



AgriSafetyNet

## Agricultural Safety Through Lifelong Learning

2019-1-SK01-KA202-060645

# Module 2 GENERAL HAZARDS AND PREVENTION



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## 1. General types of risks and risk prevention

It is important that the workplace is adapted to the right safety conditions to avoid accidents and then work will be more efficient.

### *Hazards in the farmyard:*

- fall
- fall from heights
- hit by a moving object
- impact from a vehicle
- because of a falling object

### *Where hazards are not controlled, following can happen:*

- be injured in an accident
- contract a disease
- be disabled
- die





## 1. The workplace and work surfaces

### ***Workers are exposed to:***

- weather extremes
- repetitive manual work
- vehicle and machinery operation
- contact with biological agents
- contact with hazardous substances
- falls, crushes and much more

### ***Vulnerable workers***

- **young workers** usually lack experience and tend to be impulsive
- **elderly workers** are more vulnerable to weather conditions, fatigue and stress
- **family members** may be willing or required to help but you should bear in mind their competence for each task as they may as yet be untrained and therefore more at risk
- **pregnant workers** must be considered, assessing which work activities they can safely carry out without risk of miscarriage or any other complication for the mother or foetus
- **disabled workers** must be assigned work within their capabilities
- **child Labour** must not be utilised. Where children from the farm family accompany their parents carrying out tasks, the hazards and risks involved must be considered, explained to them where appropriate and controlled so that no child is exposed to unacceptable risks
- **immigrant workers** often need additional consideration as they are in the cultural different environment with different jurisdictions and each day life habits.



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## 1. The workplace and work surfaces

### ***Safety recommendations for the workplace:***

- machinery should be properly separated, allowing workers safe access and movement around it
- tools and instruments should have a permanent residence
- all materials (cables, hoses, etc.) finished products, e.g. (hay bales, straw, etc.) and waste should be stored in places that will not interfere with each other
- corridors, passageways and stairs shall be of adequate dimensions and free of obstructions and shall be adequately illuminated
- buildings and installations (electricity, water, gas, compressed air, etc.) should be in good condition and well maintained
- the floor should not be slippery and workers should use appropriate footwear
- all openings, walls or entrances through which materials or persons can enter/exit should be adequately protected



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## 1. The workplace and work surfaces

### ***Prevention:***

- level and if possible, harden the surface of squares and passageways, remove protruding objects and bumps that may be invisible, especially when covered by snow
- light up the yard and sidewalks
- In winter, eliminate slippery surfaces and passageways
  - to mark and fence dangerous places
  - affix information and warning signs in appropriate places. Cleanliness and order are basic safety rules



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## 2. Duties on the farmyard

**In general, acts on maintaining cleanliness and order in communes imposes obligations on property owners:**

- equipping and maintaining the municipal waste collection facilities in an appropriate technical and sanitary condition
- connection to the existing sewerage network where possible, or fitting with a non-effluent liquid sewage tank or a domestic sewage treatment plant
- disposal of municipal waste and liquid waste collected on the property in accordance with the provisions of the Act and separate regulations



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## 2. Duties on the farmyard

### Duties of property owners:

- to keep documentation in the form of a contract and proofs of payment for the services of collecting municipal waste, emptying of non-effluent tanks and transporting liquid waste
- to clean mud, snow, ice and other debris from footpaths located directly along the property
- to perform other obligations laid down in the municipal regulations
- to create a places where hands, face and boots can be washed before leaving the stables



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## 3. Cleaning of farm buildings

### Cleaning of farm buildings

- to keep order and tidiness in a warehouses, workshops, garages, sorting rooms, cold stores, storage rooms, greenhouses, etc.
- the substrate in the storage rooms shall be swept or, if its type permits, washed
- in the utility rooms, cobwebs, dust and windows should also be cleaned from time to time



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## 4. Tools

Most injuries are caused by manual and electric tools such as hammers, cutters, knives, axes, saws, pliers, screwdrivers and wrenches and screwdrivers etc.

