International Labour Organization

Conducting Occupational Safety and Health Inspections in Agricultural Undertakings

A guide for labour inspectors

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Preface

The agricultural sector employs a large percentage of the workforce in both industrialized and developing countries. It is characterized by the constantly changing nature of operations, many of which are extremely hazardous due to the nature of the work or the climate. Whilst many workers are employed, many others may be tenants; persons participating in a collective economic enterprise, such as a cooperative; or family members.

Workers are often exposed to many hazards on account of the inadequate provision of risk control measures. Consequently, working conditions on many agricultural sites cannot be deemed "decent", as workers are not guaranteed a fair, just, safe and healthy working environment. This sector is therefore a priority for labour inspectorates worldwide.

The aim of this guide is to help labour inspectorates fulfil their role by providing practical information, in a user-friendly format, on a suggested methodology for conducting inspections of agricultural activities. This methodology ranges from the planning of the inspection to the reporting of its findings, and provides technical information that labour inspectors can pass on to employers and workers, with a view to ensuring "decent work".

The guide details many of the working activities that labour inspectors will address, and the hazards to which workers may be exposed. It also documents internationally recognized safety measures that will, if followed, reduce the likelihood of workers suffering from occupational accidents and diseases.

I trust that the guide will serve as a useful source of information for labour inspectors and other persons responsible for ensuring decent working conditions on agricultural undertakings.

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Abbreviations

ILO	International Labour Organization
ILS	international labour standards
FLT	forklift truck
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IPM	Integrated Pesticide Management
MSD's	musculoskeletal disorders
MEWP	mobile elevated working platforms
OSH	occupational safety and health
PPE	personal protective equipment
WHO	World Health Organization

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1 Introduction

The 2008 ILO Declaration on Social Justice for a Fair Globalization (the Social Justice Declaration) refers to four Conventions that are regarded as "most significant from the viewpoint of governance covering tripartism, employment and labour inspection". One of these four Conventions is the Labour Inspection (Agriculture) Convention, 1969 (No. 129), which states, in Article 6, that:

1. The functions of the system of labour inspection in agriculture shall be--

(a) to secure the enforcement of the legal provisions relating to conditions of work and the protection of workers while engaged in their work, such as provisions relating to hours, wages, weekly rest and holidays, safety, health and welfare, the employment of women, children and young persons, and other connected matters, in so far as such provisions are enforceable by labour inspectors;

(b) to supply technical information and advice to employers and workers concerning the most effective means of complying with the legal provisions;

(c) to bring to the notice of the competent authority defects or abuses not specifically covered by existing legal provisions and to submit to it proposals on the improvement of laws and regulations.

Article 1(1) of Convention No. 129 defines the term agricultural undertaking to mean "undertakings and parts of undertakings engaged in cultivation, animal husbandry including livestock production and care, forestry, horticulture, the primary processing of agricultural products by the operator of the holding or any other form of agricultural activity".

The Safety and Health in Agriculture Convention, 2001 (No. 184) supports Convention No. 129 by stating, in its Article 5 (1), that: "Members shall ensure that an adequate and appropriate system of inspection for agricultural workplaces is in place and is provided with adequate means".

Article 6 of Convention No. 184 asserts that:

1. In so far as is compatible with national laws and regulations, the employer shall have a duty to ensure the safety and health of workers in every aspect related to the work.

2. National laws and regulations or the competent authority shall provide that whenever in an agricultural workplace two or more employers undertake activities, or whenever one or more employers and one or more self-employed persons undertake activities, they shall cooperate in applying the safety and health requirements. Where appropriate, the competent authority shall prescribe general procedures for this collaboration.

It may be noted from Convention No. 129 that labour inspectors can have a varied mandate, and that the legal provisions they enforce cover many topics - all of which play a key role in ensuring decent work. Depending on the conditions at a specific undertaking, some legal provisions may be deemed more significant than others, such as freedom of association and collective bargaining. Others may be linked more specifically to maternity protection and occupational safety and health (OSH). However, this guide is designed to equip labour inspectors with the necessary skills to fulfil their OSH mandate as laid down in

Conventions Nos. 129 and 184 by carrying out effective inspections of OSH issues in agricultural undertakings.

The guide provides a suggested methodology for conducting an inspection of an agricultural undertaking – from the planning stage to the final report on the inspection itself. It is primarily aimed at providing guidance on the way to conduct proactive visits, as defined later in the text. Labour inspectors involved in reactive visits to determine the cause of an accident may wish to refer to the 2015 ILO publication entitled: Investigation of Occupational Accidents and Diseases – A Practical Guide for Labour Inspectors.

Well-planned and efficient inspections can contribute towards ensuring decent work for many. In 2019 employment in agriculture was estimated at 26.7[1] per cent of total employment. The Lloyd's Register Foundation World Risk Poll 2019 states, in its safety at work section, that: "The planet's most dangerous places to work are the fields and fishing boats of some of the poorest countries in the world. Thirty-four per cent of farmers, agricultural labourers and fishers in low-income countries were recorded by the World Risk Poll as having been seriously injured at work, and 32 percent in lower middle-income countries," adding that, "over 27 per cent of farmers, agricultural labourers and fishers have been seriously injured at work".

The diversity of operations in agricultural undertakings makes safety and health management challenging. However, as stated in the Resolution adopted by the United Nations General Assembly on 17 December 2018 regarding the Declaration on the Rights of Peasants and Other People Working in Rural Areas, "Peasants and other people working in rural areas, irrespective of whether they are temporary, seasonal or migrant workers, have the rights to work in safe and healthy working conditions, …".

This toll on workers must be seriously addressed; accidents and ill health are preventable - and inspections carried out by labour inspectors play a vital role in achieving this.

Remembering that all workers have the right to a "safe and healthy working environment",[2] and that employers have a "duty to ensure the safety and health of workers in every aspect related to the work" (Convention No. 184, Article 6(1)), the guide provides information on some of the common hazards found on agricultural undertakings and on control measures that, if adopted, will reduce the risks to workers and others who may be affected by the work activities.

1 ILO: *ILOSTAT*
2 ILO: *Promotional Framework for Occupational Safety and Health Convention, 2006 (No.187)*, Article 3 (2).

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2 Knowledge and skills required by labour inspectors

Labour inspectors are empowered to ensure compliance with national legislation, and it is therefore vital that they be fully conversant with this legislation and the scope of their authority.

2.1. Legislation

Given the international diversity in legislation, it is only possible to provide illustrative examples in this guide.[3]

Notwithstanding this, Article 7 of Convention No. 184 states:

...the employer shall:

(a) carry out appropriate risk assessments[4] in relation to the safety and health of workers and, on the basis of these results, adopt preventive and protective measures to ensure that under all conditions of their intended use, all agricultural activities, workplaces, machinery, equipment, chemicals, tools and processes under the control of the employer are safe and comply with prescribed safety and health standards;

(b) ensure that adequate and appropriate training and comprehensible instructions on safety and health and any necessary guidance or supervision are provided to workers in agriculture, including information on the hazards and risks associated with their work and the action to be taken for their protection, taking into account their level of education and differences in language; and

(c) take immediate steps to stop any operation where there is an imminent and serious danger to safety and health and to evacuate workers as appropriate.
Article 8 of Convention No. 184 covers workers' rights and duties and states:

1. Workers in agriculture shall have the right:

(a) to be informed and consulted on safety and health matters including risks from new technologies;

(b) to participate in the application and review of safety and health measures and, in accordance with national law and practice, to select safety and health representatives and representatives in safety and health committees; and

3 Readers may be interested in the ILO Global Database on Occupational Safety and Health Legislation (LEGOSH), which provides a picture of the regulatory framework of the main elements of OSH legislation, including OSH management and administration, employers' duties and obligations, workers' rights and duties, and OSH inspection and enforcement.

4 Risk assessment is the process of evaluating the risks to safety and health arising from hazards at work.

(c) to remove themselves from danger resulting from their work activity when they have reasonable justification to believe there is an imminent and serious risk to their safety and health and so inform their supervisor immediately. They shall not be placed at any disadvantage as a result of these actions.

2. Workers in agriculture and their representatives shall have the duty to comply with the prescribed safety and health measures and to cooperate with employers in order for the latter to comply with their own duties and responsibilities.

3. The procedures for the exercise of the rights and duties referred to in paragraphs 1 and 2 shall be established by national laws and regulations, the competent authority, collective agreements or other appropriate means.

4. Where the provisions of this Convention are implemented as provided for by paragraph 3, there shall be prior consultation with the representative organizations of employers and workers concerned.

To supplement Convention No. 184 and its accompanying Safety and Health in Agriculture Recommendation, 2001 (No. 192), and in accordance with decisions taken by the Governing Body of the ILO, a Meeting of Experts on Safety and Health in Agriculture was convened in late 2009 to consider a draft code of practice on safety and health in agriculture. This code of practice is devoted to improving OSH in agriculture and complements Convention No. 184 and its accompanying Recommendation No. 192, and provides further guidance for their application in practice.

The code provides guidance on appropriate strategies to address the range of OSH risks encountered in agriculture in order to prevent – as far as is reasonably possible – accidents and diseases for all those engaged in this sector. It also provides guidance on the roles of the competent authorities, employers, workers and their organizations in promoting OSH within this sector. Its provisions are based on principles contained in Convention No. 184 and many other ILO Conventions and Recommendations.

The provisions of the code are not intended to replace relevant national legislation or good practice on OSH in agriculture, especially where these lay down higher standards of control. More stringent requirements should take precedence over those of the code, but in the absence of national legislation and guidance, the code together with other national and international standards should serve as helpful guidance in improving OSH in agriculture.

Importantly, OSH standards affecting women workers have been traditionally underestimated because these standards and exposure limits to hazardous substances are based on male populations and laboratory tests. Since the majority of agricultural workers are women, the code takes into consideration the gender dimensions of OSH in agriculture. This is a positive development, which more closely reflects the reality of the sector.

2.2 Authority

Labour inspectors' powers are determined by Article 16 of the Labour Inspection (Agriculture) Convention, 1969 (No. 129).

Inspectors' powers are likely to include, inter alia, the right to: enter premises without prior notice; conduct examinations to ensure that the relevant legal provisions are being observed; question witnesses; examine and collect documentary information; collect materials for testing; and take enforcement action (require duty holders to take action, including with immediate effect in the event of imminent danger to workers' safety or health, and to impose sanctions).

Labour inspectors inspecting agricultural undertakings must also be familiar with the inspectorate's internal procedures and practices (systems of work/workflow). These may vary but could cover, amongst other matters: the composition of inspection teams (for example, the need for inspectors with specific competencies related to agricultural activities); collaboration with other agencies; the provision and use of personal protective equipment (PPE); the involvement of workers' and employers' representatives during inspections; the labour inspectorate's ethical code; [5] principles for taking enforcement decisions[6] (sanctioning), i.e., policies to address non-compliance with legislation; practices for reporting on inspections; and the communication of findings.

In their attempt to promote decent work and a good safety culture, labour inspectors would be greatly assisted in their task by having a knowledge of the stakeholders in agricultural undertakings and of the way in which they are focusing on ensuring decent working conditions. It would also be relevant to examine how the stakeholders' behaviour is being driven with regards to OSH.

When conducting an inspection of agricultural undertakings, labour inspectors must be conversant with the sector and have a sound knowledge of the work organization and management of a typical agricultural activity; the challenges faced by all those involved in the work – i.e., the employer and workers; and the national and internationally recognized safe working practices in the sector.

Inspectors also need to cooperate with the competent authorities, employers' and workers' organizations, and other partner organizations, to ensure that the objectives of national, regional or provincial OSH programmes are fulfilled. Such cooperation may include participation in outreach campaigns with the objective of improving working conditions in hard-to-reach workplaces and micro, small and medium-sized enterprises.

5 International Association of Labour Inspection (IALI): *The Global Code of Integrity for Labour Inspection*.
6 The *Enforcement Management Model* (EMM) is a framework that helps inspectors to make enforcement decisions in line with the Health and Safety Executive's (HSE's) Enforcement Policy Statement (EPS).

2.3 Additional skills

In order to conduct effective inspections on agricultural undertakings, labour inspectors will also need the following skills:

- Soft skills – the ability to interact effectively with workers, employers and their representatives, as well as other inspectors, and to communicate the findings of the inspection to a wide variety of individuals and organizations;
- Interviewing skills – the ability to draw out information through effective questioning;
- Hazard recognition – the ability to identify hazardous working situations to ensure that actions are taken to guarantee not only the workers' safety but also that of the labour inspectors;
- Technical competence – the awareness of safe working procedures that should be adopted, with particular relevance to the work activities being inspected;
- Organizational skills – the ability to plan inspections, and to record and organize the information obtained;
- Analytical skills – the ability to assess the way in which the agricultural undertaking is organized and the workforce is distributed, and where necessary to identify the employers, and contractors and subcontractors, which may affect management and coordination in the undertaking; and
- Legal competence – a knowledge of the legislation applicable to the employment relationship, working conditions and OSH, and to any other area covered by the labour inspectorate's mandate.

These skills will enable inspectors to identify compliance (and conversely non-compliance) with national legislation and – where applicable – collective bargaining agreements, and to determine actions to be taken.

2.4 Risk assessment

As required under Article 7 of Convention No. 184, employers are expected to conduct risk assessments in relation to the OSH of their workers. It is thus crucial that inspectors fully understand the purpose of these assessments and the risk assessment methodology - otherwise it will be difficult for them to provide advice to employers and workers on this vital process. A summary of the process is given below, and further information is contained in the ILO's publication Training package on workplace risk assessment and management for small and medium-sized enterprises, and section 4.2 of the Code of practice on safety and health in agriculture.

A **risk assessment** is a process that evaluates the risks to a person's safety and health arising from hazards at work and typically involves five steps.

A **hazard** is anything that has the potential to cause injury or damage to a person's health. All workplace injuries and illnesses are caused by hazards - for example, unguarded machinery, pesticides, vehicles, electricity and inappropriate workstations. If a hazard is not identified, it is likely that an accident or disease will occur.

Risk is a combination of the likelihood of an occurrence of a hazardous event and the severity of injury or damage to people's health caused by this event.

Risk = severity x likelihood

The potential severity and likelihood of an event are split into various categories as shown below:

Severity of consequences:

(1) Insignificant: no injury or ill health;

(2) Minor: short-term impact;

(3) Moderate: semi-permanent injury or ill health;

(4) Major: disabling injury or ill health;

(5) Catastrophic: potentially fatal.

Likelihood of event:

(1) Rare: has rarely - if ever – happened;

(2) Unlikely: is possible, but is not expected to happen;

(3) Moderate: could be expected to happen once a year;

(4) Likely: will probably occur, but is not persistent;

(5) Almost certain: occurs regularly.

