

## **8. Machinery and work equipment safety**

### **8.1. Introduction**

8.1.1. Agriculture involves the use of a wide variety of hazardous machinery and processes. Among the most common are tractors, cultivators, harrows, seeding equipment, sprayers, harvesters, mowers, balers, grinders, trucks, wagons, trailers, all-terrain vehicles, augers, manure spreaders, and elevating equipment. In addition, a wide range of tools are used both in agricultural production and when carrying out repairs. The safety features of equipment and tools should be key considerations at the time of purchase as well as the adaptability of usage for both women and men workers.

8.1.2. The principal safety risks include traumatic injuries including, but not limited to, cuts, burns, electrocution, fractures and amputations caused by contact with cutters, gears, belts, shafts and other moving parts, burst hydraulic hoses and contact with live electrical equipment. Such injuries occur not only during the course of production but also during maintenance and repairs, cleaning, clearing blockages, etc. The effects of such injuries can be all the more serious because many farm workers work alone and first aid or medical help may be far away.

8.1.3. The safety standards set by the competent authority with regard to the design, manufacture, installation and use of agricultural machinery and equipment and any necessary market surveillance should be undertaken before such equipment is used.

### **8.2. Tractors and all-terrain vehicles**

#### **8.2.1. Hazard description**

8.2.1.1. Farm tractors are the most important piece of power equipment used in agriculture and are associated with a major propor-

### **Safety and health in agriculture**

tion of injuries and deaths in agricultural production and maintenance. Older tractors warrant special attention as they are often not fitted with up-to-date safety equipment, such as rollover protective structures (ROPS) and seat belts.

8.2.1.2. Most tractors have rubber tyres, hydraulic systems and power-take-off (PTO) and utilize a combination of engine speeds and gear ratios. The most serious hazards associated with tractor operations include overturns, run-overs and PTO entanglement.

8.2.1.3. All-terrain vehicles (ATVs) are used as transport vehicles in many countries, in part because they provide the first step away from draught animals in some enterprises, and in part because they can perform many tractor-like operations within close quarters, inside agricultural structures, other enclosures, and in livestock operations.

8.2.1.4. Hazards associated with tractors and ATVs can be grouped into instability resulting in rollovers, run-overs, PTO stub and other miscellaneous risks including, but not limited to, slips and falls when climbing on or off tractors and ATVs, crushing injuries from unintended rolling, and driving under low-hanging branches.

8.2.1.5. Tractors that do not have up-to-date health and safety features such as rollover protection structures (ROPS), seat belts and temperature-controlled cabs require specific risk assessment, and such safety features should be retrofitted where possible.

8.2.1.6. Noise associated with farm tractors and ATVs use can result in hearing impairment (see Chapter 12).

8.2.1.7. Vibration associated with tractors and ATVs use may result in musculoskeletal injuries (see Chapter 13).

8.2.1.8. Operator seats on tractors and ATVs and other control levers and consoles may, due to design and placement issues, result in ergonomic injuries (see Chapter 9).

## **Machinery and work equipment safety**

### **8.2.2. Risk assessment**

8.2.2.1. The employer should establish an inventory of tractors and ATVs used in the enterprise and determine whether they are fitted with up-to-date safety features, including ROPS, PTO shields, seat belts, etc. In assessing risks from such vehicles, the employer should take account of the protection afforded to the driver from existing safety features, the uses to which the vehicles are put, whether they work on slopes, and the skill levels of the drivers themselves. Risks from hydraulic hoses and other power sources should also be considered, as should risks from poor maintenance, such as from worn brakes.

8.2.2.2. The employer should also bear in mind any risks to co-workers, such as from being run over or from any malpractices like riding on vehicles without proper seating. Risks of injury to pedestrians close to farm buildings, particularly children who live there, should also be taken into account.

8.2.2.3. On the basis of the risk assessment, the employer should develop a plan to implement improvements. An example of a simple risk assessment for tractor use is given in Chapter 4.