- **Main causes of injuries:**
  - misuse of the tool.
  - faulty tools
  - low quality tools
  - incorrect transport or storage
- **Hazard**
  - sharp objects
  - damage caused by falling objects
  - over-effort



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## 4. Tools

### 4.1 Manual Tools

- **Prevention**

- purchasing high quality tools
- tools used and intended exclusively for work on the holding
- appropriate training in the use of the various tools
- using eye protection when there is a risk of injury from flying objects
- using gloves when handling sharp objects
- periodically check the handles maintenance (repair, sharpening, cleaning of equipment, etc.)
- storage in appropriate and marked toolboxes as well as storage at a fixed location

#### **Pneumatically driven hand tools**

- pneumatically driven hand tools, used in repair shops, are used for loosening screws, inflating tyres etc.
- when working with pneumatically driven tools it is recommended to wear thick gloves, lined with a protective layer from the hand side
- these gloves can also absorb vibrations transmitted to the operator's hands. Use a hearing protector and limit the working time



## 4. Tools

### 4.2 Electric tools and installations

The electrical installation is vital to agriculture farm.

It is necessary to have a competent person fit all electrical installations with residual circuit breakers (RCDs) to reduce the risk of electric short circuit. Only qualified electricians should be employed to design, install, maintain and repair electrical installations. Otherwise, the worker or the user of the facility runs a serious risk of electrocution and death.

A **third-party** inspections are good practice and, in some countries, are obligatory.

Keep your electrical panel, sockets and switches clean, free from dust and dry, and protected from weather conditions and misuse.

On the control panel, label switches so that you, or any other user, can identify the correct switch to isolate an area or equipment if there is a need to carry out maintenance or repair work. Display the telephone number of your electrician. Control access to the panel or any other electrical installations.

#### Causes of the most common accidents when working with electric tools:

- inappropriate use not appropriate to the work being done,
- damaged tools,
- incorrect transport or storage,
- no protection,
- removed protectors



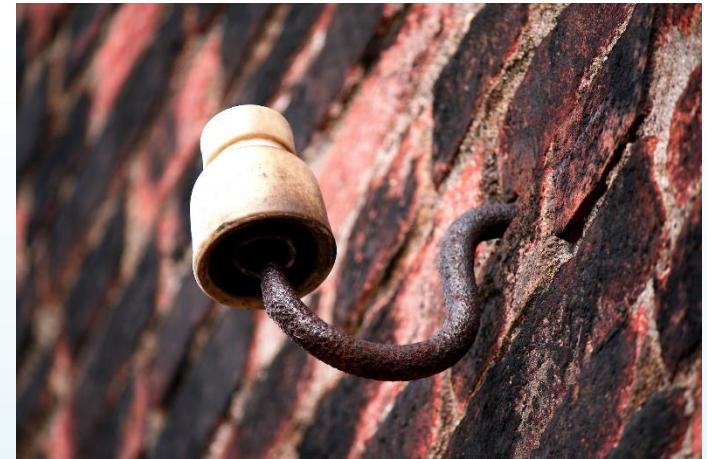


## 4. Tools

### 4.2 Electric tools and installations

#### Prevention

- preventing risks from the energy source
- double insulated electric tools or under voltage (24 V)
- follow the manufacturer's instructions
- if you buy power tools, remember that tools with double electrical insulation are safer:
  - do not use tools with damaged cover
  - a damaged power cord or plug should be replaced
  - check the condition of power tools for external damage and makeshift repairs
  - do not adjust or adjust tools that are turned on
- all power tools installed in the workroom/manufactory should be effectively earthing unless they are double-insulated
- don't use temporary lighting - the lamps you use to illuminate the work area should have a shield around the shade and a handle made of electro-insulating metal.



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Before starting work, check the tools and put on the missing protectors



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## 5. Machinery

Machinery is used in almost every type of agricultural operation. The machinery may be in the form of a vehicle with a cab where the operator sits and operates the controls while driving (e.g. tractor, harvester, forklift) or it may be stationary machinery operated by the power take-off (PTO) of a tractor, or powered by electricity, water or by hand.