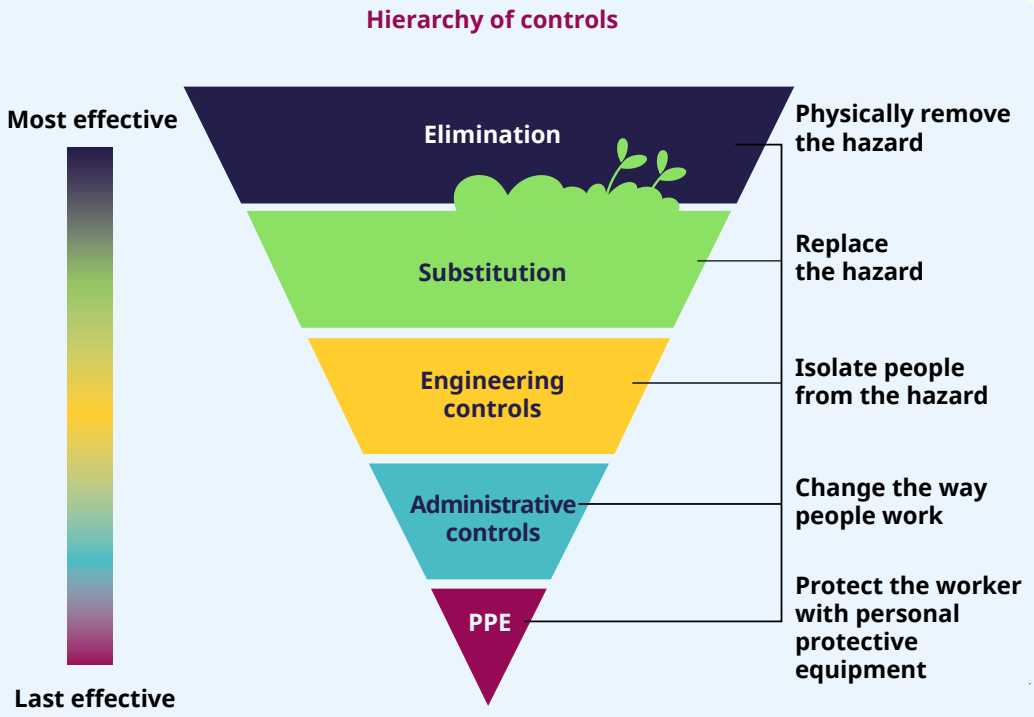
By evaluating the severity and likelihood of an event and inputting the findings into a risk matrix table (see Table 2.1), the level of risk may be determined to help prioritize those risks that require prompt attention. Immediate action - e.g., the implementation of risk control measures - should be taken to reduce the level of risks highlighted in the red zone; action should also be taken to reduce those included in the orange zone. The risks presenting in the green zone may be accepted, but employers can always take action to reduce these risks as well.

Table 2.1: Risk matrix table.

	Likelihood of event				
Severity	Almost certain 5	Likely 4	Moderate 3	Unlikely 2	Rare 1
Catastrophic 5	25	20	15	10	5
Major 4	20	16	12	8	4
Moderate 3	15	12	9	6	3
Minor 2	10	8	6	4	2
Insignificant 1	5	4	3	2	1

In the long term, the protective measures to be implemented should follow the hierarchy of controls contained in Figure 1. However, it may be expedient to implement control measures in a different order in the immediate term. For example, it would be more feasible to supply PPE to workers in a noisy environment before longer-term plans to replace / relocate noisy equipment can be implemented.

Figure 1. Hierarchy of risk controls.



(a) eliminate or substitute the hazardous agent with a less hazardous one, such as a less hazardous chemical, or a non-hazardous one, or use low-voltage electrical hand tools;

(b) reduce the hazard/risk at source through the use of engineering controls, such as providing sound-proofed safety cabs for tractors, or interlocking guards for machinery;

(c) minimize the hazard/risk by using safe working procedures or other organizational measures, such as restricting entry into enclosures that have been sprayed with pesticides; and

(d) where unacceptable risks remain, provide workers with suitable PPE, such as protective clothing, respiratory protective equipment and hearing protectors, ensuring that it is both properly used and maintained.

This order has been selected because it starts with collective control measures, aimed at reducing risks to all workers, and moves down to individual control measures, e.g., PPE, that only reduce the risk of the worker actually using it.

It must be borne in mind that the same hazard can present different levels of risk – and that some hazards may only constitute a minimal risk.

Figure 2. A desk fan (unguarded).

Source: ILO.

Figure 2 shows a fan with its associated fan blades, which have the inherent potential to cause injury if a worker touches them; in other words, the fan blades are a hazard.

When looking at the level of risk, it is necessary to identify the likelihood of a worker encountering the hazard and thus being harmed. In this example, coming into contact with the fan blades would usually produce the same severity of injury.

Figure 3. A fan on a desk.

Source: ILO.

Figure 4. A fan on a filing cabinet.

Source: ILO.

In Figure 3, we see a worker who might easily touch the unguarded fan blades on his desk; however, in Figure 4, the likelihood of his touching the fan blades would be reduced as the fan is on the filing cabinet.

Referring back to the risk matrix table (Table 2.1) to determine the level of risk with regards to these two scenarios, we may observe that although the **severity** remains the same for both – **moderate** – the **likelihood of the event** (touching the fan blades) is different; this may be **moderate** for Figure 3, resulting in a level of risk of **3*3 = 9**, and unlikely in Figure 4, with a resulting level of risk of **3*2 = 6**.

Table 2.2. Example of a completed risk matrix table.

Severity	Likelihood of event				
	Almost certain 5	Likely 4	**Moderate 3**	Unlikely 2	Rare 1
Catastrophic 5	25	20	15	10	5
Major 4	20	16	12	8	4
Moderate 3	15	12	**9**	**6**	3
Minor 2	10	8	6	4	2
Insignificant 1	5	4	3	2	1

Having identified the level of risk, the assessor should identify which controls might be put in place. Could the hazard be eliminated? One option might be to install an air conditioning system, which would remove the need for the fan and thus the hazard (the fan blades). This may be unrealistic due to costs and the fan cannot be substituted, so we have to move down the hierarchy of controls (Figure 1). The next on the list concerns engineering controls, and it has to be determined whether they can be introduced. In this case, the answer is "Yes", as a guard might be fitted to prevent workers accessing the hazard. The **severity** of injury remains the same (if a worker makes contact with the fan blades) **moderate** 3: but the **likelihood** has dropped to Rare 1: now we have a resulting level of risk of 3*1=3 an acceptable level of risk. We have moved from a level of risk of **9** to 3. Of course, the level of risk in Figure 4 could also be reduced by guarding the fan blades - and then we move from a level of 6 to 3.

Figure 5. A fan with the guard fitted.

Source: ILO.

In Figure 5 we may observe that the fan has been fitted with a guard. Is the hazard still present? Yes, the fan blades are still there and are rotating - thus the hazard is present. However, the level of risk is minimal as the worker and the hazard can no longer come into contact.

We only tend to pay attention to risk – **but it is vital to focus on hazards when conducting a risk assessment**. An unidentified hazard cannot be assessed and thus the risk cannot be controlled. Figure 6 gives a clear example of this. If the tigers (hazards) are not located then when a worker passes an accident might occur.

Figure 6. Diagrammatic representation of hazard and risk.

POTENTIAL CAUSE OF ACCIDENTS

No accidents happen without the interaction of humans

LIKELIHOOD AND SEVERITY

Accidents happen with human interaction

© William Topa / Unsplash

3 The inspection process

There are four main stages of the inspection process:

1. **Planning/preparation of the inspection.**
2. **Conducting the inspection.**
3. **Determining action to be taken**
4. **Reporting on the inspection.**

Some inspectorates have developed awareness-raising material for stakeholders, with respect to their role and what to expect when they visit an undertaking. The material covers information such as what the inspector will want to see and what their duties and rights are.[7]

3.1 Planning/preparation of the inspection

A proper planning of the inspection is crucial. If it falls short, the inspection itself is unlikely to be effective – and may indeed be counter-effective. Labour inspectors are responsible for ensuring compliance with national legislation. An adequate preparation will ensure that all relevant matters are considered, thereby promoting/ensuring compliance and consequently an improvement in working conditions. This preparation may involve the mapping of all actors who may be at the undertaking, as they might have important information to clarify how the work is organized or provide information on factors liable to affect compliance. These actors will include: the employer; the contractors; the service providers (for example, security, cleaning, catering); and the workers.

When planning the inspection, consideration must be given as to whether other authorities should accompany the labour inspectors during the planned visit. These might include the tax authority; the police; other inspectorates – such as Labour Relations and Social Security Inspectorates; and environmental inspectors. The topics to be covered during the inspection and any previous information about the undertaking will have a bearing on whether other agencies will accompany the labour inspectors. Joint inspections may help to ensure consistency and/or coordination in the application of legislation by the various authorities, and may also reduce the inspection burden on duty holders (as the number of inspections will be minimized). When joint inspections are to be conducted with other agencies, it is vital that each agency be involved in the planning process and that all organizations are clear as to the objectives of the visit, the roles of each institution, the methodologies used, the person or body that takes the lead, and the way in which information will be shared and reported.

The planning process may be broken down into various stages.

7 Two examples of such information include: WorkSafe, New Zealand: *Inspector assessments on farms* (accessed 25 August 2021); and Health and Safety Executive (HSE), United Kingdom: *When a health and safety inspector calls* (accessed 25 August 2021).

3.1.1 Identification of the issues to be covered by the inspection.

These issues may include, for instance, work at height, transport, musculoskeletal disorders / manual handling, pesticides, machinery and child labour. The inspectorate's objectives, contained in its inspection plan, will normally define the issues to be covered during inspections, the specific topics to be taken into account in sectorial inspections - for example, pesticides and chainsaw safety in forestry inspections - and the types of proactive inspections that will be conducted.

These objectives will help to establish when a visit should be carried out. For example, if the inspectorate is planning to address pesticide use, it would be preferable to visit the undertaking earlier in the growing season when pesticides are more likely to be used. Similarly, manual handling issues may be more prevalent during the harvest season.

3.1.2 Identification of the premises to be inspected and the timing (when)

The selection of enterprises will be contingent upon whether the undertakings are registered – and therefore known to the authorities. When deciding which undertaking to visit, inspectorates may also take into account the number of workers employed, the undertaking's record with regards to OSH (accident and disease history, results of previous inspections, voluntary certification of OSH management systems), its geographical location, and inspectoral knowledge of unregistered premises.

Inspectorates tasked with the inspection of agricultural undertakings are faced with a number of challenges. One is that they may be unaware of a specific undertaking's existence and location, and another is how they might access it.

The logistics of visiting an undertaking is not a topic covered by this guide. However, in accordance with Article 15(2) of Convention No. 129, "the competent authority shall make the necessary arrangements to reimburse to labour inspectors in agriculture any travelling and incidental expenses which may be necessary for the performance of their duties".

OSH inspectorates may also wish to consult with other inspectorates/authorities visiting agricultural undertakings as they may have information on undertakings within their realm of authority that are failing to comply with the legislation. This may be an indication that an undertaking is exposing its workers to unacceptable risks and thus warrant an inspection.

3.1.3 Identification of the type of visit to be made

Labour inspectors' visits (actions) are either **proactive** (inspections) or **reactive** (investigations); in both cases, these visits can either be announced, when the persons in control of the workplace have been forewarned that an inspection will be carried out on a specific day / time, or unannounced, when no warning is given to those in charge of the workplace.[8]

The main advantage of announced visits is that the enterprise has time to ensure that all the necessary documents are available and that senior management will be present. Announced visits can also help to ensure that the inspection is undertaken at a mutually convenient time. Conversely, the main disadvantages are that the enterprise has time to correct, perhaps temporarily, any non-compliance issues, remove any documents or workers that they do not wish the labour inspectors to see – and management may be "unexpectedly" called away. Workers may also believe that labour inspectors are not seeing the enterprise's real/normal working conditions and that, by giving an advance warning to employers, they are not impartial. The main advantage of unannounced visits is that labour inspectors see working conditions as they really are on a day-to-day basis. Depending on the objectives of the inspection visit, especially if there is already a suspicion of serious non-compliance, announcing it beforehand might therefore undermine its success.

There is nevertheless an argument for both announced and non-announced proactive and reactive visits, and much depends on the issues that are being inspected.

Proactive visits generally fall into the following categories:

(a) ***Routine visits*** (planned, regular, standard, and preventive) may be part of a predetermined plan and labour inspectors will ensure that employers and workers are complying with the law. The inspectors will also provide advice on how compliance can be improved. Given the wide range of legislation that labour inspectors are empowered to enforce and/or depending upon the size of the workplace or other resource constraints, they may be unable to conduct an inspection that covers the whole workplace or all aspects of the legislation. But this must not be interpreted as implying that labour inspectors condone non-compliant activities they have not inspected – and this matter must be made clear to those with the duty to comply with the legislation.

(b) ***Follow-up visits*** are generally conducted after routine visits, with a view to verifying the implementation of measures that the inspector has stipulated to ensure compliance with the law. There is generally no predetermined time frame for these follow-up visits; the measures required by the inspector will determine the time frame for this visit.

(c) ***Special visits*** may be part of a national or regional/local programme geared to specific activities, such as ensuring the safe operation of workplace transport, work at height, and the safety of machinery during the harvest.

(d) ***Blitz visits*** generally occur when labour inspectors target either a specific region/location or a particular topic within a concentrated time period. These visits are aimed at having a maximum impact and are often used as part of a safety and health campaign. On many occasions, blitz visits are conducted with other authorities. Many inspectorates will publicize the action they have taken during these visits to help further the campaign's impact.

Reactive visits generally fall into the following category:

Investigative visits. These may be investigations into occupational accidents or diseases, or complaints received from workers or members of the public.

8 "Labour inspectors... shall be empowered... to enter freely and without previous notice at any hour of the day or night any workplace liable to inspection", Article 16(1)(a) of Convention No. 129.

3.1.4 Preparation of the inspection visit

Once the inspectorate/labour inspectors have identified the issues/topics to be covered during the inspection and the workplaces to be inspected, they will need to plan for the actual visit.