### **8.2.3. Elimination of the hazard**

8.2.3.1. The elimination of hazards relative to the maintenance and operation of tractors in agricultural environments presents a major challenge. Total elimination may prove difficult given the number and variety of tractors and ATVs, the wide range of tasks and the level of risk in the outdoor environment. Nonetheless, the employer should have as a goal the elimination of tractor and ATV hazards by the use of all safety modalities available, including engineering controls, safe work systems and procedures and the training, induction and supervision of workers. The employer should ensure that adequate competency-based training is provided to tractor and ATV operators and, where applicable, that competency-based certification of operators is

### **Safety and health in agriculture**

carried out. The worker is expected to be fully cooperative and compliant with such training and certification.

#### **8.2.4. Engineering controls**

8.2.4.1. The employer should ensure, where appropriate, that tractors and ATVs that workers are asked to operate are equipped with ROPS, seat belts, PTO shields, mudguards to protect the worker from movement of the wheels and a muffler that successfully results in noise abatement.

8.2.4.2. The employer should ensure that the brakes, emergency brakes, lights, signal lights and other safety devices are regularly maintained and kept in safe working condition.

8.2.4.3. The employer should ensure that tractors equipped with cabs have a means of controlling the interior temperature to an acceptable standard (see section 17.2 on thermal exposures).

8.2.4.4. The employer should ensure that tractors equipped with cabs have a means of controlling noise in the cab. If noise exposure cannot be reduced to acceptable limits, the employer should provide PPE to the worker.

8.2.4.5. The employer should ensure that tractors are equipped with a ladder or steps and a handrail to enable the worker to mount and dismount the tractor safely.

8.2.4.6. The employer should ensure that ATVs procured for use within specific agricultural enterprises are selected as suitable for use on the terrain in accordance with the manufacturer's operating instructions.

8.2.4.7. The employer should ensure that the tyre pressure on ATVs is maintained at the proper level in accordance with the manufacturer's specifications.

### **Machinery and work equipment safety**

8.2.4.8. The employer should ensure that all tractors and ATVs are equipped with seating that is designed to reduce musculoskeletal injuries to the worker.

8.2.4.9. The employer should ensure that tractors are fitted with appropriate emergency stop controls.

#### **8.2.5. Safe working systems and procedures**

8.2.5.1. The employer should establish strict maintenance and operating protocols and provide training and supervision to ensure their implementation.

8.2.5.2. The employer should read operator manuals to learn how to safely operate the tractors and ATVs and ensure that tractor and ATV operators are trained and familiar with the operating instructions. Manuals should be available to operators and, on tractors, kept in the cab.

8.2.5.3. The employer should ensure that ATVs are of a suitable size for use by the operator and vice versa.

8.2.5.4. The employer should ensure that workers implement safe working procedures related to operating tractors and ATVs.

8.2.5.5. The employer should ensure that tractor drivers have an understanding of tractor stability, and are aware of the risk of side roll-overs, rear rollovers and run-overs and how to prevent them.

8.2.5.6. Employers and tractor operators should be aware that the tractor's centre of gravity is central to its stability; that adding weights (e.g. lifting fork, front-end loader, side-saddle and rear chemical tanks) alters the centre of gravity; that moving off a flat plane (level surface) alters the centre of gravity; that centrifugal force can contribute to overturn when tractors are turning; that rear-axle torque can cause the front end of a tractor to lift off the ground if the rear axle

### **Safety and health in agriculture**

cannot rotate (e.g. when rear tractor tyres are stuck in mud or blocked from rotating by the operator); that drawbar leverage can occur (e.g. when a two-wheel drive tractor is pulling a load, the tractor's rear tyres push against the ground backward and downward and become a pivot point, causing the load to tip the tractor rearward); and that loads should only be attached to tractors in accordance with design specifications.

8.2.5.7. The employer should ensure that ATV operators possess an understanding of ATV stability, including centre of gravity integral to the specific machine in use; effect of add-on technologies such as wheel weights, post-hole augers, rear-end sprayers, front-end dozer blades and buckets, etc.; turning radii and the effect of operator centrifugal force; use in water and other muddy conditions; and safe vehicle velocity and speeds when engaged in livestock herding and control activity.

