

Staying safe when working with machinery

Purpose:

To promote safe working practices when working with machinery.

Why:

Modern agriculture is increasingly dependent on the use of machinery to carry out tasks in the most efficient way possible. Many agricultural machines have potentially dangerous moving parts, which can cause serious or fatal injuries.

TIAH Capability Framework area:

This aligns with the knowledge and skills in the Health and Safety area.

<https://tiah.org/tiah-capability-framework>

Talk leader instructions:

- Prepare to do the talk in a suitable/quiet location with no distractions
- Consider using some of the resources as part of the talk, e.g. showing a video
- Engage with participants, ask questions and give everyday examples
- Conclude with a brief review
- Get everyone to sign the form. Make sure to write the name of the farm and the date. Keep a copy in your Health and Safety records
- Ensure all participants have access to a copy of this document to refer to once the session has finished. This could be electronic and emailed or printed

Notes:

Background

On average, agriculture has four deaths each year caused by contact with machinery. Fatalities involving machinery are regularly among the sector's top five most common causes of death and serious and life-changing injuries.

Unguarded parts, machinery kept in poor condition, inexperienced operators, human error, rushing, poor vision, and lack of concentration are some of the causes of machinery accidents.

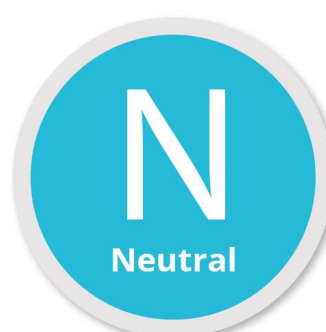
Accidents with machinery occur when operating but also when maintaining machinery or trying to clear blockages

SAFE STOP

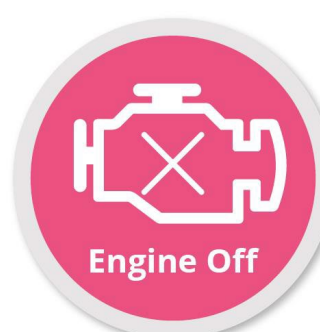
Agricultural machines are very powerful, and workers can become entangled in moving parts such as PTO shafts, chains or conveyor belts. Following a safe stop procedure before anyone approaches the machine would prevent many of these types of injuries.



1. Handbrake on
Ensure the handbrake is fully applied



2. Controls in neutral
All controls and equipment left safe



3. Engine off
Stop the engine



3. Remove key
Take the key out

Main learning points 7 minutes

Main learning points:

It's important to identify the hazards that are associated with machinery and be able to assess the risks.

Q: What do you think the main hazards could be?

Responses might include:

- **Entanglement** – Body parts, hair, jewellery and clothing can become tangled in moving machinery
- **Struck by high-velocity debris or parts** – These can be ejected at high speed from machines and hit people who are using or near the machine
- **Struck or crushed by machine or outputs** – Moving parts can strike and crush people near the machine. This can happen both when the machine is operating and when it's not in use
- **Cut by sharp objects** – Sharp corners, blades and cutting surfaces can cut or sever people if they come into contact with them
- **Improper use leading to injury** – Using the machine in ways it was not designed for can significantly increase the chances of accidents. It's also against the PUWER legislation and can lead to prosecution
- **High-pressure fluid injection** – Leaks of liquids under high pressure from machinery can lead to them being injected through the skin damaging the tissue underneath
- **High noise levels** – Vibrations and noise can cause hearing damage

Notes:

Suggestions/ ideas:

Optional: In this video from the Farmers Weekly 'Dying to Feed You' campaign, James Chapman explains how he lost his left arm after his jacket was caught in a PTO shaft. <https://www.youtube.com/watch?v=OG1SbD7hivk>

Assessing the risk

Machinery should be part of your normal risk assessment process as follows:

Step 1: Identifying hazards – To identify hazards, look at how the activity is carried out, the machinery to be used, the work procedure, and the environment.

Step 2: Think who could be harmed – Is it just those using the machinery, or are other staff, visitors, or even the public at risk if things go wrong?

Step 3: Evaluate the risk – What's the likelihood of the risk occurring? What would be the impact of the risk were it to happen?

Step 4: Control the risks and record your findings – Decide on appropriate precautions to lower the level of risk and keep yourself and others safe

Step 5: Review the controls – Things can change, so it's a good idea to review the controls on an ongoing basis.

Using machinery safely

Before you start a machine, you should follow the four safety checks below:

1. **Check yourself** – Are you in good health and feeling well? Are you free from the effects of drugs or alcohol? Are you taking medication that might make you drowsy? Are you wearing the correct PPE, including any noise protection (if required)?
2. **Check your operational capabilities** – Have you been trained to use this machine? Have you read and understood the operator manual? Do you know enough to work safely and feel confident using the controls?
3. **Check the vehicle/machinery** – Have you carried out pre-start checks? Is the machine suitable for the task? Is it suitable for the terrain and are there limits on where and how it can operate? Is there adequate propping (if you're doing maintenance)?
4. **Plan** – Is there a safe system of work understood by everyone working on or around the machine? Is there a risk assessment – do you understand it? Are any barriers or warning signs needed? Will the weather affect the operation?



Discussion points 11 minutes

Choose two of the following discussion points to discuss with your team and complete the remaining one at another time.

