should be stacked using an interlocking pattern to tie-in the bales with the row underneath.
- The maximum height of a stack of square bales should be one and a half times the width of the base.
- If it is really necessary to work on top of the stack of square bales (for example, moving bales into position or placing cover on the stack) great care must be taken to prevent risk of falls from height and back injury.



Removing bales from the stack

- Use suitable bale handling equipment operated by a competent machine operator i.e. competent, trained and experienced person to remove bales.
- Remove the bales from the upper row first.
- Do not remove bales from the bottom or middle of the stack as this may lead to dislodgement and risk of being crushed by a falling bale.
- There may be some settlement of the remaining bales after removal from the stack.

CASE STUDIES

A 74 year old farmer was bringing his round hay bales into a barn from a field nearby. While he was working in the barn, a bale fell from a stack and struck him on the lower body. He was removed to hospital where he died several days later.

A 70 year old farmer was in the process of unwrapping a bale of silage in the vicinity of stacked silage bales when a second bale toppled from the stack and crushed him causing fatal injuries.



Transporting bales using tractors and loaders

- The removal of round bales or square bales from fields and their subsequent transportation must be planned, ensuring a safe system of work is used that considers; risks arising from the machinery to be used, the competence and training of machinery operators, the ground conditions including slopes, the presence of overhead lines, securing of loads and the safety of the route to storage.
- Use bale handling equipment, tractors, tele handlers and trailers that are well designed, safe and well maintained.
- Take into account the effect of the weight of the bales on axles and weight distribution of the machine or trailer.
- Drivers must ensure that their view is not obscured. Ensure a traffic management plan is prepared, understood and implemented by all working on the farm to eliminate the risk of pedestrians and machinery coming into contact.
- If using bale spikes, two or more spikes are recommended to prevent rotation or loosening of the bale during transport. Bale spikes should be removed, covered or folded back when travelling empty on the road so as not to pose a risk to road users.
- If you need to dismount from the tractor or loader which is transporting bales to carry out another task (for example, to open a gate or remove plastic from bales), ensure the hand brake is fully applied, switch off engine and remove the key.
- When moving bales with a tractor and front loader or tele handler, keep the load as low as possible, avoid jerky movements and travel slowly. You may need to use weights on the front or rear to counterbalance the load and give good control of the steering.

- It is essential that all tractors and front end loaders used to move bales are fitted with approved cabs to provide falling objects protection (FOPS) and roll over protection (ROPS).

CASE STUDIES

A 33 year old farmer was found dead after he was crushed between a silage bale mounted on the front loader of his tractor and a feed barrier of the slatted unit.

A 40 year old farmer was found trapped between a silage bale on the loading attachment of a tele porter and the feeding barrier of a slatted shed. He was pronounced dead at the scene.

A 48 year old man was killed in a field when a bale dropped out of the baler wrapper and rolled over him.



Only consider stacking round bales on their ends if they are to be stored within a secure, stable building where the building has sides or other suitable measures provided to reduce the risk of bales falling out. A level, even floor surface is also required as is regular maintenance/checks of stacks.

Transporting bales using trailers and trucks

- Trailers and trucks used to transport bales must not be overloaded.
- Bales should not overhang the edges of the trailer or truck.
- Secure the load with suitable straps using double straps at the rear of the load avoiding the need to work at height.
- Avoid high speeds and take account of the effects of weight of the load on the effectiveness of the braking and steering of the load.

Child safety and bales

- Ensure children are not allowed play on top of stacked bales or use the stack as a play area/den.
- Do not allow children to be present during stacking and de-stacking work.
- Do not allow children to ride on a stack of bales being carried on a trailer or on bale handling equipment.
- Remove ladders to prevent children gaining access.
- Children should not be allowed in the farmyard or fields where bales are being moved, handled or transported.



Remember

- Make sure all workers, including employees, the self-employed and contractors, are:
 - properly trained,
 - aware of the dangers,
 - aware of safe working procedures,
 - equipped with, and wear, appropriate personal protective equipment,
 - medically and physically fit for the work being carried out,
 - aware of what to do if working on their own, and
 - aware of what to do if there is an accident or emergency.



CASE STUDY

A 9 year old child fell from a moving trailer transporting bales on the public road and died in hospital some days later.

CHECKLIST ✓

Some precautions to be taken before working with bales on the farm

Safety check	Y/N
<p>A risk assessment for work involving bales is carried out, including checking & discussing with persons involved with the work;</p> <ul style="list-style-type: none"> ● equipment to be used and its condition, ● experience, training and competency of all operators, ● a traffic management plan prepared, understood and implemented by all working and present on the farm, ● ensure no pedestrians are present in the vicinity of work activity, ● risks and what could go wrong, ● controls or safe systems of work to be used including safe stop procedure, ● safety of those not involved in the work, and ● actions in case of emergency. 	
<p>Children and other pedestrians are kept away from areas where bales are being moved or stacked or they are under close supervision by an adult not involved with the work.</p>	
<p>A safe work area has been identified where bales are being moved to or stacked (with sufficient room to manoeuvre, even well drained ground, away from overhead power lines, free of loose/trailing twine or plastic).</p>	
<p>All bale handling equipment is suitable for the task and maintained in good order.</p>	
<p>A SAFE STOP procedure is used at all times when dismounting from tractors and loaders when moving bales or removing wrapping (handbrake on, stop engine, remove key).</p>	
<p>A safe stacking method is used.</p>	
<p>A safe system of work is used to ensure that bales will not fall or topple over when removing bales from storage locations.</p>	
<p>Safe methods are used for loading bales on and off trailers or trucks avoiding work at height (with no overloading, using secure straps).</p>	
<p>Loads are moved or transported at safe speeds on the farm and on public roads.</p>	
<p>Brakes and lights on tractors, trailers, loaders, trucks are adequate and in good working order.</p>	

Further Information and Guidance:

Visit our website at www.hsa.ie, telephone our contact centre on **1890 289 389** or email wcu@hsa.ie

Use BeSMART, our free online risk assessment tool at www.besmart.ie

Check out our range of free online courses at www.hslearning.ie