8.2.5.8. The employer should ensure that workers who operate tractors or ATVs are fully informed, trained and supervised in the safe operation of the tractor or ATV with regard to the operator, other workers, bystanders and others. In particular, the employer should ensure that tractor and ATV operators and other workers understand how to prevent run-overs.

8.2.5.9. Operators and those on the ground should exercise vigilance in keeping bystanders away from areas where tractors and ATVs are in use. The operator should ensure that others, including workers and bystanders, are at a safe distance when the tractor or ATV is about to be operated. In situations where children might be at risk the operator should make a specific search for children.

8.2.5.10. The operator should wear a seat belt when operating a tractor that is equipped with a rollover protection structure (ROPS) or a cab.

### **Machinery and work equipment safety**

8.2.5.11. The employer should ensure that workers know the “one seat–one rider” rule and enforce it.

8.2.5.12. Tractors and ATVs should not be used to transport workers other than the driver.

8.2.5.13. Tractor operators should not allow additional riders on tractors. On tractors equipped with trainee seats, a trainee should occupy the seat only when actual training activity is under way.

8.2.5.14. Children under the minimum age of work must not be allowed to ride on tractors or ATVs.

8.2.5.15. Workers should be aware that crushing injuries can occur between tractors or ATVs and other objects.

8.2.5.16. The employer should ensure that workers understand how to prevent PTO injuries. Wrap-point hazards can be reduced by the use, repair and replacement of master shields on PTOs. Proper work procedures should be followed to prevent entanglement in PTOs. To reduce risk of entanglement injuries, loose-fitting clothing, long or untied hair, jewellery and other personal objects should not be worn when working with PTOs and other equipment.

8.2.5.17. Workers should be aware of the safe working procedures related to tractor operations and PTO master shields. Workers should never step over a PTO shaft in operation.

8.2.5.18. Workers should report broken or missing master shields to the employer.

### **8.3. Other agricultural machinery, equipment and tools**

#### **8.3.1. Hazard description**

8.3.1.1. Agricultural workers use a wide variety of equipment and tools that are designed to undertake a range of tasks including

### **Safety and health in agriculture**

but not limited to tilling the soil, sowing seeds, applying agricultural chemicals, harvesting and storing crops, cutting and baling hay, grinding feed, hauling manure and many other tasks.

8.3.1.2. Tillage equipment, such as ploughs and cultivators, seeders, chemical sprayers of both the hand-held and machine-mounted variety, swathers, combines, mowers, balers, feed grinders, manure spreaders and numerous other large and small machines including hydraulic devices, have all been implicated in accidents involving serious injury or death. Such machinery includes rotating components, sharp cutting edges, transmission belts and chain drives, feed rolls and gear drives that, unless properly guarded, pose a grave risk of amputation, crushing or entanglement that may result in severe disability or death.

8.3.1.3. Accidents involving hand tools such as hoes, hammers, crowbars, picks and beaters, sickles, scythes, cutlasses and machetes and portable power tools may lead to scratches, lacerations, amputations of digits or limbs or other injuries, some of which may result in severe disability or death.

8.3.1.4. Falls from machines represent an important cause of severe injury.

8.3.1.5. Noise associated with farm machinery use can result in hearing impairment (see Chapter 12).

8.3.1.6. Vibration associated with farm machinery use may result in vibration injuries (see Chapter 13).

8.3.1.7. Vehicle seats and other aspects of agricultural vehicle use may result in musculoskeletal injuries.

### **8.3.2. Risk assessment**

8.3.2.1. Employers should inform themselves of the relevant standards and carry out a risk assessment to determine the measures

### **Machinery and work equipment safety**

required to eliminate the hazard or the control strategies required to minimize workers' exposure. The employer should include an evaluation of the state of the machines in question in terms of maintenance and repair, adequacy of guards and operating procedures. The employer should ensure that potential crush points are identified. The employer should determine whether workers are aware of the hazards they face and consistently apply safe working procedures.

#### **8.3.3. Elimination of the hazard**

8.3.3.1. Total elimination of machine-related hazards and associated risk may prove difficult given the nature of the tasks and machines available to accomplish the tasks.