To avoid accidents caused by machines, the following recommendations must be observed:

- having safe machinery (EC label)
- installation, use and maintenance of all machines respectively, according to the manufacturers' recommendations
- regular inspection of machines





## 5. Machinery

### 5.1 Risks associated with machinery

#### **Mechanical hazards:**

- caused by physical damage to machine components
- movable parts (blades, wheels, etc.)
- transmission parts (axles, pulleys, etc.)
- splinters from broken parts
- splinters from the material during processing

#### **Electrical hazards, electric shock or burns caused by:**

- touching (direct contact) or accidentally charged components (indirect contact)
- insufficient insulation

#### **Thermal hazards:**

- burns caused by contact with hot objects or materials

#### **Noise-related hazards:**

- noisy machines can cause hearing loss, fatigue, interference with oral communication or acoustic signals
- intense vibration can cause muscle disorders in the hands, lumbago, sciatica

#### **Technical defects:**

- machinery which is not adapted to the characteristics and capabilities of the person using it may cause physical disturbances due to uncomfortable posture, repetitive movements or pushing



## 5. Machinery

### **Prevention:**

- use the machines only as intended
- do not allow the load, mudguards, hooks, sides,... get on and off while driving
- provide the regular service of the tractor or machine
- do not allow anyone to stand between the tractor and the implement and do not step on the drawbars, hitchings, frames or other parts of the tractor or agricultural implement during operation
- if you leave the machine on a slope, you have to make sure it doesn't go down alone (put the chocks under the wheels)

Use personal protective equipment when working with the chain saw. These are:

- a safety helmet
- safety glasses or safety net
- protective clothing made of cut-resistant material
- anti-vibration gloves
- Hearing protectors
- protective footwear





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## 6. Electricity

When operating machinery and technical equipment with electric motors in damp rooms, use airtight cables, plugs and sockets to allow for zero or ground connections.

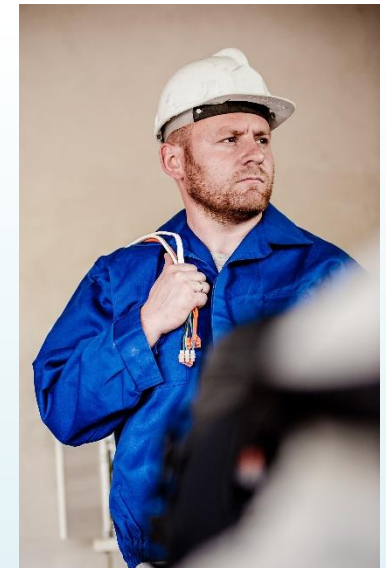
The electric motors, switches, fuse-sockets, light points, switchboards and other electrical connections shall be protected against dust, moisture, diesel, gas and other factors that can cause electric shock.

### Prevention:

- electrical work must not be carried out without appropriate qualifications
- beware of electric cables and wires - keep a safe distance
- use certified personal protective equipment
- only use low-voltage portable electrical devices in damp rooms or on metal surfaces

**Three golden rules** you must remember when working with electrical equipment:

1. Turn off all power sources
2. Turn off and lock all switching devices (switches, switches, etc.)
3. Mark the workplace



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## 7. Fire

A fire is called a spontaneous, uncontrolled spread of fire in a place not intended for this purpose, causing material damage and danger to life.

The owners, buildings and storage yards and shelters, with the exception of single-family residential buildings, mark escape routes with signs complying with national standards.

Marking is required in rooms where at least 2 emergency exits are required by technical and construction regulations.



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2019-1-SK01-KA202-060645



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## 7. Fire

### 7.1 Fire factors

**Fuels:** a substance that releases large amounts of heat during intensive oxidation (combustion). The energy obtained from the combustion of fuel is used:

- by a machine (heat engine) or an assembly of machines and equipment (heat plant) to produce mechanical energy
- through a boiler for heating or process purposes. The most important feature of fuels is their combustion heat and calorific value

**Combustion:** the chemical reaction between combustible material or fuel and an oxidant, with the release of heat and light.



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## 7. Fire

### 7.1 Fire factors

**Heat:** the amount of heat that is generated by the total and complete combustion of a unit of mass or a unit of volume of the substance under analysis in a constant volume, where the products of combustion are cooled to the initial temperature and the water vapour contained in the flue gas condenses completely.