The level of planning will depend on the issues/topics that are to be covered; however, labour inspectors will need to obtain and/or review:

- The inspectorate's records for the undertakings to be inspected, as this will inform their decisions with regard to any action they may wish to take. For example, if the employer has been given previous advice on a particular issue and has taken no or limited action to improve compliance, then it may be more appropriate for the labour inspectors to take enforcement action/implement sanctions to ensure compliance. These records will most probably provide the inspector with information on the number of workers, the size of the workplace, the work activities likely to be present, and the employers' and workers' attitude with regard to the inspectorate, labour inspectors and compliance with legislation;
- Copies of the relevant national legislation on the issues/topics to be covered, to be consulted in case of doubt;
- The plan of any premises to be inspected (if available). This may be useful in the case of agricultural undertakings to identify outbuildings where machinery and pesticides may be stored, as well as welfare facilities, accommodation, etc.;
- Any available promotional material on the topics to be covered during the inspection. This material not only serves as an important resource for the inspector, but also leaving it with the employers and workers helps towards providing momentum to improve conditions following inspections;
- Any documentation required by the inspectorate's policies and procedures. This may include documentation to be completed by the labour inspectors (visit reports) or information that has to be presented to employers and workers. It may also provide general information about what to expect from the inspector and/or a description of their powers, etc. This type of leaflet[9] is useful to all concerned; for instance, if the labour inspectors encounter difficulties when trying to enter the premises, they may refer to the leaflet as it will provide official evidence of their right to entry to those who may be obstructing them;
- Any guidance from the inspectorates that relates to the topics to be covered. This may be in the form of a checklist on matters to be inspected and/or may provide information to labour inspectors on action they might be expected to take in specific situations. For example, the Health and Safety Executive (HSE) in the United Kingdom provides its inspectors – and makes available to the general public – Topic Inspection Packs, which describe and support the inspection of various topics.[10] The protocols and guides used by the Spanish Labour and Social Security Inspectorate are another example, and they are available on the institution's web page.[11]

In addition to obtaining the above information, labour inspectors may also draw up a plan for the inspection (this information is not exhaustive).

9 *What to expect when a health and safety inspector calls: What to expect when we visit your business* (HSE, United Kingdom), accessed 25 August 2021.
10 *Topic Inspection Packs (TIPs)* (HSE, United Kingdom), accessed 25 August 2021.
11 *Ministry of Labour and Social Economy (ITSS)*, Spain, accessed 25 August 2021.

Table 3.1 An example of an inspection plan for an agricultural undertaking.

Inspection plan	
Undertaking to be inspected/location.	
Inspection to be conducted: date and time.	
Resource requirement (number of personnel and specific competencies).	
Joint inspection with other agencies? If so, identification of agencies and personnel.	
Transport to undertaking via?	
Inspectorate's records of duty holders expected to be on the undertaking. Do these records include instructions on action to be taken by the duty holder following previous inspection/s? If yes, make a record of matters to be verified.	
Topics to be covered (for example): Full aspects of OSH or specific topics (work at height, pesticides, child labour, transport, manual handling, etc.);	
Type of inspection? For instance: Proactive: Routine, follow-up, special, blitz; Reactive: Accident or complaint investigation.	
National legislation/technical standards with regard to topics to be covered.	
With regard to the topics to be covered, obtain relevant inspectorate policy and procedures or other guidance material for labour inspectors.	
With regard to the topics to be covered, identify what documentation will need to be checked on site, i.e., safety policy, risk assessments - safety plans, pesticide application records, accident/ disease records, etc.	
.....	

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In addition to the above materials and documents, labour inspectors will need to ensure that they have the following before they leave their office:

- Official identification card or warrant verifying their credentials;
- Notebooks and writing materials to record information;
- Camera with still and possibly video capability to record documents and conditions found (consider taking extra batteries and memory card/films);
- Personal protective equipment (PPE), such as a hard hat, protective footwear with steel toe caps and steel mid-soles, high visibility clothing, suitable outdoor clothing to protect against the weather, respiratory protection, eye protection, ear protection and hand protection, which should be freely provided to the inspector by the labour inspectorate;[12]
- The necessary legal paperwork. This will depend on the national legislation but may include stop/prohibition notices, improvement notices, statement forms, and means to record and tag evidence in accordance with national legislation;
- Mobile phone, as it may be necessary to communicate with other labour inspectors in the team, the inspectorate or the police – either on account of the labour inspectors' own personal safety or matters related to being obstructed in the course or their duties. It may also be useful for obtaining additional information on enterprises and workers in the inspectorate's databases, if these are not accessible at the site, or receiving advice and authorization with regards to taking enforcement action; and
- Measuring equipment and torch/flashlight.

12 See Article 16(3) of the *ILO Occupational Safety and Health Convention, 1981 (No. 155)*.

3.2 Conducting the inspection

3.2.1 Arrival at site

When labour inspectors arrive at an agricultural undertaking, they are well advised to observe the general conditions – condition of the access road, layout of the undertaking, as well as the 'housekeeping' (does the undertaking appear well organized, is the machinery well maintained/ stored in a tidy manner?). An undertaking that appears well organized (clean and tidy) often has a good safety and health management system and vice versa.

Whenever possible, inspectors should also observe work activities as they arrive, as systems of work may change when employers and workers are aware that an inspection is being carried out.

Inspectors may sometimes also conduct a spot check of work activities they come across, for example harvesting, spraying and forestry operations. In these instances, it is vitally important for the safety of the inspector and others in the vicinity that no one should approach the plant or equipment being operated until the operator has indicated that it is safe to do so. In addition, the appropriate PPE should be worn before approaching any operations.

Some agricultural undertakings may post signage about the PPE that should be worn, or there may be specific procedures than need to be taken regarding biosecurity - and inspectors should follow these instructions. The type of PPE required will depend on the activities being inspected. For instance, when inspecting forestry operations, the PPE requirements will include a hard hat, protective footwear and a high visibility vest; on a poultry farm the undertaking, due to biosecurity, may provide PPE for all visitors; and on a fish farm, a life vest may be needed. Inspectors should be aware of the potential risks and thus the PPE required on the premises. They should demonstrate good practice by wearing the appropriate PPE themselves, even if the workers at the undertaking are not doing so.

3.3 Matters to be addressed during the OSH aspects of the inspection

This section covers matters that labour inspectors may wish to address during an OSH inspection of the undertaking. At the outset, it must be stated that the matters discussed here below do not constitute an exhaustive list of all the activities that could be inspected, or of the hazards and safe systems of work that could be covered during an inspection.

National legislation may place duties on employers or others in control of workplaces to ensure that certain documentation (with reference to OSH) is present and up-to-date. It would be impossible to list all the documentation required by national legislation; however, there may be a requirement for some or all of the following (in no particular order):

- Documented safety and health policy;
- Safety and health plans;
- Employee training records;

- Standard operating procedures covering work activities (safe systems of work);
- Risk assessments;
- Accident and occupational disease records;
- Records of management workplace safety inspections;
- Minutes of workplace safety and health committee meetings;
- Equipment manuals/maintenance records/examination records;
- Safety data sheets of hazardous chemicals in use;
- Social or other insurance coverage – including work injury insurance: and
- Medical aptitude certificates of workers.

Labour inspectors may wish to examine these documents and ascertain whether, for example;

(a) the standard operating procedures covering the work activities are actually being followed;

(b) the control measures that have been identified as required in the risk assessments have been implemented. Has action been taken on issues identified in the OSH committee meetings?

(c) the accident and occupational disease records/investigation reports are used to help identify appropriate risk control measures to prevent recurrences;

(d) workers have been trained in areas related to existing hazards and preventive measures; and

(e) consideration has been given to the coordination and cooperation of work activities and OSH management[13] between all employers/workers present at the undertaking. For instance, has it been ascertained who has the overall responsibility for OSH at the undertaking, and who determines safety rules – such as speed limits, PPE requirements, etc.?

If the above matters are not being addressed, this might imply that there is no active OSH management system at the undertaking and action will need to be taken. Any steps taken by the inspectors to ensure that these issues are taken into account will be contingent upon the level of non-compliance with national legislation, the level of risk and the respective labour inspectorate policies.

During the visit the inspectors will have to appraise the working practices that are being followed. This may be done before or after examining the paperwork required under national legislation. Nonetheless, in the event that the inspectors have already observed a defect in the plant, layout or working methods, which they have reasonable cause to believe constitutes an immediate threat to the workers' safety or health, it would be inappropriate to start examining the paperwork. Upon observing these defects, the inspectors should first take the steps they are empowered to take to remedy the defect,[14] thereby ensuring the workers' safety and health before they turn to the paperwork.

13 See Article 6 of the *Safety and Health in Agriculture Convention, 2001 (No. 184).*
14 See Article 18(2)(b) of the *Labour Inspection (Agriculture) Convention, 1969 (No. 129).*

3.3.1 The control of risks on agricultural undertakings

All employers involved in the agricultural undertaking should – so far as is reasonably practicable[15] provide a safe and healthy working environment. This can be attained by establishing a coordinated occupational safety and health management system[16] – a set of interrelated or interacting elements designed to establish OSH policy and objectives and to achieve those objectives. The activities required to produce agricultural products require sound management, and this also applies to the organization of OSH. Occupational hazards /risks are not controlled by chance. It makes no sense to wait for an accident to occur and then establish risk control measures to prevent it from recurring. Proactive management of OSH is required, and inspectors should ask questions about the OSH management system - how the undertaking keeps workers safe, who is responsible for what, and how its accountability is ensured.

While employers remain responsible for the application of the adequate OSH risk control measures for workers dependent upon them, the person with control over or primary responsibility for the overall undertaking should ensure coordination and cooperation of all enterprises and self-employed persons on site.

As stated earlier, Article 7(a) of Convention No. 184 requires employers at agricultural undertakings to carry out appropriate risk assessments and to adopt preventive and protective measures. These assessments pinpoint the hazards to which workers are exposed and those workers liable to be injured; they also identify the current level of risk and determine whether it is acceptable. If this is not the case, the assessment should go on to identify further control measures that will reduce the level of risk to an acceptable level. When proposing further control measures those completing the assessment should select the control measures in accordance with the following hierarchy of risk control measures:

(a) elimination: removal of the hazard, e.g., remove the need to work at height;

(b) substitution: e.g., replace the material or process in question with a less hazardous one;

(c) engineering controls: e.g., prevent access to the hazard;

(d) administrative controls: e.g., identify procedures/instructions to work safely and supervisory methods; and

(e) personal protective equipment (PPE): when all the above measures have been found to be ineffective.

There can be no denying that using PPE to reduce some of the risks at an agricultural undertaking is an important control measure. However, it should not be an option before considering the other four control measures listed above: elimination, substitution, engineering and administrative controls. PPE is personal and thus only protects the person using it. The other control measures are more effective as they provide collective protection from the hazard – and therefore all workers are protected.

15 "So far as is reasonably practicable" - balancing the level of risk (likelihood and degree of injury) against the measures needed to control the real risk in terms of money, time or trouble.
16 For further information see: *'Guidelines on occupational safety and health management systems ILO-OSH 2001'*

3.3.2 Young workers

Due to the hazardous nature of agricultural work, it is vital that all workers receive information, instruction and training covering the hazards to which they might be exposed, and that risk control measures are implemented to ensure safe systems of work throughout the undertaking. National legislation may require workers to have undergone specific training programmes, such as training on how to operate a chainsaw or specific vehicles (and potentially have been certified as competent operators), and inspectors will have to verify this.

Notwithstanding these measures, young workers aged between 18-24 years who are carrying out the same tasks as adult workers are more likely to be injured - and thus particular attention is required to ensure that they are suitably trained and supervised.

Employers must ensure that young workers receive special consideration because they are:

- Still growing and their brains, organs, muscles, and bones are still developing;
- More sensitive to chemicals, toxic fumes, dust, noise and vibration than adults;
- More likely to make unreasonable and potentially dangerous decisions due to risk-taking behaviours when faced with fast-paced, exciting or stressful situations in the workplace;
- Less experienced and need supervision and training;
- Bored more easily and may let their attention wander;
- Less informed or aware of obvious risks; and
- Less able to voice concerns over workplace hazards, on account of their limited bargaining power.

When providing advice on the training of young workers to the employer, it may be useful if inspectors highlight “the tell me, show me and watch me” approach.

This approach has three steps:

- Tell me - Provide a clear and detailed explanation of the task to young workers, paying particular attention to critical elements and documented procedures;
- Show me - Demonstrate the task, explaining key points and asking young workers questions to make sure they have understood; and
- Watch me - Review the young workers performing the task and provide clear and constructive feedback, and continue to supervise them until they are competent to complete the task.

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3.3.3. Child labour

The ratification of the Worst Forms of Child Labour Convention 1999 (No. 182) by all 187 Member States of the ILO, on 4 August 2020, is an historic first for the Organization. This Convention defines the term child as applying to all persons under the age of 18.

Child labour is more prevalent in agriculture than in any other economic sector, accounting for approximately 70 per cent of child labour worldwide.[17] Moreover, since many children below the age of employment live on farms, the risk of accidents and diseases to them is significantly increased, including through exposure to pesticides and other chemicals frequently used in agriculture.

Article 3 of Convention No. 182 defines the worst forms of child labour as comprising of:

(a) all forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom and forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict;

(b) the use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic performances;

(c) the use, procuring or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in the relevant international treaties;

(d) work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children.

Subparagraph (d) of Article 3 is particularly relevant to agricultural undertakings, as some of their activities are likely to harm the health and safety of children.

In no case should employers allow workers below the age of 18 to carry out hazardous work unless all the following conditions apply - and inspectors should verify this:

(a) young workers are permitted to perform such work under national laws and regulations or by decision of the competent authority;

(b) the workers are at least 16 years of age;

(c) the workers have received specific instruction or vocational training that provides them with the competence to carry out such work safely, or they are currently undertaking such training;

(d) the workers' capabilities for carrying out the tasks are properly assessed; and

(e) young workers are adequately supervised throughout such work.

17 UNICEF/ILO: *Child Labour: Global estimates 2020, trends and the road forward - UNICEF DATA* accessed 25 August 2021

Part II of the Worst Forms of Child Labour Recommendation 1999, (No. 190) provides guidance on the term "hazardous work", stating:

3. In determining the types of work referred to under Article 3(d) of the Convention, and in identifying where they exist, consideration should be given, inter alia, to:

(a) work which exposes children to physical, psychological or sexual abuse;

(b) work underground, under water, at dangerous heights or in confined spaces;

(c) work with dangerous machinery, equipment and tools, or which involves the manual handling or transport of heavy loads;

(d) work in an unhealthy environment which may, for example, expose children to hazardous substances, agents or processes, or to temperatures, noise levels, or vibrations damaging to their health;

(e) work under particularly difficult conditions such as work for long hours or during the night or work where the child is unreasonably confined to the premises of the employer.

4. For the types of work referred to under Article 3(d) of the Convention and Paragraph 3 above, national laws or regulations or the competent authority could, after consultation with the workers' and employers' organizations concerned, authorize employment or work as from the age of 16 on condition that the health, safety and morals of the children concerned are fully protected, and that the children have received adequate specific instruction or vocational training in the relevant branch of activity.

