



Safe maintenance in agriculture

Agriculture is one of the most hazardous sectors in terms of work-related accidents. Agricultural workers suffer 1.7 times the average rate of non-fatal occupational accidents and three times the rate of fatal accidents.

In the EU-27, family work and a large degree of self-employment predominate in the agricultural industry, as most work on farms is done by the farm owner and his or her family. Nine out of ten people working on farms (89 %) are family labour force ⁽¹⁾. In 2007 about 78 % of farmers worked alone with assistance from family members and occasional help from employees brought in at peak times ⁽²⁾.

Self-employment, and the fact that farming is often a family business, are a challenge for occupational safety and health.

Maintenance tasks in agriculture

Maintenance activities in agriculture are very diverse. They include:

- maintenance and repair of machines, equipment and vehicles;
- maintenance of farmyards and buildings;
- maintenance of silos, bins, slurry tanks and grain tanks;
- maintenance of electrical installations;
- maintenance of drainage and irrigation systems;
- maintenance of paved and unpaved roads.

Hazards related to maintenance in agriculture

Because of the wide variety of maintenance tasks on farms, there are many different hazards involved, including:

- mechanical hazards related to the maintenance of machinery, such as crushing, entanglement and high-pressure fluid injection;
- electrical hazards when working with defective equipment or during maintenance of electrical installations and equipment, or repair of broken electric fences;
- thermal hazards related to the use of welding or heating equipment during maintenance, or maintenance of equipment with hot surfaces or operating fluids;
- chemical hazards related to the use of dangerous substances during maintenance, or maintenance of equipment containing dangerous substances;
- fire or explosion hazard during maintenance of facilities or equipment containing dangerous and explosive substances, such as tanks, bins and silos, or fuel tanks;
- biological hazards during maintenance of installations contaminated by biological agents, slurry tanks, ditches and sewage infrastructure;
- ergonomic hazards, such as awkward postures, poorly designed tools;
- working in confined spaces.



Courtesy of FIOH

Most common contributory factors to maintenance-related accidents in agriculture

The most common factors are:

- lone working;
- lack of protective equipment;
- financial constraints, time pressure and fatigue;
- lack of awareness/training/information;
- subcontracting.

Preventive measures

- Try to eliminate risks.
- If risks cannot be completely eliminated, try to minimise them by following safe working procedures.
- Use appropriate equipment, including personal protective equipment.
- Never do a job you are not competent to do.

Maintenance of machinery and vehicles

Follow safe working procedures while maintaining and servicing machines.

- Stop the machine before any intervention.
- Make sure the machine has come to rest — remember run-down time.
- Secure parts which could move or rotate — e.g. by using chocks, props.
- Follow the manufacturer's instructions.
- Replace the guards before restarting the machine.

Working in confined spaces

Workers on farms may need to enter confined spaces such as moist grain silos, slurry pits or storage bins to carry out maintenance, inspection, cleaning and repair. Dangers can arise because of a lack of oxygen, toxic or flammable gases, liquids and solids that can suddenly fill the space, causing asphyxiation, drowning, fire or explosion.

- Avoid entering confined spaces.
- If entry is unavoidable, follow a safe system of work.
- Put in place adequate emergency arrangements.
- Test the air before entering.

⁽¹⁾ Eurostat, *Agricultural statistics: Main results 2007–08*, Eurostat pocketbook, 2009 edition (http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-ED-09-001/EN/KS-ED-09-001-EN.PDF).

⁽²⁾ Eurostat, *Farm structure, statistics explained* (March 2010) (http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Farm_structure).

- Use adequate equipment, such as personal protective equipment (e.g. respirators, harnesses and safety lines), lighting (approved to explosive atmospheres) and communications gear.



Source: M. Águila, INSHT

Working at height

Maintenance of buildings, structures and machinery on farms may involve working at height. Falls often happen from roofs or through fragile roofs, from vehicles, ladders and unsuitable access equipment.

- Avoid working at height.
- If working at height cannot be avoided, use suitable access equipment.
- Use fall arrest safety equipment, for example safety harnesses, if necessary.
- Make sure that tools and materials can be safely raised and lowered.
- Always assume that roofs are fragile unless you can confirm otherwise.
- Provide buildings that have fragile roofs with warning signs, particularly at access points.
- Wear slip-resistant safety footwear when working on vehicles.
- Do not use ladders if there is a safer way of doing the job.
- If you use ladders, make sure the ladder cannot slip, and that it has a level and firm footing.

Initiatives and campaigns to prevent harm to workers in agriculture

- The Farm Safety and Health Awareness Days (SHAD) in the UK are events designed to inform and train agricultural workers about the risks associated with their work.
- PreventAgri is a project developed in Belgium that aims to prevent accidents, occupational diseases and psychosocial risks in agriculture; it comprises awareness raising, training, research and intervention.
- The Social Insurance Institution for Farmers in Austria motivates farmers to promote health and safety on their farms by presenting them with safety certificates. The safety certificate is an award for farmers that pay particular attention to safety and health. The award is subject to strict criteria:
 - a general standard of health and safety practice;
 - safety awareness of the agricultural workers;
 - safe work organisation (providing personal protective equipment, first aid kit, tidy working area);
 - safe equipment;
 - safe vehicles;

- safe buildings;
- safe electrical installations.

Good practice examples

- *Mobile repair workshop for agricultural machines and vehicles*

Mobile Werkstatt Allgäu GmbH, Germany

Modern agricultural machines and vehicles need increasingly professional servicing, which requires qualification and competence in maintenance and repair. The mobile repair shop for agricultural machines and vehicles was developed by farmers. It has all the tools, testing and measuring equipment necessary for repair and a team of maintenance technicians who carry out repair and maintenance of machines and vehicles professionally on-site.

- *Maintaining and repairing horticultural glasshouses safely and efficiently*

Glass Handling Technic Vof, the Netherlands (Good Practice Award winner)

In recent years the horticultural glasshouse sector has undergone tremendous development. The glasshouses are higher, the drainage channels on the roofs are extremely narrow, and the dimensions of the roof glass have increased considerably. These developments have had a major influence on maintenance and repair work, which is associated with the risk of cuts, falls from height and physical strain. At the initiative of the glasshouse industry, trade organisations of gardeners, growers, fitters and contractors, and insurance companies and banks, and involving a number of companies with extensive experience in maintaining glasshouses, a new and safe method of repairing glass roofs was developed. A system for carrying out repairs on the outside of glass roofs was designed, the Repair Shuttle, consisting of the maintenance vehicle, with a system for moving glass into position, and a mobile platform to move the repair vehicle from one location to another. Maintenance workers were closely involved in the development of the Repair Shuttle. Injuries caused by falling glass are impossible when using the Repair Shuttle, while the risk of falling has been almost completely eliminated. There has also been a marked reduction in the physical effort required of the people carrying out repairs.

More information

To find out more about safe maintenance in agriculture, read the web publication 'Maintenance in agriculture — a safety and health guide', available at <http://osha.europa.eu/en/publications/reports>

This factsheet is available in 24 languages at: <http://osha.europa.eu/en/publications/factsheets>

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