#### **8.3.4. Engineering controls**

8.3.4.1. Engineering controls can greatly reduce the level of risk and should be used whenever possible. The employer should ensure that to the extent possible, risks are mitigated by means of guarding those parts of machines and equipment that may cause injury. The objective is to make sure that machines are made safe by eliminating sources of harm, such as fitting brakes to mobile equipment like trailers.

8.3.4.2. The employer should ensure that fixed guards are used whenever necessary and properly fastened in place with appropriate fasteners such as screws or nuts and bolts which need tools to remove them.

8.3.4.3. The employer should ensure that in circumstances where workers require regular access to parts of the machine and a fixed guard is not possible, an interlocked guard should be used. This will ensure that the machine cannot start before the guard is closed and will stop if the guard is opened while the machine is operating. If access is required to parts that are normally guarded in operation, the machinery should be shut down. Prior to the repair of agricultural equipment,

### **Safety and health in agriculture**

the power to equipment should be turned off, the movement of all rotating parts stopped and safety locks engaged.

8.3.4.4. The employer should ensure that established systems for inspections exist to ensure that guards are properly maintained and defects are rectified.

8.3.4.5. The employer should ensure that workers understand why the safe use of equipment and proper use of guards and PPE are essential to reducing traumatic injuries.

8.3.4.6. Engineering controls should reduce exposure to noise, vibration and ergonomic hazards.

#### **8.3.5. Safe working systems and procedures**

8.3.5.1. The employer should not permit the use of any unsafe or faulty equipment.

8.3.5.2. The employer should ensure the provision of adequate information, instruction and training for those using equipment, and that their skill levels are periodically evaluated.

8.3.5.3. Unauthorized persons should not be allowed to operate machinery. In particular, children should be kept away from all agricultural equipment.

8.3.5.4. The employer should ensure that workers are trained to operate equipment before they are directed to do so. Adequate equipment for women workers should be provided in order to avoid accidents linked to equipment not ergonomically suited.

8.3.5.5. The employer should ensure that machinery and equipment, including their guards and other safety devices, are regularly maintained and kept in a safe condition. Records of such maintenance should also be kept.

### **Machinery and work equipment safety**

8.3.5.6. The employer should ensure that tools are kept in an efficient state, in good repair and in good working order. Tools with broken or cracked handles, chisels and punches with mushroom heads, and bent or broken implements should be replaced.

8.3.5.7. The employer should ensure that machinery and equipment are selected so as to be suitable for their intended use, and that they are not misused, such as using tractor-mounted buckets for working at height or as pile drivers.

8.3.5.8. The employer should ensure that all clearing of blockages and other reasons for gaining access to dangerous machinery should be carried out with machinery stopped.

8.3.5.9. The employer should ensure that workers know how to operate the machine including the emergency stopping procedures, before commencing operation of any machine. No machine should be left running when the operator leaves it.

8.3.5.10. The employer should ensure that workers receive relevant training on potentially dangerous equipment and are instructed never to use a machine unless they are trained to do so.

8.3.5.11. The employer should ensure that workers receive relevant training on proper coupling/hitching of implements and on the proper mounting for driveline power transmission systems and implements.

8.3.5.12. The employer should ensure that workers are adequately trained in the means to prevent equipment from falling or moving so as to avoid potential crushing or fatal injury in any situation when a heavy component of a machine requires moving, attaching or repair, for example, when changing the cutting platform and unblocking on a combine.

### **Safety and health in agriculture**

8.3.5.13. Workers should not operate machinery unless the guards are in position and all protective devices are working.

8.3.5.14. Workers should be authorized to safely stop the machine if it or any implement is not working safely or if any guards or protective devices are faulty, and inform the supervisor as soon as possible.

8.3.5.15. The employer should ensure that workers are properly trained and supervised in the repair of agricultural equipment. Prior to the repair of agricultural equipment, the power to equipment should be turned off, the movement of all rotating parts stopped and safety locks engaged.