Inspectors will need to be aware of their national policy - and inspectorate's policy – with respect to the actions to take if and when instances of child labour are identified. Further information on the topic of child labour and inspectorates' actions may be found in the following ILO brief: Optimizing compliance with child labour legislation through strategic collaboration of labour inspection and child labour monitoring programmes. This brief also refers to an e-learning course for child labour inspectors and monitors, which readers may find useful.

3.3.4 The site inspection

The site inspection will examine the working practices being followed to ensure that they are, in fact, safe. During the visit labour inspectors will not only examine compliance with national laws and regulations but also provide technical advice on how to comply with the legislation. This guide will not, due to differences in national legislation, address legislation. As previously stated, it is imperative that those conducting OSH inspections in agricultural undertakings are familiar with the national legislation and are therefore able to identify compliant and non-compliant systems of work.

The preventive/risk control measures detailed in the following sections are internationally recognized; they reduce exposure to hazards and thus, when in place, make it less likely that workers will succumb to accidents or suffer ill health.

As it is impossible for this guide to cover in depth all the hazards and risk control measures present in agricultural undertakings, it will focus on various issues and information that inspectors might address. Readers wishing to further their knowledge on the subject may wish to consult the ILO Code of practice on safety and health in agriculture.

3.3.4.1 Substances hazardous to health

There are numerous substances with which workers may come into contact as part of their work activities - and many are hazardous to their health. Many of these substances are used during the work activity such as pesticides or other chemicals (which should be labelled in accordance with the "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)").[18] [19] When supplied, the chemicals should be provided with material safety data sheets.[20]

Box 3.1. A compliant label contains the following information

Product identifier: the chemical identity of the substance and its shipping name.

Signal words: indicate the level of severity of the hazard, including "Danger" (more serious) and "Warning" (less serious).

Hazard statements: phrases (and codes) describing the nature and, where appropriate, the degree of the hazard, e.g., "Causes skin irritation".

Precautionary statements and pictograms: phrases and/or pictograms indicating recommended measures to be taken in order to minimize or prevent the harmful effects of exposure to, or improper storage or handling of, a hazardous product. There are five types of precautionary statement: general, prevention (e.g., "do not spray on an open flame or other ignition source"), response (in the event of spillage or exposure), storage, and disposal.

Supplier information: detailed contact information (name, address and phone number) for the manufacturer or supplier.

Pictogram: a graphical composition including a symbol, shape, border, background and colour that is intended to convey specific information.

However, many hazardous substances are also the by-product of an activity being carried out - such as welding fumes, crop or animal dust, or plant sap - and it is important that inspectors are able to recognize this and ensure that suitable risk control measures are in place to protect workers and others.

18 *About the GHS | UNECE*. The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is an internationally harmonized (a single system) classification and labelling of chemicals proposed by the United Nations to inform and protect individuals involved in their production, handling, transport, use and disposal as well as the environment.

19 *United Nations: Globally Harmonized System of Classification and Labelling of Chemicals*

20 Material safety data sheets are written instructions on the properties of the chemicals, including illustrations and pictograms. These safety instructions and information should be collected and stored in a place easily accessible at the workplace. Further information may be obtained at ILO: *International Chemical Safety Cards (ICSCs)*

There are three exposure routes for hazardous substances to enter the body:

- Inhalation – breathing in gases, vapours, aerosols, dusts;
- Dermal contact / injection / absorption – entering the body through the skin, cuts; and
- Ingestion – accidently swallowing substances when drinking out of bottles used to store chemicals, or eating food or smoking with unwashed hands.

Where it is possible for workers to be exposed to hazardous substances through one of the above exposure routes, inspectors will need to ensure that actions are taken to reduce the likelihood of this exposure.

Following the hierarchy of risk controls mentioned in Figure 1, the preferred controls would be to eliminate or substitute the hazard. This may not be possible in all agricultural undertakings, which may have to rely on the following measures (also bearing in mind they might also not be feasible in every context): engineering controls, e.g., local exhaust ventilation (extraction systems); administrative controls, e.g., effective training – ensuring amongst other things workers are aware when it is safe to re-enter an area where a crop has been sprayed; the rotation of workers; and PPE, e.g., respirators, gloves, coveralls.

These control measures all have the following hygiene requirements:

- to collect or contain the hazardous substance;
- to conduct the task away from the worker; and
- to keep exposures below relevant occupational exposure limits.

It would be impossible for this guide to cover all substances hazardous to health. It will, however, address three major aspects of the issue.

a) Pesticides – Storage, use and disposal

Pesticides, as defined in The International Code of Conduct on Pesticide Management (2014), published by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO), "means any substance, or mixture of substances of chemical or biological ingredients intended for repelling, destroying or controlling any pest, or regulating plant growth". Three common types of pesticides are used: herbicides, fungicides and insecticides. This guide will use the overarching term "pesticide" to cover all of these categories.

Pesticides are hazardous and result, annually, in many unintentional pesticide poisonings;[21] sadly, there are also a large number of intentional poisonings. The users of pesticides must therefore establish, through risk assessments, what risk control measures they must take to reduce the risk generated by the storage, use and disposal of pesticides. The most effective risk control measure would obviously be to eliminate their use. But this may not always be feasible, and it is worth studying the possibility of substitution; could a safer alternative be used?

21 Based on a systematic literature review, supplemented by mortality data from the WHO, the authors estimated that unintentional pesticide poisoning results in approximately 11,000 fatalities annually worldwide. See: Wolfgang Boedeker et al., *"The global distribution of acute unintentional pesticide poisoning: estimations based on a systematic review"*, in BMC Public Health, 20, 1877 (2020).

Inspectors may provide users of pesticides with information related to Integrated Pesticide Management[22] (IPM). IPM is the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations. It combines biological, chemical, physical and crop specific (cultural) management strategies and practices to grow healthy crops and minimize the use of pesticides, reducing or minimizing risks posed by pesticides to human health and the environment for sustainable pest management.

Figure 7. A pesticide store.

Source: ILO, Myanmar.

If the elimination or substitution of pesticides are not possible, then engineering controls, administrative controls and PPE will be required to reduce the risk. The controls used will depend on the way in which the pesticides are applied, but a mixture of them will probably be necessary when addressing their storage, use and disposal (this guide will not address the manufacture of pesticides, or their delivery to the undertaking).

When inspecting pesticide stores, such as the one shown in Figure 7, inspectors will need to ensure that the store complies with national legislation/guidance.[23] If the legislation is silent on the matter, inspectors might wish to consider the following:

- Location of store; is it a suitable distance from inhabited dwellings, stockyards, watercourses, floodplains, etc.?
- Is the store secure to prevent unauthorised access? Many smallholders store pesticides and application equipment in domestic premises and, should this happen, children may be tempted to handle containers/equipment and become contaminated;
- Are all pesticides stored in their original labelled containers to show their contents and clearly communicate their hazard, in line with the GHS? Figure 7 clearly shows that other containers (e.g., old drink bottles) are being used. This should not happen as there is an increased risk of children and others not being aware of the actual contents and perhaps drinking the contents, which may have devastating results;
- Is the store capable of containing any spillage if a container should leak? A non-porous floor or drip trays would help. It is also useful to have equipment on the spot that can help clean/absorb spills, such as a brush, bucket of sand, wood dust, etc.;
- Are powder/pellets stored above the liquids? This is a good practice to ensure that in the event of a leak, other products are not damaged;
- Is the store protected from the weather? Sunlight can damage the container, and pesticides should be protected from frost;
- What is the standard of housekeeping in the store? Packaging material should be removed, and products should be rotated to ensure that old products are used up first, etc.;
- Is the ventilation adequate to ensure that there is no build-up of chemical vapours?

22 For further information on IPM see: *FAO, Pest and Pesticide Management*, accessed 25 August 2021.
23 Tasmanian Government, Australia: *On-farm Pesticide Storage*; HSE: *Guidance on storing pesticides for farmers and other professional users*, (United Kingdom), accessed 25 August 2021.

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Figure 8. A worker mixing pesticides using a low-level induction bowl placed at an appropriate height.

Source: Code of practice for using plant protection products [24]

Having decided to use a specific pesticide, users must ensure that the equipment with which they plan to apply it is maintained so that it is safe to use (leaking equipment poses an increased risk for the operator). It is also vital to make sure that application rates are respected and that drift (where the pesticide does not remain in the intended target area) is minimized. The pesticide has to be mixed to the required concentration, which implies that there is a potential exposure to it (the hazard) when both mixing it and applying it. The level of risk to users and bystanders varies considerably depending on the working practices followed. Some of these are illustrated in the following Figures.

Once an undiluted pesticide is added to the induction bowl (Figure 8), water is added and the mixture is then transferred into the main tank. This reduces the need to lift and pour undiluted pesticides at head height. The worker is also wearing appropriate PPE comprising of a face shield to protect his face, nitrile gloves to protect his hands, and a disposable coverall (this is light and permeable to air and water vapour, although it still repels water-based liquids and aerosols) to protect the worker's body.

Figure 9. A worker in Myanmar mixing pesticides before application.

Excerpt taken from the ILO video: Myanmar: ILO makes ginger farming safer and more productive

Figure 9 illustrates a totally different level of risk, both for the worker involved and the children watching. The worker is filling a backpack sprayer without wearing any PPE, and if any spillage occurs during this mixing operation, he is likely to be exposed to a hazardous substance - as will the children nearby.

When filling handheld equipment, workers should ensure that:

- the outside of any backpack used does not become contaminated;
- the spray tank is not overfilled;
- the filler cap is correctly and firmly placed in position; and
- measures are taken to prevent spillage (for example, by filling equipment within a portable drip tray or a 'bunded area' sealed off from the ground with raised edges).

24 *Code of practice for using plant protection products*, prepared jointly by the Department for Environment, Food and Rural Affairs (Defra), the Health and Safety Commission (HSC) and the National Assembly for Wales Environment, Planning and Countryside Department (UK).

Figure 10. A tractor-mounted sprayer applying a pesticide.

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In Figure 10, the worker is in a fully enclosed cab and unlikely to be exposed to the pesticide. However, others may be at risk if the pesticide is applied when the breeze/wind is too strong, causing the pesticide to drift away from the intended target area.

In Figure 11, the worker seems to carrying a homemade (reservoir) backpack containing the pesticide by using a strap tied around his head - which may lead to a musculoskeletal injury. He is also not using any PPE, so it is highly likely that he will be exposed to the pesticide being applied. If his clothes become contaminated, he will be in increased contact with the pesticide, prolonging his exposure to it. Furthermore, when he removes his clothing at home, other members of the household who may come into contact with it will also be at risk.

Figure 11. Worker spraying pesticide in Myanmar.

Excerpt taken from the ILO video: Myanmar: ILO makes ginger farming safer and more productive

Figures 12 (a) and (b). Workers applying pesticides to a cotton crop in Madagascar.

Source: ILO, Madagascar.

Figures 12 (a) and (b) depict a group of workers applying pesticides using motorized handheld equipment, which produces an aerosol. No PPE is being worn, and these workers are not only likely to be exposed to the pesticide contained in their own equipment but also to that being applied by their co-workers. Indeed, these workers were exposed to the pesticide, as may be seen in Figures 13 (a) and (b), which show the fluorescent marks on a worker's arms and face after using the application methods depicted in Figures 12(a) and (b) in a simulation exercise.

Figures 13 (a) and (b). Fluorescent marks showing a worker's exposure to his arm and face during a simulation exercise applying pesticides to a cotton crop.

Source: ILO, Madagascar.

Figure 14. A worker applying pesticides whilst wearing the appropriate PPE.

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It is unlikely that the worker depicted in Figure 14 will be exposed to pesticides when he is applying them in this manner. However, care is also required and workers should avoid working into the wind and contaminating themselves by walking through the crop or area that has just been treated - especially when working in a tall crop.

A number of countries may lack the appropriate PPE for workers to wear when applying pesticides; in others, different crop management techniques could be used (growing organic crops) to reduce the level of pesticides applied. In countries where the climate makes it uncomfortable for workers to wear PPE, growers could potentially identify a pesticide formulation that does not require the wearing of additional items of protective clothing - or apply the pesticide in the cooler hours of the day when it is more comfortable to wear PPE. Workers should not apply pesticides without wearing the appropriate PPE.

The suggested basic minimum requirements for applying pesticides are shown in Table 3.2. Operators should always read the label and follow the manufacturers' instructions for each pesticide.

Table 3.2. PPE for applying agricultural pesticides.

Activity	Coveralls and boots	Gloves	Face shield or goggles	Apron	Hood or hat	RPE*	Ear protect-tion	Notes
Handling unopened packs	√	√	O					
Mixing and filling spray tank. Unclassified pesticides	√	√	√	O	√			1
Mixing and filling spray tank. Harmful and irritating pesticides	√	√	√	√	√			1
Mixing and filling spray tank. WHO class I and II pesticides	√	√	√	√	√	√		2
Spraying downwards with hand-held lance	√	√			√			3
Spraying upwards with hand-held lance	√	√	√		√	O		4
Operator in cab	√							5
Tractor but no cab	√	√			√			
Mist blowers	√	√	√		√		√	4
Fogging in greenhouses and stores	√	√	√		√	√	√	4
Applying granules	√	√						2,6
Applying treated seeds	√	√				O		3
Changing nozzles	√	√		O				
Cleaning sprayers	√	√	O	√				
Cleaning PPE & RPE	√	√	O					
Disposing of waste	√	√						

Source: FAO/WHO. International Code of Conduct on Pesticide Management - Guidelines for personal protection when handling and applying pesticides, Annex 3 (Rome, 2020), accessed 25 August 2021.

*RPE (respiratory protective equipment) is used primarily when the majority of spray droplets are < 30 µm. It may be required in other circumstances, such as during use of dusts, especially in a confined space.

Notes:

1. Use induction hopper on tractor-mounted or larger sprayers or equivalent.
2. Use closed transfer system, if available, especially for highly toxic insecticides.
3. Hat required when walking in fields to protect from sunlight.
4. Endeavour to remain upwind of spray.
5. A cab should have a well-filtered air ventilation system, and cab windows should be closed.
6. Avoid applying dusts, and ensure that granules are not fractured into smaller dust particles by setting the applicator properly.

O Optional

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Inspectors should ensure that users of pesticides follow the instructions on the labels with regards to their disposal. Spraying equipment, such as that equipped with low-level induction bowls, may be fitted with container-rinsing equipment - and the manufacturer's instructions should be followed. If the proprietary equipment is not available and the labelling permits it, is good practice to triple rinse the pesticide container (away from waterways) and add the washings to the sprayer's reservoir. This not only ensures that the containers are as free from pesticide as possible but also helps to protect the environment. Once clean, the containers should be disposed of in accordance with national legislation. Pesticide containers should not be discarded and burnt in the field - and they should never be re-used as containers for storage of food or water.

b) Dusts

Exposure to crop or animal dust can result in occupationally induced asthma / other respiratory diseases / conjunctivitis (watery or prickly eyes) / itchy skin and skin rashes. In many instances, it is difficult to avoid exposure to the hazard in the crop drying process or when moving grain or bedding down and feeding stock. All of these procedures may result in dust being generated. If it is not possible to reduce workers' exposure to dust by mechanizing activities - for example by using tractors with cabs to sweep or move grain, or altering working practices such as damping down fodder for stock - they may need to wear respiratory protective equipment.