The most frequent sources are:

- cigarettes
- sparks
- poorly extinguished fires
- electrical faults
- welds



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## 7. Fire

### 7.2 Firefighting

- store flammable products and protect fuels as far away from work areas as possible
- use sealed containers in which you will store flammable materials
- before carrying out any maintenance or repair work, cleaning of drains and installations which contain flammable products, an inspection must be carried out
- heat sources (ovens, furnaces, tractors, etc.) away from working areas
- avoid heat sources in electrical installations; all electrical equipment must be disconnected at the end of the working day
- do not mix chemicals whose reaction is unknown, as this may generate enough heat to lead to fire
- have a good evacuation plan



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## 7. Fire

### 7.3 Fire protection

- a set of actions to control the fire if it explodes
- good protection comes from good fire detection, alarm
- when a fire breaks out, speed is essential; therefore is important to install automatic fire detection systems, at least in places where there is a higher risk of fire
- the handy extinguishing equipment includes: fire extinguishers, internal hydrants, fire blankets and silencers,
- boots, axes, axes, axes, pickaxes, crowbars, shovels and shovels play a helpful role in extinguishing the fire
- deployment of fire-fighting equipment and extinguishing agents crop protection
- heaps, floors and beams shall be placed at least 30 m from buildings, roads and tracks
- heaps, floors and beards are set up at least 100 metres from forests and wooded areas
- around them should be a surface free of combustible materials (width:2m)