8.3.5.16. Workers should use handholds when mounting and dismounting equipment.

8.3.5.17. Workers should never operate equipment while under the influence of alcohol or other substances which might affect their operating ability.

8.3.5.18. The employer should ensure that safe work protocols ensure adequate protection with regard to noise, vibration and ergonomics.

8.3.5.19. The employer should ensure that various hazards including shear points, pinch points and wrap points are identified and guarded and that workers are made aware of these hazards and trained and supervised to avoid them.

### **8.3.6. The use of PPE (see also Chapter 6)**

8.3.6.1. Where there are still some residual risks that cannot be reduced by other means, the employer should provide appropriate PPE, such as coveralls, gloves, goggles, safety boots and hearing protectors.

## **Machinery and work equipment safety**

### **8.4. Control of hazards created by stored and other energy sources**

#### **8.4.1. Hazard description**

8.4.1.1. Much agricultural equipment makes use of energy sources, such as electrical, mechanical, hydraulic, pneumatic, fuel and other energy sources, which pose special hazards to workers' OSH. Emerging energy sources may pose new and unforeseen hazards.

8.4.1.2. Stored energy is energy that is confined and may be released unexpectedly such as that which comes from machinery springs and suspension systems, hydraulic systems, compressed air systems, compressed gas systems, high pressure water systems, or other sources of stored power, e.g. batteries.

#### **8.4.2. Assessment of risk**

8.4.2.1. The employer and the operator should carry out a risk assessment to determine the hazards posed by energy sources and release of stored energy in order to develop control strategies required to minimize workers' exposure.

#### **8.4.3. Elimination of the hazard**

8.4.3.1. The elimination of power-related hazards in the agricultural workplace may prove difficult, but engineering controls and strict adherence to safe work procedures greatly reduce the level of risk.

#### **8.4.4. Engineering controls**

8.4.4.1. The employer should ensure risks are mitigated by means of guarding those parts of machines and equipment that may cause injury.

8.4.4.2. All sources of power that, if not properly guarded, can cause injury to the operator should be properly guarded.

### **Safety and health in agriculture**

8.4.4.3. Contact with electricity on farms can be predicted, such as when driving under an overhead power line with an upright irrigation pipe, or a partially elevated materials elevator or auger. An example of an engineering control is the burying of high voltage power lines, thus virtually eliminating the possibility of electrical burns or death as a result of contact of equipment such as grain augers or cane or other harvesters to high voltage overhead wires.

### **8.4.5. Safe working systems and procedures**

8.4.5.1. The employer should ensure that the safe control of energy is addressed by procedure and carried out by trained workers in accordance with the nature of the energy source and the characteristics of the farm environment.

8.4.5.2. The employer should ensure that all agricultural equipment undergoing servicing, renovation, or maintenance is appropriately isolated, locked out and labelled and that all persons are protected.

8.4.5.3. Employers should identify and implement specific procedures for the control of hazardous energy sources that include such measures as preparation for shutdown; actual shutdown; equipment (or module component) isolation; lock-out or tag-out application; safe positioning of workers; locating appropriate tools and protective equipment; release of stored energy; verification of isolation; and awareness of location of AC/DC power lines, hydraulic and pneumatic piping in work areas.

8.4.5.4. Employers should ensure that energy sources for agricultural equipment are turned off or disconnected or de-energized and the activating switch locked or labelled with a warning tag before maintenance or repair work is begun.

### **Machinery and work equipment safety**

8.4.5.5. Employers should identify and implement specific procedures for the control of hazardous energy once maintenance or repair work has begun including planning for re-energizing; accounting for exposed workers; removal of lock-out/tag-out device; and re-energizing of machine/device/component.

8.4.5.6. Employers should ensure that workers working around hazardous energy sources and equipment are equipped and trained in the hazard and protective measures in place.

8.4.5.7. Employers should ensure that electrical, hydraulic and compressed air/gas installations are installed and maintained by qualified personnel.

8.4.5.8. Employers should ensure that energy sources and facilities are appropriately labelled and that existing overhead power lines and underground cables are mapped.