▶ Figures 15 (a) and (b). Workers involved in drying coffee beans, close-up of mask.

Source: ILO: Vision Zero Fund, Lao People's Democratic Republic.

Figures 15(a) and (b) show workers who are involved in the process of drying coffee beans in a dusty environment and wearing PPE. Figure 15(b) shows the close-up of the type of mask they are wearing, which looks more like a surgical mask than a respirator. This form of face covering - unlike a respirator - is unlikely to protect the workers from the dust they are working in, and the exposure level may cause respiratory disease.

If inspectors see that workers are exposed to dust or believe they are likely to be exposed to it, they will need to ensure that effective controls are in place to reduce the risk generated by the dust. If engineering controls or other controls are not present it is likely that they will need a respirator manufactured to a recognised standard (FFP 2/3, N95, KN95, P2, Korea 1st class, DS2)[25], as they are tight-fitting masks designed to create a facial seal, which, when worn correctly, will protect the wearer.

c) Other products

i) Workers who **harvest** plant products may be exposed to chemicals of which inspectors are unaware. For instance, workers harvesting celery without being suitable protected can be exposed to chemicals (in the plant sap) that react to sunlight and result in the worker suffering from phytophotodermatitis - a type of blistering, similar to sunburn. Celery is not the only horticultural crop that may cause this; other crops are (but not limited to) parsnips, carrots and parsley. Celery sap has also been known to cause rashes, allergic contact dermatitis, unrelated to sun exposure.

▶ Figure 16. Workers harvesting celery.

Source: ILO, Mexico.

An inspector looking at Figure 16 may believe that the gloves are being worn solely for hygiene reasons, but they are also serving as PPE. The nets worn over beards and hair are for hygiene purposes. However, the hats and scarfs are PPE as they are protecting the workers from sunlight, which can cause sunburn and skin cancers. It is important that inspectors look at the whole working process and understand why work activities are conducted in a certain way and the role of equipment in use.

25 3M Science. *Comparison of P2, FFP2, KN95, and N95 and Other Filtering Facepiece Respirator Classes* accessed 25 August 2021.

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ii) Fumes - e.g., engine exhausts and welding fume.

Other substances hazardous to health are fumes from engine exhausts and welding operations. Combustion engines should only be used in well-ventilated places so that the fumes are able to disperse before workers are exposed to them. In cases where this is not possible - for example, when needing to use a fork-lift truck (FLT) in a building/warehouse - employers should consider using a battery-operated FLT as these have zero emissions.

If inspectors come across diesel-powered FLTs being operated inside a building, they may wish to question why, given the increased risk. If gas-powered FLTs are being used, inspectors will want to ensure that the workplace is well-ventilated and verify that the FLT is being well-maintained as this will reduce emissions; however, the risk would be further reduced if a battery-powered FLT were used and this should be encouraged.

▶ Figure 17. A welding booth fitted with local exhaust ventilation, which extracts welding fume away from the operator. The booth is also fitted with screens to protect other persons in the vicinity from arc eye, which is an inflammation of the cornea, caused by ultraviolet radiation from the arc during welding.

Image courtesy of Institut des Ressources Industrielles - MEDEF Auvergne-Rhône-Alpes à Lyon

▶ Figure 18. Portable extraction equipment.

Image courtesy of Institut des Ressources Industrielles - MEDEF Auvergne-Rhône-Alpes à Lyon

Agricultural undertakings are often involved in constructing/repairing structures or maintaining equipment, and this often involves welding operations that generate fume. This welding fume is also hazardous to health, and risk control measures need to be put in place to ensure that it does not enter the breathing zone of those conducting these operations. Welding booths with local exhaust ventilation systems could be installed for small-scale operations (Figure 17), and portable extraction systems might be used for larger operations (Figure 18), whenever feasible. If these engineering controls are lacking, consideration could be given to using welding helmets, which incorporate eye protection and built-in respiratory protection.

3.3.4.2 Safe vehicle operations

As previously stated, Convention No. 129 defines the term agricultural undertaking to mean undertakings and parts of undertakings engaged in cultivation, animal husbandry including livestock production and care, forestry, horticulture, the primary processing of agricultural products by the operator of the holding or any other form of agricultural activity.

This means a vast range of different vehicles may be used at agricultural production sites or during the primary processing of agricultural products: vehicles to transport workers and harvested products, farming and harvesting equipment, fork-lift trucks and other material handling equipment.

▶ Figure 19. Transporting workers involved in the coffee harvest. These workers are at risk because there is no support to ensure they do not fall as compared to Figure 21.

Source: ILO, Lao People's Democratic Republic.

▶ Figure 20. A forestry logging vehicle (forwarder).

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The risks when operating vehicles are not only generated by the vehicle itself but also by the equipment powered by the vehicle (which is covered in section 3.3.4.5.). Accidents are commonly caused by moving or overturning vehicles, as well as by transported products or drivers/passengers falling from moving or stationary vehicles. With regards to moving vehicles, it is not only the driver who may be at risk but also passengers and pedestrians.

When inspectors are attempting to reduce risks from vehicles, they would be well advised to address four areas, namely:

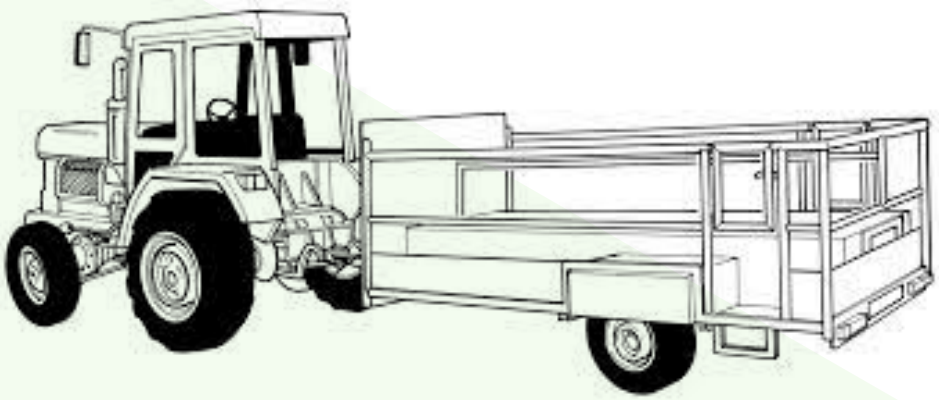
- Safe stop
- Safe vehicle
- Safe driver
- Safe site

Safe stop: Many workers are injured when drivers leave their vehicles in an unsafe condition. Before they move away from their vehicles, they should check that they have applied the brakes (handbrake) properly, as failing to do so may mean that the vehicle is free to move and may run over persons in the vicinity. Any equipment coupled to the vehicle should be lowered to the ground – to prevent uncontrolled decent; the controls should be left in neutral, the engine should be switched off, and the key removed or the power supply locked off, to prevent unauthorized start-up.

These actions should be taken before the driver leaves the operating position, when anyone else approaches, and before any maintenance activities are carried out.

Safe vehicle: Inspectors should ensure that the vehicle is suitable for the purpose for which it is being used and is being maintained in an efficient state and working order. Particular attention should be paid to the braking systems and reversing aids (mirrors and, where fitted, reversing cameras). Where there is a risk of rollover, the vehicle should be fitted with a rollover protective structure (ROPS) and a seat belt. They should check that the steps and handholds enable safe access and egress for vehicle operators and authorized passengers, and that loads carried on the vehicle are secure and remain in place during transport. Vehicles transporting passengers should be designed for that purpose and measures should be in place to ensure passenger security, thereby guaranteeing they remain on the vehicle and arrive safely at their destination (Figure 21). For example, it should not be possible for the driver or a passenger to come into contact with the wheels (or tracks) from any position they may be riding in (i.e., in either the towing or towed vehicle).

Figure 21. A trailer with seating and back supports to ensure that passengers remain within the trailer during transportation.



Source: Carrying passengers on farm trailers, HSE (UK).

Safe driver: As with all equipment, operators (drivers) need to be informed, instructed and trained so to ensure they are able to operate their vehicles safely. This training should cover all aspects of **Safe stop** (above), vehicle manoeuvring (encompassing forward and reversing operations), as well as all other operations - such as coupling implements / trailers, loading and unloading, and sheeting operations. In some situations, drivers will need to be in possession of a licence for certain road-going vehicles, in accordance with national legislation. However, the fact that a driver has a licence for a specific vehicle, such as a car, does not mean that they are competent to operate other vehicles, as specific training is required, for example, for the operation of a fork-lift truck or harvesting machinery.

All drivers must be medically fit to operate the vehicle and supervised as necessary. The level of supervision required will depend on the individual driver's experience and the findings of workplace inspections.

Safe site: As mentioned above, the diverse nature of agricultural undertakings gives rises to a wide variety of sites where vehicles operate in significantly different ways. Nonetheless efforts should be made to ensure that the circulation of pedestrians and vehicles should, as far as is reasonably practicable, be kept separate; where this is not possible, high visibility clothing should be worn to enable pedestrians to be seen more easily by drivers.

Traffic routes should be well maintained to reduce the risk of vehicles overturning, and wide enough for the intended vehicles. Site safety rules should cover traffic flow using one-way systems whenever possible, and speed limits should be set and enforced. These rules should also cover site reversing procedures (the need for reversing alarms / reversing cameras, banksperson, high visibility clothing), encompassing whenever possible the use of turning areas. Those in control of the site should ensure that visiting drivers are made aware of the site rules.

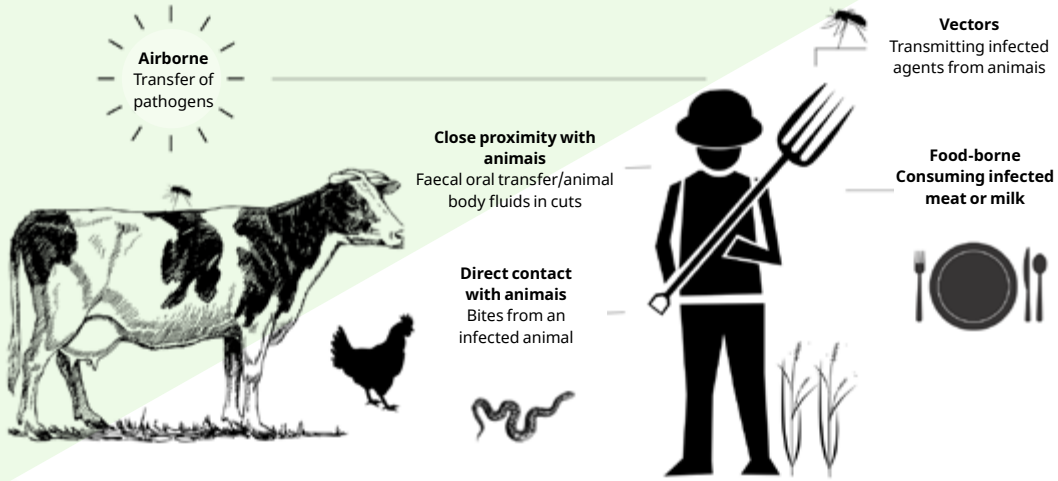
Inspectors should also verify that safe systems of work have been identified for loading and unloading operations, making sure, amongst other things, that there is sufficient space for safe vehicle movement; pedestrian segregation; and safe access and egress to platforms/loading bays. They should also check that any electrical risks - for example from overhead power lines – have been addressed.

Further information is available in the Vehicles in the workplace section of the ILO online publication: Occupational Safety and Health – A Guide for Labour Inspectors and other stakeholders.

3.3.4.3 *Injury or disease caused by an animal*

A zoonosis (zoonoses), also known as a zoonotic disease, is any disease that is transmitted from animals to humans.[26] These diseases are caused by bacterial, viral or parasitic pathogens – or fungi - that are carried by animals and then spread to humans. Examples of zoonoses may be found in the ILO Code of Practice on Safety and Health in Agriculture.[27]

Figure 22. The way in which zoonotic diseases are transmitted



Zoonoses are common when people are in close contact with animals and ineffective measures have been taken to prevent infection. Zoonoses contracted at work are called *occupational zoonoses*.

Those working in the agricultural sector (including farmers), animal husbandry, slaughterhouses and veterinary medicine, as well as animal care workers, are at a higher risk of occupational zoonoses.

Workers in close contact with animals should follow safe working systems and procedures, including safe animal handling and basic hygiene and sanitation practices.

One of the most effective measures to prevent the transmission of infection diseases is immunization. Several vaccines for zoonoses are available and have been shown to be effective to protect humans, namely Salmonella, Rabies and Avian influenza vaccines.

Inspectors will need to ensure that effective prevention and control measures are in place whenever workers are in contact with animals or animal products. Employers and workers should both be involved in identifying these measures, which will differ for each pathogen and should therefore be tailored to the situation in each undertaking, depending on the exposure to and prevalence of disease.

26 WHO: *Zoonoses* accessed 25 August 2021.
27 The *ILO Code of Practice on Safety and Health in Agriculture* (2011) explores zoonoses as being a potential biological hazard (Chapter 11.4). While there are a number of international labour standards covering safety and health for workers with a potential exposure to biological substances, the Anthrax Prevention Recommendation, 1919 (No. 3) is the only one that deals with a specific agent.

Examples of these prevention and control measures include:

Safety information, including warning signs and training for those workers handling animals.

All workers involved in animal handling should receive training and information regarding potential hazards and standard work procedures. For example, to prevent food and waterborne diseases, no food or drink should be allowed in areas where animals are present. Another example is training for farm workers in areas where snakebites are common. They should be taught the importance of using a torch, wearing suitable footwear, using a stick whenever they are in fields, and avoiding sleeping on the ground.

Livestock management procedures/areas.

All workers should be instructed in safety measures for the treatment of sick animals and the handling and disposal of carcasses of infected animals, including the cleaning and disinfection of contaminated premises. Sick (infected) animals should be separated (isolated) from the healthy ones. If separation is not possible, the sick animals should be tied at one part of the shed, as far as possible from the healthy ones.

▶ Figure 23. A worker using PPE – clothing and gloves should be provided by the employer.

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Personal Protective Equipment (PPE): Gloves, coveralls, boots, masks, googles.

The use of PPE is recommended for workers handling animals in order to reduce exposure to potential hazards. Employers should ensure they provide workers with the appropriate PPE, as well as information, instruction and training on the correct way to use it.