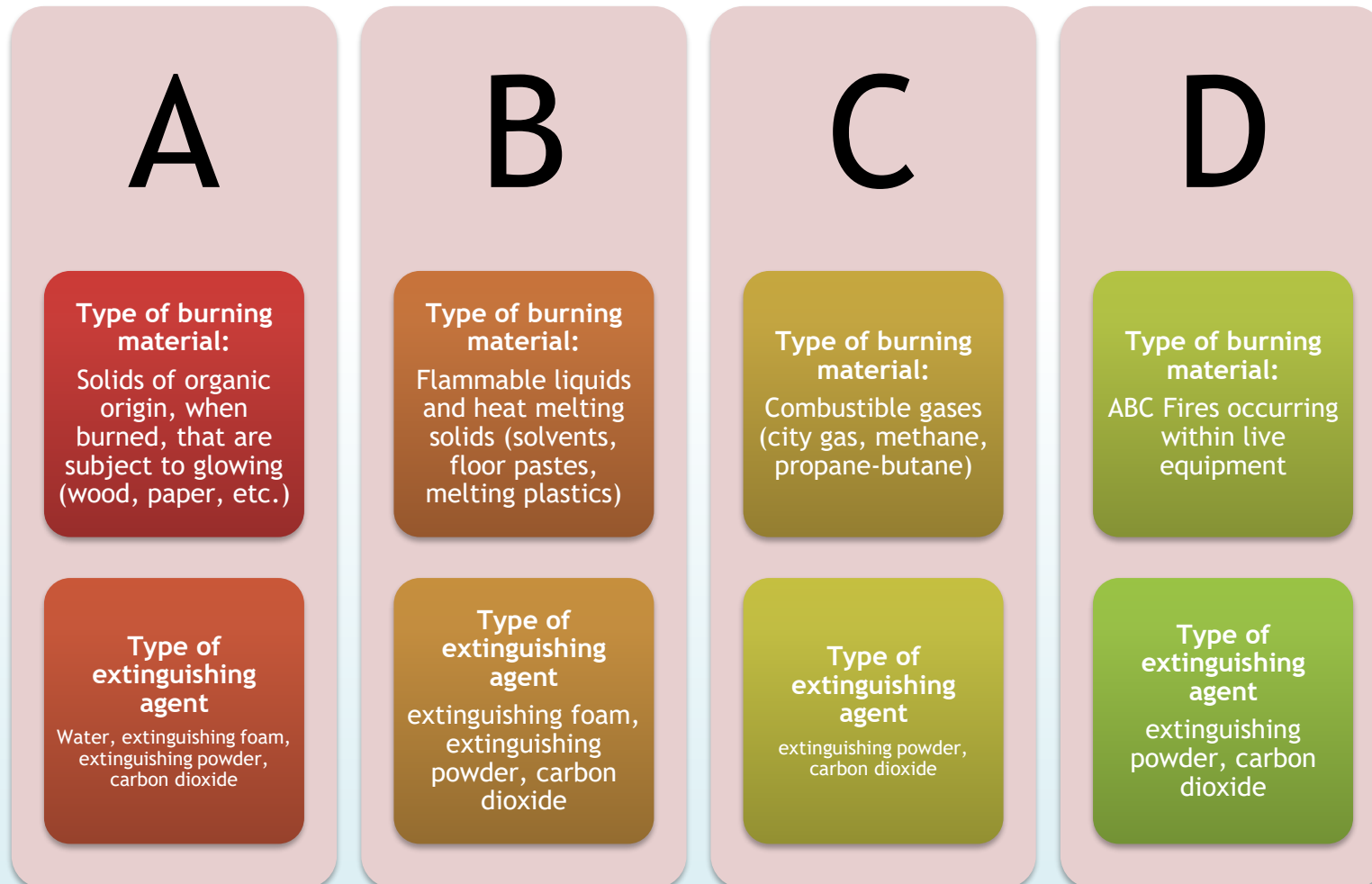


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## 7. Fire

### 7.4 Group of fires





## 7. Fire

### 7.3 Fire safety instructions

The fire safety instruction is a special document, developed individually for the needs of a particular object, in which the owner, manager or user of the object is obliged to specify in detail the rules of fire protection applicable in it.

- The livestock building should meet the evacuation requirements which are as follows:
  - the distance from the furthest animal stall to the evacuation exit should not exceed 50 m when keeping animals in bedding, and 75 m when keeping cattle, pigs and sheep in bedding, if the number of cattle and pigs does not exceed 15 animals and 200 sheep,
  - at least one evacuation exit should be used, in a building with more animals than the above mentioned ever at least two exits, and at least one evacuation exit per section from rooms divided into sections.



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## 8. Warehouse and storage of agriculture products

- grain sacks and grain preparations in floor stores should be formed from sacks of equal weight, shape, type of packaging and size, laid inwards in ties, and wooden spacers should be used after each five layers from the floor level
- use mechanical equipment for straw, hay and hay bales from round balers, but not higher than the safe lifting height of the implement attached to the tractor or the forklift
- warehouses and storage of agricultural produce:
  - an employee's entry into a tower or deep-seed type silo should be preceded by ventilation of its interior and control of air purity
  - while a worker is inside the storage chamber for cereals and their preparations or inside the technical equipment, all hatches should be open
  - rotating parts of machinery and technical equipment that could pose a hazard should be shielded



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## 8. Warehouse and storage of agriculture products

### Prevention:

- mismanagement, apart from a considerable loss of time, may cause damage, displacement, fire, etc.
- good storage management improves working conditions and performance.
- storage packaging (containers, bags of feed, fertilizer, grain, etc.) should be arranged so as not to interfere with access and eliminate damage, etc.

### Recommendation:

- do not climb on the shelves, use a ladder to reach high objects.
- do not lean heavy stacks against supporting walls,
- do not throw objects from above or take them out from below,
- do not overload the shelf or floor.
- protect the material from moisture and heat,
- avoid damaging the containers,
- have only the raw materials needed for everyday work at hand.
- keep everything in order



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## 9. Material transport

- agricultural trailers equipped with inertia type brakes may be aggregated with a tractor, provided that the total weight of the trailer with the transported load does not exceed 5000 kg
- it is not permissible to combine such trailers into double sets. When towing two trailers, the braking systems of the whole combination shall be combined
- road transport on public roads should comply with road traffic regulations
- in any case of transporting highly loaded materials (straw, hay), the necessary trailer equipment should be a ladder with a length appropriate to the height of the expected load



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## 9. Material transport

It's unacceptable:

- tipping the load platforms of tipper trailers on one pin or with a total angle of inclination greater than 50 degrees
- tipping the load towards the gradient
- uneven load distribution or exceeding their load capacity

According to the Lisbon Strategy adopted by the EU, the priority areas of prevention are manual handling of loads and repetitive activities.



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## 9. Material transport

### Prevention:

- use a machine and auxiliaries that are in good condition and suitable for the task
- performing periodic inspections of all elements that may be dangerous (cables, cords, ropes, etc.)
- check all relevant components before starting the machine
- lifting and lowering loads slowly, avoid sudden movements, stops
- the burdens should not be left without control and care
- don't carry weights above your head
- directing the device to work in which both loading and unloading can be controlled
- theoretical and practical training for all machine operators
- store the keys to the machine in a safe place
- marking and separating lanes for people and materials
- lanes should be free of obstacles
- lanes should be well lit
- the width of the area should be appropriate for users



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# PROJECT CONSORTIUM



**Defoin**



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LEBEN**  
Jeder Tag ein Vermögen.



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