8.4.5.9. Assigned workers should be trained to understand the equipment that they operate or repair, meticulously follow all operational and repair procedures; observe lock-out/tag-out procedures; know where safety zones are located, and know where other workers and standby persons are located.

8.4.5.10. Workers should know the proper procedures to adopt in the case of emergency (see Chapter 7).

8.4.5.11. Unauthorized workers should not enter areas with hazardous energy sources.

#### **8.4.6. The use of PPE**

8.4.6.1. Employers should ensure that workers are provided with protective equipment for the task to be undertaken such as face and eye shields, gloves appropriate for the task(s) at hand, aprons, leggings, etc.

Safety and health in agriculture

Farm tractor safety (forklifts, skid steers, track vehicles)

Date ..... Self-audit

Checklist	Step 1		Step 2 Priority for action	Step 3 Action required
	N/A	Yes No		
<b>Physical conditions</b>				
1. Is the tractor equipped with a rollover protective structure and seatbelts?				
2. Do workers always wear seatbelts with rollover protective structure when available?				
3. Is there a slow-moving vehicle (SMV) sign on the rear of the tractor or on the rear of towed equipment for roadway travel?				
4. Are SMV signs clean, with good reflective qualities?				
5. When towing equipment, do you use safety hitch pins and chains for roadway travel?				
6. Is there a first-aid kit mounted on the tractor, or accessible nearby?				
7. Is there a fire extinguisher located on the tractor, or accessible nearby?				
8. Are regular efforts made to keep steps free of mud, tools or debris that could cause slips?				
9. Is the exhaust system on each tractor in good condition and leak-free?				

Machinery and work equipment safety

Date..... Self-audit

Checklist (cont'd)	Step 1		Step 2 Priority for action	Step 3 Action required
	N/A	Yes No		
<b>Work practices</b>				
1. Do operators read the operator's manual or follow rules for safe operation? Is the operator's manual available?				
2. Before operating, do operators walk around the tractor making a visual pre-operational check of the tractor and for bystanders or other objects?				
3. Is the rule "No riders" on the tractor consistently enforced?				
4. Do you lock brake pedals together before roadway travel? Or when travelling at high speeds?				
5. Are brakes adjusted regularly?				
6. When operating a tractor in buildings, do you open doors and windows or start ventilation fans?				
7. Are buildings locked or keys removed from the ignition of the tractor when not in use to prevent unauthorized people from using the equipment?				

**Safety and health in agriculture**

Checklist (cont'd)	Self-audit				
	Date.....				
	Step 1		Step 2		Step 3
Work practices	N/A	Yes	No	Priority for action	Action required
8. Do tractor operators always steer clear of tipping hazards such as ditches, steep hills?					
9. When using front-end loaders, do workers travel with the bucket lowered to reduce chances of a side rollover due to instability?					
10. Have all tractor operators received training on the specific equipment that they will be using? Have they reviewed the manual for safe operating practices?					
11. Is mounted equipment always lowered to the ground before the operator leaves the tractor?					
12. Are towed loads always hitched to the drawbar and never higher?					
13. When towing high or wide loads, are clearances from overhead power lines always checked? As well as distances from poles?					
14. If the tractor does not have a sound proof cab, does the operator always wear hearing protection when noise levels exceed 90 decibels?					

Machinery and work equipment safety

All-terrain vehicles (ATVs)

Date ..... Self-audit

Checklist	Step 1		Step 2 Priority for action	Step 3 Action required
	N/A	Yes No		
<b>Physical conditions</b>				
1. Is the ATV equipped with a rollover protective structure?				
2. When towing equipment, do you use safety hitchpins?				
3. Is there a first-aid kit mounted on the ATV?				
4. Is the exhaust system on the ATV in good condition and leak-free? Is it guarded?				
5. Is the tyre pressure regularly checked?				
6. Are turn signals and headlamps regularly checked?				
7. Are brakes regularly adjusted?				
8. Are worn and defective parts replaced as soon as possible?				
<b>Work practices</b>				
1. Have all ATV operators received training on the specific equipment that they will be using? Is there documentation to support this training?				
2. Have all ATV operators reviewed the manual for safe operating practices?				
3. Is the operator's manual readily available?				