▶ Figure 24. Sign providing information to visitors on hand washing.

Source: Industry Code of Practice "Preventing or controlling ill health from animal contact at visitor attractions".

Hand washing facilities

Hand washing facilities must be provided in agricultural undertakings, as well as clean drinking water (see section 3.3.3.10). On premises open to the public, it is a good idea to place a sign reminding visitors to wash their hands after contact with animals.

Cleaning and the use of an appropriate disinfectant.

Cleaning and disinfection play an important role in the prevention of infectious diseases, including zoonoses. Methods for cleaning and disinfection and the choice of disinfectant should follow product manufacturers' instructions to ensure the effective removal of pathogen microorganisms. *The WHO Guidelines*[28] *on disinfection in animal husbandry for prevention and control of zoonotic diseases* provide further information on the subject.

Figure 25. Mosquito-borne diseases are common in agricultural undertakings.

© Istock / anatchant

The use of insecticides to control insect transmission (e.g., mosquitos).

The use of insecticides to control insect numbers - thereby reducing transmission – should comply with the procedures for pesticide handling.

Waste disposal: Proper disposal or prompt treatment of animal waste and carcases.

Waste from livestock activities include solid waste (e.g., manure and other organic materials), wastewater (e.g., urine and wash water) or air pollutants (odours). This waste needs to be managed to eliminate hazards which have the potential to cause illnesses, including foodborne and waterborne diseases. In addition, agricultural waste can also contaminate the environment, causing the degradation of surrounding ecosystem and altering natural diversity, or even further contaminating groundwater (air, soil and water pollution).

Workers dealing with waste management should wear appropriate PPE to prevent exposure to hazards.

28 WHO: *Guidelines on disinfection in animal husbandry for prevention and control of zoonotic diseases* (Geneva, 1984), accessed 25 August 2021.

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3.3.4.4 COVID-19

COVID-19 is a disease caused by a new coronavirus called SARS-CoV-2. This virus causes serious respiratory disease and may be deadly for older people and those with a weakened immune system. The disease spread across the world and was declared as a pandemic in 2020 and affected all aspects of life.

The virus can spread from an infected person in small liquid particles (aerosols or droplets) when they cough, sneeze, speak, sing or breath. It spreads mainly between people who are in close contact with each other (typically within 1 metre). A person can be infected when aerosols or droplets containing the virus are inhaled or come directly into contact with the eyes, nose, or mouth. It can also spread in poorly ventilated and/or crowded indoor settings, as the infected aerosols remain suspended in the air. People may also become infected by touching surfaces that have been contaminated by the virus and then touching their eyes, nose or mouth without cleaning their hands.

The agri-food sector has been designated as one of the essential sectors in the context of the COVID-19 pandemic crisis. This means that agricultural workers, among others, continue working to ensure the continuity of functions critical to national security (in this case to securing the food supply). A number of factors that might increase the risks for COVID-19 in the agri-food sector include: close and/or prolonged contact between workers, in the fields and indoors, shared transportation or living quarters; crowded accommodation; and poor access to clean water for hygiene purposes throughout the day.

Employers should assess the risk of workers catching COVID-19 and adopt preventive and protective measures. Inspectors will need to verify that suitable control measures are in place to reduce the workers' risk of catching COVID-19. Control measures to reduce the risk of COVID-19 and stop the spread of this virus (and other respiratory viruses) include:

- Maintaining a safe distance in accordance with national legislation (normally at least 1 metre) between workers (physical distancing). This may be achieved by staggering shifts, space planning workstations, or limiting the number of staff in an area at any one time;
- Ensuring adequate ventilation of workspaces;
- Developing sanitation protocols, as well as regularly cleaning and disinfecting work areas, equipment, tools, and common areas;
- Providing additional wash stations and encouraging workers to regularly wash their hands with soap and water for at least 20 seconds; if their hands are not visibly dirty, workers can use hand sanitizer containing 60 per cent alcohol;
- Screening and monitoring workers for COVID signs and symptoms (fever or any respiratory symptoms);
- Managing sick workers immediately by separating them from other workers at the workplace and consulting the medical/public health office;
- Continuing to reassess the situation and following guidance from the local authorities;
- Reviewing sick leave policies, making sure that ill or quarantining workers are not penalized for taking sick leave;
- Keeping communication open, and training workers on COVID-19, handwashing procedures, cough and sneeze etiquette, and employer policies;
- Using appropriate PPE;
- Providing appropriate supervision to ensure compliance with the above-listed controls.

3.3.4.5 Machinery and work equipment

Workers at agricultural undertakings use a wide variety of both powered and manually-operated machinery/equipment - for example, soil cultivation, sowing and harvesting equipment; dryers; chainsaws; scythes; tipping trailers; and sac and wheelbarrows. This machinery has rotating components, sharp-cutting edges, transmission belts and chain drives, feed rollers and gear drives, which, unless properly guarded, pose a serious risk of amputation, crushing or entanglement that may result in severe disability or death.

Manufacturers, when designing equipment, should ensure that access to all dangerous parts of the machines is prevented, so far as is practicable, by suitable guards. It is also good practice for manufactures to address foreseeable misuse and ensure that workers are not exposed to risk.

Employers must ensure that all workers have received the appropriate information, instruction and training to guarantee that safe systems of work are followed at all times to prevent occupational accidents or disease. And it is the inspectors' role to verify that the workers and supervisors have received suitable OSH training. If inspectors witness an activity that they deem unsafe, they should not only follow the inspectorate's enforcement policy but also ascertain why the worker(s) was/were prepared to operate the machine/equipment in this manner. A trained competent person[29] who fully understands the hazards and risks would not be expected to operate a machine in an unsafe manner.

When looking at machinery, inspectors will be looking out, inter alia, for rotating components, sharp cutting edges, transmission belts and chain drives, feed rolls and gear drives to ensure that they are suitably guarded to prevent workers from accidently coming into contact with them in both the normal working situation and when machinery is undergoing maintenance.

National legislation will usually determine the level of guarding required - and modern legislation, due to the ever-changing developments in machinery, is usually risk-based. One example of this is the Provision and Use of Work Equipment Regulations 1998,[30] Regulation 11 (HSE, United Kingdom):

(1) Every employer shall ensure that measures are taken in accordance with paragraph (2) which are effective—

(a) to prevent access to any dangerous part of machinery or to any rotating stock-bar; or

(b) to stop the movement of any dangerous part of machinery or rotating stock-bar before any part of a person enters a danger zone.

(2) The measures required by paragraph (1) shall consist of—

(a) the provision of fixed guards enclosing every dangerous part or rotating stock-bar where and to the extent that it is practicable to do so, but where or to the extent that it is not, then

(b) the provision of other guards or protection devices where and to the extent that it is practicable to do so, but where or to the extent that it is not, then

(c) the provision of jigs, holders, push-sticks or similar protection appliances used in conjunction with the machinery where and to the extent that it is practicable to do so, and the provision of such information, instruction, training and supervision as is necessary.

29 ILO: *Guidelines on OSH management systems ILO-OSH (2001)* define a competent person as a person with suitable training, sufficient knowledge, experience and skill, for the performance of the specific work.
30 Further examples of legislation on this matter include: INRS (France): *Prévention des risques mécaniques des équipements de travail* ; and Spain : Real Decreto *1215/1997- Equipos de trabajo. Disposiciones mínimas de seguridad y de salud*.

(3) All guards and protection devices provided under sub-paragraphs (a) or (b) of paragraph (2) shall—

(a) be suitable for the purpose for which they are provided;

(b) be of good construction, sound material and adequate strength;

(c) be maintained in an efficient state, in efficient working order and in good repair;

(d) not give rise to any increased risk to health or safety;

(e) not be easily bypassed or disabled;

(f) be situated at sufficient distance from the danger zone;

(g) not unduly restrict the view of the operating cycle of the machinery, where such a view is necessary;

(h) be so constructed or adapted that they allow operations necessary to fit or replace parts and for maintenance work, restricting access so that it is allowed only to the area where the work is to be carried out and, if possible, without having to dismantle the guard or protection device.

If national legislation is silent on this aspect of guarding machinery, inspectors should follow the principles cited above when inspecting equipment and working practices and provide advice accordingly. In this way, safe systems of work will be developed.

▶ Figure 26. A worker preparing a paddy field for rice planting.

Source: ILO.

Figure 26 shows a worker preparing a paddy field before planting rice using powered equipment. Within the red oval we see unguarded transmission equipment - belt and pulley drives. In this particular case, the risk may be low due to the distance between the dangerous part of the machinery and the operator. However, in many examples of transmission equipment the worker is considerably closer to the machine and thus guarding should be present. The inspector would note that within the yellow rectangle, there are components that interact with the soil. As the worker is walking behind the machine, an inspector should consider whether the likelihood of entanglement could be reduced by further guarding.

Figure 27. A petrol-driven rotavator.

Source: ILO.

In comparison to the equipment shown in Figure 26, Figure 27 depicts a petrol-driven pedestrian-operated rotavator, which carries out a similar operation, i.e., turning over the soil. On this machine, however, the transmission equipment is guarded (red oval), and the soil-incorporating parts are also guarded - preventing access from above (yellow rectangle) and access from the rear, where the operator would stand (blue circle). In normal operating conditions, the rear guard (blue circle) can be lowered closer to the ground, further restricting access to the soil-incorporating parts and preventing any objects that might fly up and strike the operator.

Figure 28 depicts a cotton-carding machine. On the line we can clearly see several belt and pulley drives with the associated in-running nip points (red circle) (where the belt passes over the pulley), creating an area where a worker can become entangled. Other danger areas are where the rollers rotate in different directions (blue circle), which again create trap points. We may see from the image that some efforts have been made to prevent access to the machinery, but an inspector would have to determine whether these are adequate.

Figure 28. Cotton-carding machine.

Source: ILO, Madagascar.

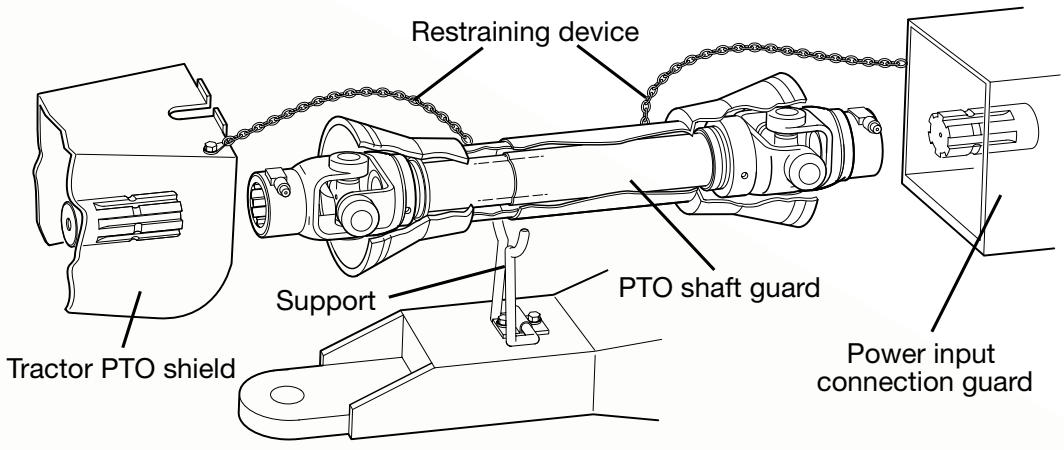
In making this determination, the inspector must decide whether access to the danger zones has been prevented. It may be observed that there are rails in this particular case, but they are not continuous and could be bypassed by the workers and the danger zones accessed. Even if the rails were continuous, somebody could climb over the rails or reach through them - and thus access to the danger zones has not been prevented. It should be difficult to break through guards, but in this particular case somebody could easily climb them, or even pass or reach through them. The inspector would therefore be expected to take action to ensure that the machine poses no danger to operators or any bystanders.

▶ Figure 29. Guarded power take-off shaft coupled to a tractor and the implement.

Source: Farmwise, HSE (UK).

On many undertakings, much of the machinery - for example, generators, irrigation pumps, cultivation and harvesting, mowing and baling equipment - is powered by means of power take-off (PTO) shafts coupled to tractors. When these shafts operate at their full recommended speeds, they rotate at 540 or 1,000 revolutions per minute, which equates to the shafts rotating nine or 16.6 times per second, respectively. At these speeds, workers do not have time to react if they or their clothing become entangled in the shafts, which must be appropriately guarded (as seen in Figures 29 & 30) to avoid fatal or serious injuries.

▶ Figure 30. Guarding components for PTO systems.



Source: Power take-offs and power take-off drive shafts, HSE (UK).

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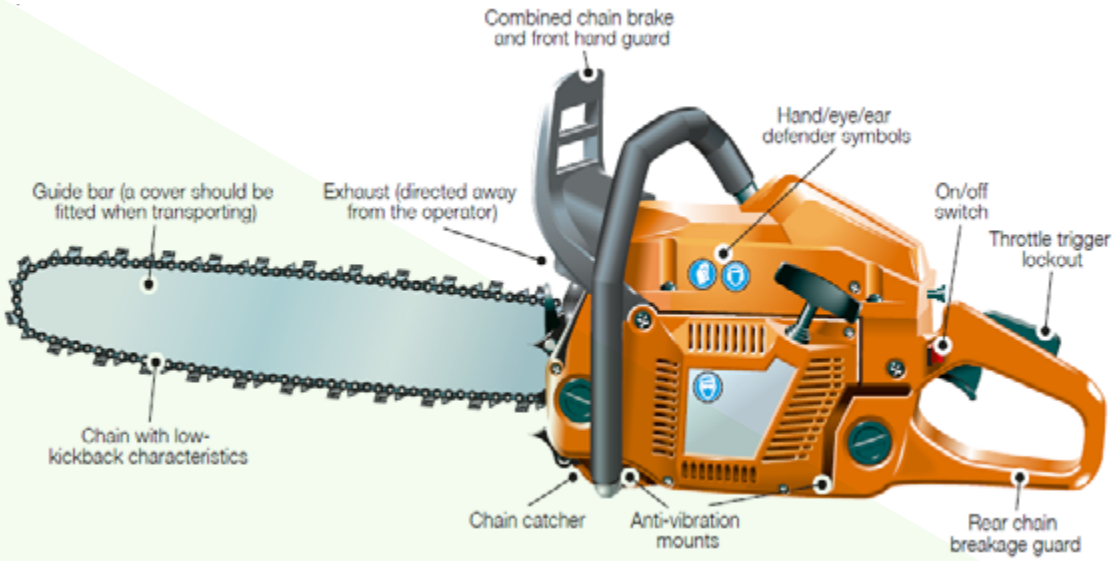
Another example of equipment seen on agricultural undertakings is a chainsaw, used for felling trees and sizing planks/logs, etc. Although this is an extremely dangerous piece of equipment, the risk is considerable reduced if it is well maintained and used by competent operators in a safe manner. When coming across this type of equipment, inspectors might want to ask the operator to verify that the chain brake is operating effectively.