Q: What PPE do you need when working with the different types of machinery on your farm?

Responses might include:

- High visibility vests or jackets
- Boots or wellingtons with steel toe caps and sole plates
- Ear defenders
- Safety gloves
- Safety glasses or dark glasses if glare is extreme
- Overalls
- Respirators complying with EN 149
- Hats – particularly in hot, sunny weather

Avoid loose clothing, unzipped jackets or vests, and jewellery and keep long hair tied back to prevent it from coming entangled in moving machinery parts.

Notes:

Suggestions/ ideas:

Safety features on machinery are crucial in reducing the risk to users and others who might be near it.

Q: Why is it important to check that safety features are present and in good working order? How many reasons can you think of?

Personal safety – Ensuring safety features like guards, shields, emergency stop buttons, and roll-over protection structures are functioning properly can help prevent accidents and injuries to farmers and workers.

Worker protection – Regularly checking safety features helps protect the people working on their farms from potential hazards, including seasonal workers and contractors.

Legal compliance – Regularly maintaining and ensuring the functionality of safety features on a machinery is essential for meeting legal obligations.

Liability reduction – In the unfortunate event of an accident, liability in legal proceedings and insurance claims can be reduced if the farmer can demonstrate that reasonable steps were taken to prevent accidents

Machine efficiency – Properly functioning safety features protect against accidents and contribute to the efficient operation of machinery.

Productivity – If safety features are compromised, machinery might need to be shut down or operated at reduced speeds, leading to decreased productivity.

Machine lifespan – Well-maintained machinery, including regular checks, can help prevent costly breakdowns and improve its lifespan.

Environmental impact – Some safety features are designed to prevent spills, leaks, or emissions that could harm the environment.

Public perception – Properly functioning safety features can demonstrate a commitment to safety and contribute to a positive perception of the industry.



Important: It's very tempting to leave safety features off for testing, but they should always be applied when the machine is being operated, even if you might need to take them off again to complete a repair.

Scenario: Angie is fully trained on all machinery on the farm where she works. A new tractor has been delivered to the farm today, and she's looking forward to making a start on drilling the winter wheat in the new tractor, but she's unfamiliar with this particular class.

Q: What can Angie do to help herself?

Responses might include:

- Ask for additional training until she's confident she can operate the machine safely and competently
- Make sure she understands the purpose and location of all the controls and familiarise herself with the operator manual
- Make sure she understands the scope and limitations of the tractors' operations
- Study and understand the warning lights and stickers in the cab and around the tractor
- Make sure she understands how to shut the tractor down quickly after she's used it, working or checking it, and in case of emergency

You can learn more about working safely with machinery, plus many more health and safety subjects, by completing TIAH's Essential Skills Learning modules. Find out more here: <https://tiah.org/essential-skills>

Summary/Wrap-up

 1 minute

Machinery used in agriculture and horticulture is very powerful. Everyone working on the farm should be aware of the risks and have a good understanding of how to reduce them when operating, maintaining or being close to machinery to avoid injury or fatality. It’s important that workers are fully trained, competent and fit for the task when operating machinery to keep themselves and others safe.

Resources:

HSE: Provision and Use of Work Equipment Regulations 1998 (PUWER): <https://www.hse.gov.uk/work-equipment-machinery/puwer.htm>
HSE: Lifting Operations and Lifting Equipment Regulations 1998 (LOLER): <https://www.hse.gov.uk/work-equipment-machinery/loler.htm>
HSE: Control of Noise at Work Regulations 2005: <https://www.hse.gov.uk/noise/regulations.htm>
HSE: Control of Vibration at Work Regulations 2005: <https://www.hse.gov.uk/vibration/hav/regulations.htm>
HSE: Pressure Systems Safety Regulations 2000 (PSSR): <https://www.hse.gov.uk/pressure-systems/pssr.htm>
HSE: Telescopic materials handlers (telehandlers): <https://www.hse.gov.uk/agriculture/topics/machinery/farm-vehicles-4.htm>
HSE: Safe use of big round balers: <https://www.hse.gov.uk/pubns/ais4.pdf>
HSE: Safe use of combine harvesters: <https://www.hse.gov.uk/pubns/ais6.pdf>
HSE: Safe use of potato harvesters: <https://www.hse.gov.uk/pubns/ais13.pdf>
HSE: Safe use of forage harvesters: <https://www.hse.gov.uk/pubns/ais24.pdf>
HSE: Safe use of rotary flail hedge cutters: <https://www.hse.gov.uk/pubns/ais21.pdf>
HSE: Safe use of agricultural mowers: <https://www.hse.gov.uk/pubns/ais25.pdf>
HSE: About health and safety in agriculture: <https://www.hse.gov.uk/agriculture/hsagriculture.htm>
Yellow Wellies: Staying safe on the farm – A guide for young farmers:
https://www.yellowwellies.org/wp-content/uploads/2020/10/FarmSafetyMessage_Students_1020.pdf
ISO: Safety of machinery: <https://www.iso.org/ics/13.110/x/>
Legislation.gov.uk: Health and Safety at Work Act 1974: <https://www.legislation.gov.uk/ukpga/1974/37/contents>

Toolbox Talk participants

Toolbox Talk: **Staying safe when working with machinery**

Name of farmDate

Talk leader name.....

Name	Signature	Date