**Safety and health in agriculture**

Checklist (cont'd)	Date..... Self-audit				
	Step 1		Step 2	Step 3	
	N/A	Yes	No	Priority for action	Action required
<b>Work practices</b>					
4. Before operation, do operators walk around the ATV to make a visual pre-operational check of the ATV, taking into account the presence of bystanders or objects? Are children and bystanders kept away from equipment in operation?					
5. Do ATV operators always steer clear of tipping hazards such as ditches and steep hills?					
6. Are buildings locked or keys removed from the ignition of the ATV when not in use to prevent unauthorized people from using the equipment?					
7. Is there a clear policy to make sure that PPE is used when and as necessary?					

Machinery and work equipment safety

Power take-off (PTO) driven equipment

		Self-audit			
		Date .....			
Checklist		Step 1		Step 2 Priority for action	Step 3 Action required
		N/A	Yes		
<b>Physical conditions</b>					
	1. Do all PTOs have working shields and guards in place?				
	2. Is there a master shield in place where the PTO meets the tractor?				
	3. Are shields on PTOs checked periodically to ensure that they rotate freely? (Check only with power off.)				
<b>Work practices</b>					
	1. Before leaving the tractor seat, is the PTO always disengaged, engine shut off and where possible keys removed from the ignition? (Exceptions can be: silage blower, grinder-mixers, irrigation and manure pumps.)				
	2. When working with PTO-driven equipment, is clothing close fitting, long hair covered, and laces, etc., tucked away?				
	3. Do workers always avoid stepping over PTO shaft?				
	4. Are worn or defective parts replaced as soon as possible?				

**Self-propelled equipment** (harvesters, sprayers, combines, swathers, generators, irrigation pumps, etc.)

**Safety and health in agriculture**

Date ..... **Self-audit**

Checklist	Step 1		Step 2 Priority for action	Step 3 Action required
	N/A	Yes No		
<b>Physical conditions</b> 1. Are guards in place and OSH warning signs readable? 2. Are steps and walkways free of mud, tools or debris? 3. Is the SMV sign reflective and clean? 4. Are all safety systems fully operational?	N/A			
<b>Work practices</b> 1. Before operating, are operators aware of hazards or bystanders? 2. Is the rule "one seat—one rider" enforced? 3. Have all operators received training on their equipment and reviewed the operator's manual or safety rules? Is there documentation to support this training? 4. Is the power turned off and locked out where required before adjusting or servicing the equipment? (Documentation of a written lock-out procedure should be developed where required.) 5. Are chains, belts, wires and hoses regularly serviced and inspected?	N/A			

Machinery and work equipment safety

General machinery

Date ..... Self-audit

Checklist	Step 1		Step 2 Priority for action	Step 3 Action required
	N/A	Yes No		
<b>Physical conditions</b>				
1. Are key warning signs/signals on machinery readable? (Replacement signs/signals are available from most dealers.)				
2. Are all shields and guards in place? (PTO and other.)				
3. Are all machines free of jagged metal or protrusions?				
4. Have you developed a policy and ensured compliance of when PPE should be worn or used?				
5. Is any equipment that is likely to be towed on roadways equipped with safety chains and safety hitch pins? Are they attached properly according to regulations?				
6. Are SMV signs clean and reflective? Are they mounted on the rearmost piece of equipment before roadway travel?				

**Safety and health in agriculture**

Checklist (cont'd)	Date..... Self-audit					
	Step 1		Step 2		Step 3	
	N/A	Yes	No	Priority for action	Action required	
<b>Work practices</b>						
1. Are defective and worn parts replaced as soon as possible (including tyres)?						
2. Are children and bystanders kept away from operating equipment?						
3. Is the power turned off before adjusting or servicing machinery or lockouts used if required?						
4. Are moveable components properly blocked before repair or adjustment? Are they locked out?						
5. Do workers always observe the "No riders" rule on machines or drawbars?						
6. When implements are parked, are they out of the transport position, blocked or left in down position?						



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