The chain brake is a safety device that is automatically activated in the case of kickback (sudden and uncontrollable upward movement of the chainsaw's guide bar). It immediately stops the movement of the chain, thus reducing the likelihood of it striking the operator. A trained competent operator should know how to verify that the chain brake is functioning properly, and should do so on a daily basis at least.

Figure 31 shows the safety features on a chainsaw which, according to international best practice, should be in place. However, those operating chainsaws should also wear appropriate PPE due to the risks that arise when operating chainsaws. This includes leg protection and chainsaw boots that resist cutting or cause the chain to stop, thus protecting the operators from accidentally coming into contact with the chain; a good pair of gloves to ensure a sound grip; and protection against cuts. Ear and eye protection is also important due to the noise level and flying debris that is generated when operating the saw. These can be mounted on a helmet that not only protects the operator's head but also enables her/him to be more visible.

▶ Figure 31. Safety features on a chainsaw.



Source: Farmwise, HSE (UK).

Figure 32. A chainsaw operator wearing appropriate PPE.

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3.3.4.6 Weather

Agricultural workers, like all people who work outdoors, are exposed to weather conditions - i.e., both hot and cold temperatures as well as UV (ultraviolet light) radiation. While a safe working temperature indoors can be controlled, it is not possible for the outdoor working environment.

The effects of exposure to heat and cold vary from an unpleasant sensation to decreased performance (physical and cognitive), illnesses and mortality. While a person's body's coping mechanism can overcome the exposure to a certain limit, it can be overwhelmed by extreme (hot and cold) temperatures, leading to conditions that are more serious.

Excessive heat may cause heat stress, heat cramps, heat exhaustion, heatstroke and death, while excessive cold (cold stress) may cause frostbite, trench foot and hypothermia. Ultraviolet light (UV) radiation can also cause damage to the skin (a risk factor for skin cancer and premature skin lesion) and eyes (cataracts).

Inspectors should verify that employers provide prevention and control measures for workers who are exposed to heat, cold and UV light hazards.[31] In agricultural undertakings, employers should first recognize heat and cold stress as potential hazards. While it is not possible to control the source, additional equipment may help in preventing injury. Another alternative is to move the workplace inside, whenever possible.

31 ILO: *Code of practice on ambient factors in the workplace* (2001), Chapter 8; and ILO: *Code of practice on safety and health in agriculture* (2010), Chapter 17, provide specific information for employers on dealing with heat and cold hazards.

Barriers/shade/shields will protect workers against weather conditions, either heat, cold or UV light. Protection may also take the form of a rest area that provides shade for agricultural workers (Figure 33).

For hydration maintenance, it is necessary to provide a close source of potable water or arrange for drinks to be brought to the workers. This measure is not only essential in hot weather, as access to hot drinks in cold weather is an effective way of cutting the risk of cold stress.

Figure 33. A trailer fitted with benches and a sunshade enables workers to rest in comfort.

Photograph by Joe Proudman / UC Davis

Inspectors should also ensure that employers have considered whether workers have the appropriate PPE for the hazards present in the workplace, and have not introduced any additional risks of heat or cold stress. Industrial clothing or certain clothing combinations are often thick and heavy, or semi-permeable or impermeable, leaving little room for heat to escape and for cool air to enter – thus causing heat stress. Employers should rather consider water-cooled garments, or air-cooled garments and other types of clothing, which protect workers from heat exposure.

In cold/wet weather, workers should wear proper insulated clothing, which may consist of an inner layer of clothing to absorb moisture and transport moisture away from the body's surface, a second layer with insulation, and finally an outer layer that is waterproof, windproof and durable. Proper headgear, foot, toes and hand protection are also important to protect against heat loss.

Finally, employers should provide information and education for workers,[32] and modify/control their tasks. They should restrict the time that workers are exposed to heat or cold (job rotation, regular breaks), and control the amount of work that they are expected to do. A "buddy system" is recommended to reduce risks due to the weather.

32 HSE (UK), 2019: *Keep your top on. Health risks from working in the sun* accessed 25 August 2021.

3.3.4.7 Working at height - preventing falls

Falls from height are not only a cause of fatalities and serious accidents in the construction sector but also on agricultural undertakings, where they can occur from roofs, glasshouses, lofts, ladders, trees, vehicles, stacks of produce, machinery, etc. Inspectors will want to ensure that before work activities are carried out, employers and workers have discussed the work activity and identified suitable risk control measures to be put in place to reduce the risk of a fall - and thus an accident from happening.

For instance, they might discuss whether work at height can be avoided. If this is not possible, employers should, so far as is reasonably practicable, prevent falls using either an existing place of work that is already safe or the right type of equipment. For example, rather than workers standing in the bucket of a material handler as seen in Figure 34, workers should use a purpose-built working platform fitted with an edge protection that is securely attached to a mobile plant, as depicted in Figure 35.

▶ Figure 34. Unsafe practice when working at height as there is no fall protection in place.

Source: ILO.

When using ladders, it should first be ascertained whether the employers/workers have identified the need for a pre-use check, and whether all the users have been trained. Before using a ladder, workers should carry out a check themselves, verifying the overall condition of the ladder, the stiles, the feet, the rungs, any locking mechanism, etc. They should also make sure that the ladder is secure (to prevent slipping/overturning) and supported at the correct angle.[33]

▶ Figure 35. Working platform on a mobile plant with 360° edge protection.

Source: APS Equipment Otara, Auckland NZ.

33 The ladder association and HSE LA455 Safe Use of Ladders and Stepladders - a brief guide https://ladderassociation.org.uk/la455/ accessed 20 October 2021

Where work is regularly conducted at height - to inspect equipment or maintain conveyors, for instance - employers should consider installing permanent working platforms fitted with edge protection to prevent falls, as well as safe means of access and egress. For example, Figure 36 clearly shows red and yellow platforms fitted with guard rails. If maintenance work is carried out on the platforms, it is good practice to install a toe board to prevent tools / equipment falling from the platform and possibly striking persons below.

Figure 36. Guardrails fitted to platforms to prevent workers from falling.

Source: ILO, Lao People's Democratic Republic.

In some situations, it will, in the short term, be impossible to avoid the need to work at height (for example, harvesting lychees from old well-established trees) and control measures will be needed to reduce the risk of a fall. However, in the long term, tree management through pruning may mean that the tree height/health is controlled - thus reducing the need to work at height, but not resulting in lower yields.

Figure 37. Tree surgeon working off a rope and harness.

© Istock / Thomas-Soellner

When working on/in trees, risk control measures to prevent falls vary enormously depending on the work to be completed and the national situation. A mobile elevated working platform (MEWP) is particularly effective for working safely at height (Figure 38). If this is not possible, workers should be trained to use PPE in the form of a body harness and lanyard coupled to suitable anchor points (Figure 37).

▶ Figure 38. A worker using a MEWP to work safely at height.

© Istock / Luca Piccini Basile

In other situations - for example, the harvesting of coconuts does not take long for each tree - differing control measures are used. Workers may harvest from the ground, which totally removes the risk of falling from a tree; and over time the trees may be replaced with smaller varieties, thus eliminating the need to climb trees at all.

▶ Figure 39. A worker harvesting a coconut tree from the ground.

© Istock / Joa_Souza

However, in some cases, climbing aids (ladders) are fitted to trees to harvest the fruit (Figure 40).

Figure 40. A worker using a ladder fixed to a tree to gain access to the fruit.

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In other cases, workers use simple aids such as a rope between their feet to help them grip the tree when climbing (Figure 41).

Figure 41. A worker using a cord between his feet and free climbing to gain access.

© Istock / Chalabala

In both of these situations (Figures 40 and 41), there is a risk of workers falling. Measures have been taken to reduce the risk, but in the long term it might be expected that other control measures will be put in place to eliminate or further mitigate the risk.

Further general advice regarding working at height (the "Dos and Don'ts") may be found in the Working at height section of the Occupational Safety and Health - A Guide for Labour Inspectors and other stakeholders (ILO).

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3.3.4.8 Musculoskeletal disorders

Many of the injuries that occur in the workplace result from physical activities. The agricultural sector is by far the most affected. Related painful pathologies are steadily on the increase.

▶ Figure 42. A worker preparing agricultural land.

© Istock / okugawa

Constant back pain, shoulder pain and repetitive tendonitis are symptoms on the long list of musculoskeletal disorders (MSDs). Certain parts of the body such as the spine, shoulder, elbow, wrist, knees, ankles or feet are particularly affected by these MSDs, which target muscles, tendons and nerves. As they develop gradually, they may be diagnosed long after their onset and lead to a drastic limitation of their victims' professional capacities.

"Prevention is better than cure"! Inspectors should verify that appropriate risk control measures have been taken by the employer and are being followed by the worker to reduce risk.

a) Why is it important to take action on manual handling in agriculture?

Injuries due to manual handling (lifting, lowering, pushing, pulling, carrying loads) can have serious implications for both the employer and the worker who suffers from them. They can occur almost anywhere in the workplace, and the hard manual work that is particularly prevalent in agriculture - combined with poor posture, repetitive movements of arms, legs and back, as well as pre-existing injuries - can aggravate the situation.

▶ Figure 43. A worker carrying a 25kg. bag of cotton.

Source: ILO, Madagascar.

b) What are the main causes of MSDs in agriculture?

▶ Carrying heavy loads

Handling animals, as well as carrying heavy bales of hay or baskets filled with the fruits of the harvest, require a considerable muscular effort and increase the risk of injury. It is not possible to determine a safe weight that can be transported as this will depend on the size of the load, its weight, the distance it has to be carried, ground conditions, climatic conditions, and individual capabilities.

Figure 44. Cotton harvesting by hand.

Source: ILO, Madagascar.

Repetitive movements

The picking and packing of fruit, vegetables and seeds (Figure 44 shows the harvesting of cotton), the sorting of products on triage tables or on the ground, as well as the preparing of agricultural land (Figure 42), can all involve repeating the same movements over several hours. These repetitions can lead to musculoskeletal disorders.

The wrist (carpal tunnel syndrome) and the elbow (epicondylitis) are the parts of the body most sensitive to repetitive movements.

Figure 45. Cotton harvesting showing poor posture.

Source: ILO, Madagascar.

Poorly adapted postures

Certain activities - such as milking cows, market gardening, picking from low shrubs or pruning fruit trees – result in workers adopting strenuous postures throughout the day. Their joints may be in a stressful position over a long period of time. This is the case during fruit picking, when workers' arms are placed above the axis of their shoulders and they are in a constant bending position (Figure 45).

The workers' efforts and their repetitive movements lead to an increased risk of MSDs.

Figure 46. Farm worker operating a tractor potentially exposed to whole-body vibration.

© Istock / filmstudio

Exposure to vibration

Exposure to vibrations or impacts associated with driving agricultural equipment, such as tractors, is harmful to health.

Workers may be exposed to hand-arm vibration when operating tools - for example chainsaws - and whole-body vibration (WBV) when driving agricultural equipment. Of course, the risk of developing disease and MSD will obviously be contingent upon the level of intensity of and exposure to the vibration.

c) What are the first signs of MSDs?

The first signs	Painful joints, intense fatigue, reduced muscular strength and endurance, reduced range of motion, numbness.	
Phase 1	**Phase 2**	**Phase 3**
> Fatigue and pain during work > Disappearance of symptoms after work	> Symptoms reappearing during work > Symptoms lasting after work (sometimes at night)	> Symptoms during rest > Pain during sleep
Reversible state if immediate action is taken	**Urgent action must be taken without delay**	State that may already be **irreversible**

d) What is your risk of developing an MSD?

WORK SITUATION	YES	NO
1 You do the same task several hours in a row (picking, collecting, milking).	☐	☐
2 You handle loads of more than 15 kg (loads, materials, animals).	☐	☐
3 Your environment is uncomfortable (humidity, cold/hot).	☐	☐
4 You are exposed to vibrations over long periods of time (agricultural machinery).	☐	☐
5 You have a feeling of exhaustion.	☐	☐
6 You have pain in your elbow or fingers.	☐	☐
7 You have pain during activity, which may persist at night.	☐	☐

Tables adapted from MSA: Troubles musculosquelettiques, and INRS: Manutention manuelle

If workers have **a majority of yeses from questions 1 to 4,** it means they are at increased risk of a MSD. If they have a majority of yeses answers to **questions 5 to 7**, it means that they may have severe symptoms of MSDs and action is required.

e) What should employers and workers do?

The best response is to remove a task which generates MSD risks when it is not necessary. If these tasks are however necessary, the employer must try to prevent any injuries arising from them by alleviating to the extent possible the workers' exposure to vibration, repetitive movements and the carrying of heavy/ awkward loads.

▶ **Figure 47. A worker using powered secateurs.**

Source: Felco Switzerland https://www.felco-laden.ch/

One of the most effective responses will often be the mechanization of tasks: tractors to transport bales of hay, electric (powered) secateurs to prune vines, and wheelbarrows to help moving loads in a nursery or when planting an orchard, for example.

f) Risk assessment

Where manual handling activities cannot be avoided, the employer must assess, if possible beforehand, the risks to the safety and health of agricultural workers arising from handling operations and organize the workstations in such a way as to avoid or reduce risks, especially dorsal lumbar risks - in particular by providing workers with mechanical aids or, where these cannot be used, accessories to make their task safer and less arduous.

There are a number of factors that can make manual handling more strenuous:

- Load-related factors: weight, size and shape of the load; load located high or on the ground, or to be deposited at height;
- Factors related to the working place: presence of animals, cramped workplace, cluttered floor, poor condition, slippery surfaces, etc.;
- Ambient factors: cold (cold storage) or hot (outdoor) environment, bad weather, etc.; and
- Organizational factors: fast pace, repetitive movements, urgent work, shift work, night work (harvesting, crop treatments, milking, sowing, veterinary interventions, etc.).

The employer should involve the workers in the implementation of a prevention policy because they have "know-how" that can help reduce risks while allowing for production gains. An occupational physician should also be involved to ensure the workers' ability to carry loads and possibly impose restrictions.

g) An action plan should be implemented.

Depending on the predefined risk prioritization criteria, the following actions will have to be implemented to eliminate or limit the risks:

- Technical action: (mechanization, reduction of unit weight of loads, tool design, etc.).
- Organizational action: (flow modification, reduction of distances, unification or separation of tasks, allocation of more time for repetitive tasks, etc.).
- Human action: (gestures and postures training, task enrichment, empowerment, etc.).

Once introduced, these actions will have to be maintained, re-evaluated and adapted, which requires monitoring and a perpetuation of the approach.

Further information and other references can be found in ILO: Occupational Safety and Health - A guide for labour inspectors and other stakeholders (section on “Manual Handling”).

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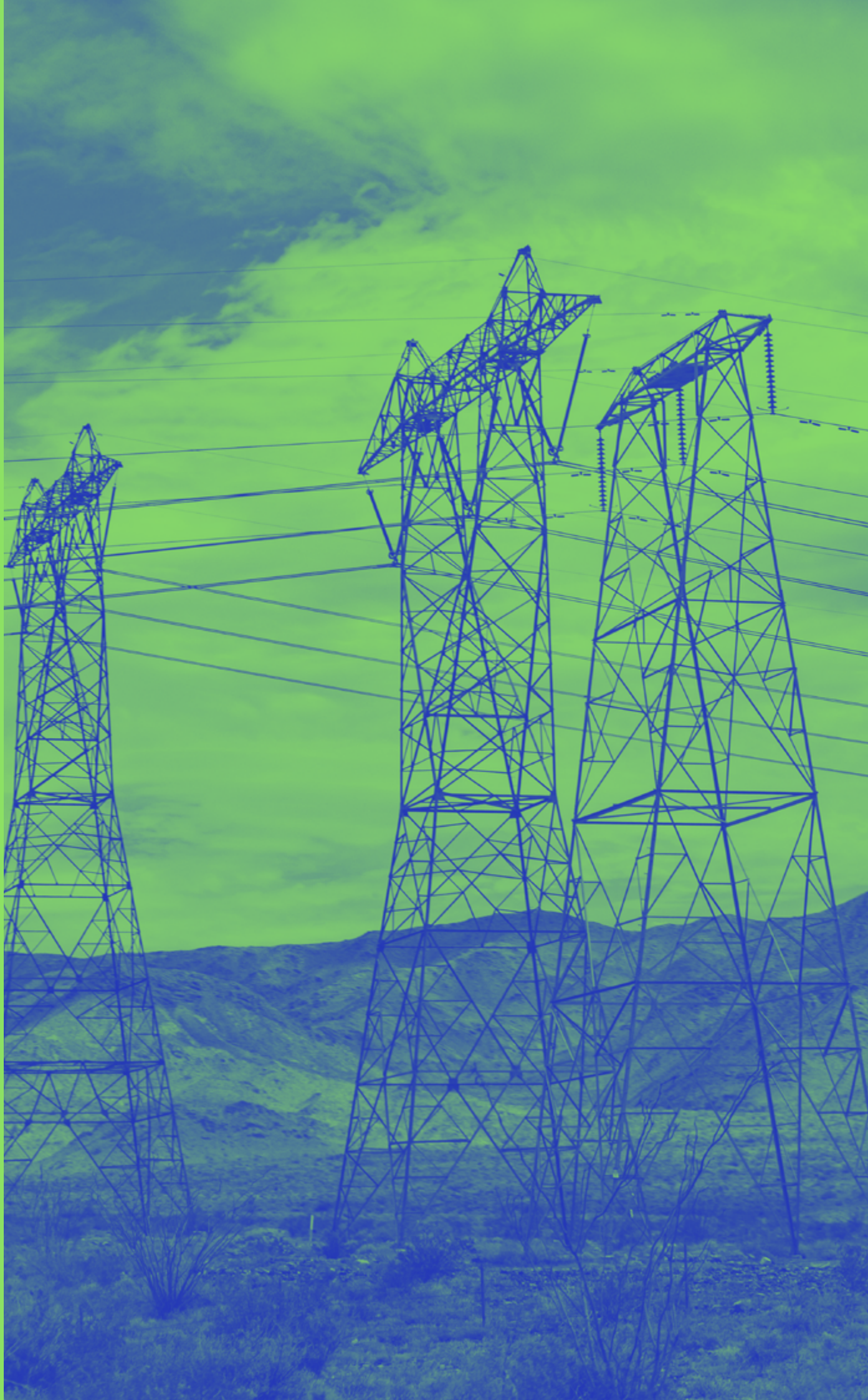

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3.3.4.9 Electricity

People working in agriculture are killed or seriously injured by electricity every year, but there are many more incidents that damage equipment and thousands of 'near-misses', any[34] of which could have had fatal consequences. In the United States, about 60 farm workers are electrocuted each year. Many of these involve contact with overhead power lines (OHPLs) and cause disruption and costs to farmers, other businesses and the community. Others are caused by poorly maintained portable electrical tools. Poor electrical installations and equipment can also ignite combustible material and cause fires, resulting in significant losses in buildings, equipment and livestock.

Before visiting an agricultural undertaking, an inspector should be aware of the national legislation on the requirements for electrical installations, the main hazards involved, and the responsibility of employers and the role of workers to prevent and control risks brought about by these hazards.

In the case of the United Kingdom, for example, the Electricity at Work Regulations 1989 require all electrical systems to be of such construction and to be maintained so far as is reasonably practicable to prevent danger; they also require all work activities, including the operation, use and maintenance of electrical systems, to be carried out in such a manner as not to give rise to danger - so far as is reasonably practicable.

Another potential risk is the use of electrical equipment in dusty, moist and corrosive environments such as livestock houses. This risk can be reduced by using waterproof, dust-proof, and even explosion-proof electrical equipment.

It is also recommendable to learn from international good practices. In accordance with the ILO Code of Practice on Safety and Health in Agriculture (2010): *Electrical installations should be designed to protect wiring from deterioration due to a corrosive or hot environment; protect wiring from rodents; incorporate ground fault circuit-breakers in wet or high humidity areas; isolate high voltage equipment; ensure that spark-free lighting, motors and equipment are used in areas exposed to flammable liquids; provide for lockout of all electrical systems; enable the safe inspection and maintenance of system components; and allow for the future expansion of voltage and amperage levels* (Chapter 14.3.2.10).

(a) Overhead power lines

OHPLs typically carry electricity at voltages from 11 kV to 400 kV. The lines are often uninsulated (bare) cables. The electricity can jump space when equipment or machinery comes close to the OHPL; furthermore, equipment and machines do not need to touch OHPLs for electricity to be conducted through them to earth. Anyone touching the equipment/machinery and the ground at the same time will receive an electric shock.

Although the minimum height of OHPLs may be adequate for most work activities, there are many agricultural machines or operations that are capable of touching or coming close to OHPLs including:

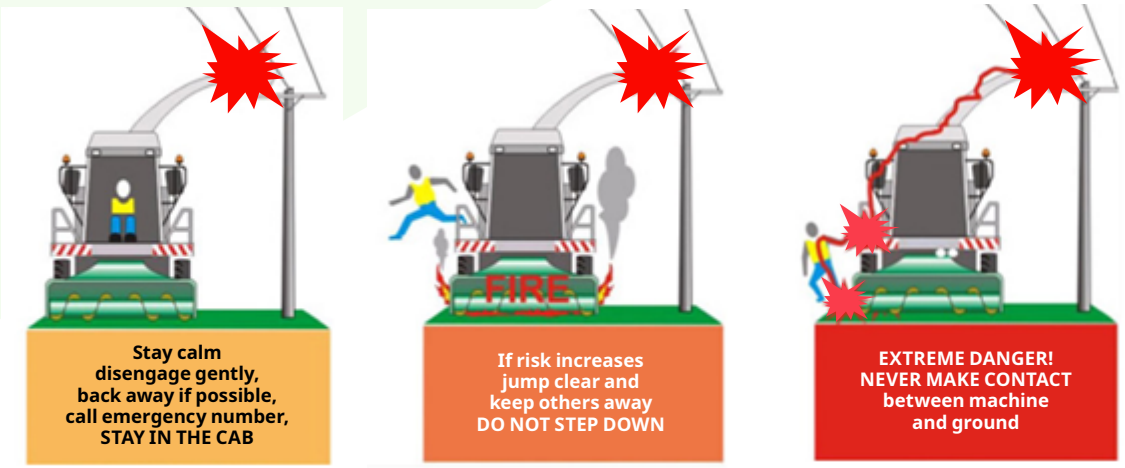
- rough terrain fork lift trucks and telescopic materials handlers;
- combine harvesters;
- self-propelled harvesters;
- crop sprayers;
- tractors and tractor-mounted fore end loaders
- workers carrying irrigation pipes or ladders.

Employers and workers must ensure that the above operations (not an exhaustive list) are not conducted within a horizontal distance of at least 10 m from OHPLs.

34 United States Occupational Safety and Health Administration (OSHA): *Youth in Agriculture eTool - Electrocution (osha.gov)*

When advising employers and workers on the prevention of electrocution risks, inspectors should advise them to do the following: First, refrain from conducting work operations under OHPLs - particularly where there is an increased chance of coming into close contact with the OHPL. Creating alternative access routes or work areas to avoid OHPLs is often the easiest and cheapest option. Second, where it is not possible to avoid working near OHPLs, the employer will need to carry out a risk assessment and implement a safe system of work (ideally making the lines dead), if necessary, in consultation with the power supply authority. Finally, after assessing the risks and planning on ways to carry out the work safely, the employer will need to make sure that anyone working near OHPLs with a machine or work equipment is provided with information about the hazards, risks and precautions to follow, including what to do if they contact the line.

▶ Figure 48. Actions required if machinery comes into contact with an OHPL.



Source: Health and Safety Authority, Ireland Overhead Power Lines. Copyright for image: Ireland Health & Safety Authority (subject to Government copyright according to the Copyright and Related Rights Act, 2000)

What if a vehicle contacts an OHPL?

An electrical current from high voltage lines can flow through a vehicle and energize the ground up to 30 metres away.

As shown in Figure 48, if a vehicle comes into contact with an OHPL, the person in the cab should stay in it, while asking for someone to immediately contact the local utility company to shut off the power and keeping others away. If the risk increases the operator may have to jump clear.

Workers should not allow any part of their body to touch the vehicle and the ground at the same time. If there is an emergency such as an electrical fire, they must leave the vehicle, jumping as far away from it as possible. They should then shuffle away from where they have jumped. To shuffle, they must not lift either foot completely, keeping them in contact with the ground at all times. They should shuffle away from the vehicle for at least 30 metres. Shuffling greatly reduces the current flow through the body from the ground.

(b) Portable electrical tools

The majority of electrical faults on portable electrical equipment can be identified by visual inspections (Figures 49 and 50). Inspectors can visually check cabling, plugs and sockets for damage and inappropriate connections. If these are visible, they can question the employer to ascertain why there seems to be a lack of appropriate control measures. They may also wish to question workers as to why they are prepared to use damaged equipment, as well as to learn what training they have received.

Figure 49. Damaged electrical sockets.

Source: ILO.

Figure 50. A poor example of an electrical cable (with single insulation and a 'choc-box' connector not sufficiently protected from mechanical damage or adverse weather conditions).

Source: ILO.

Employers need to ensure:

- Workers receive training on how to use electrical tools safely;
- Portable electrical tools are regularly inspected and maintained by a competent person, and complete records kept;
- Whenever possible, portable electrical tools are used at reduced voltage to reduce the risk of a lethal shock;
- All electrical tools are earthed/grounded as per the manufacturer's specifications, unless they are "all insulated", or "double insulated" tools that do not require an earth. Are trip devices present?
- Workers take suspect or faulty tools out of use, put them in a secure place, and make sure they are not used until repaired by a competent person;
- Sufficient outlet sockets are provided to reduce the use of extension leads to a minimum. When extension leads are used, care should be taken to make sure that they are in good condition and positioned where they will not be damaged or create a tripping hazard.

Electrical tools used outdoors or within a wet or confined place should be connected through a residual current device (RCD), which will cut off the power quickly if there is an earth fault.

It is important that inspectors verify that employers and workers know/have been trained in what to do if someone receives an electric shock - namely that the first thing to do is to disconnect the source of electricity. If this is not possible, they should try to remove the source of electricity from the person using non-conducting material such as a piece of wood. Persons trying to help should NEVER touch the person receiving the shock as they will also receive a shock themselves. Trained persons should then administer any first aid required.

3.3.4.10 Facilities and welfare of agricultural workers

Inspectors should be aware of the national legislation regarding the basic facilities that employers should provide to workers in the agricultural sector. Some examples of facilities are included below.[35]

(a) Provision of drinking water

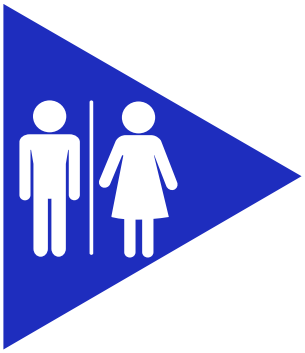
Agricultural workers, on account of their outdoor work and the heavy physical exertion involved, can quickly become dehydrated, which can lead to reduced capacity and productivity and an increased risk of occupational accidents.

Employers should provide sufficient and easily accessible supplies of potable water to meet the needs of all workers at the workplace. To meet these needs employers must take account of the outside temperature and the nature of the work undertaken. For physical work performed in very hot temperatures, workers may need a glass of water every 15 minutes (one litre per hour unless medical advice is given to the contrary).[36]

Mobile water dispensers should be clean and maintained, kept closed and have a tap. Cups for individual use should be available. Open containers should be prohibited.

The employer should provide potable water for drinking, personal hygiene, cooking and washing food. Water supplies that are not fit for drinking must be appropriately signposted.

(b) Provision of toilets



Agricultural employers should provide toilets in accordance with their national legislation. They should be sufficient in number, separate for men and women, provide privacy for users, be lockable, and easily accessible at all farm sites. Employers should maintain toilets in a sanitary and clean condition and provide toilet paper.

In remote agricultural sites, portable toilets should be made available. The sewage disposal system should not threaten workers' health or risk contaminating other resources.

35 Readers may also wish to consult the ILO handbook: *WASH@Work* (Geneva, 2016) (WASH = water, sanitation and hygiene). This document contains numerous WASH examples from the agricultural sector, as well as a summary of international labour standards and their provisions on WASH, which are also specific to this sector.

36 INRS : *Travail par forte chaleur en été* (Available in French).

(c) Provision of handwashing facilities

Handwashing facilities - with a sufficient quantity of potable water (preferably cold and hot), soap and disposable towels - should be provided near toilets at the workplace. If workers do not have immediate access to a handwashing spot, the employer should provide them with hydroalcoholic gel to combat biological contamination (bacteria, viruses, etc.) and the risk of epidemics (COVID-19).

For workers who are not housed at the workplace by the employer, a shower cubicle should be provided if they are exposed to dirty or unsanitary work.

The employer should promote the importance of good hygiene to minimize any exposure to risks related to heat, contagious diseases and chemical residues.

(d) Welfare premises and temporary shelters

Welfare facilities should be provided at the farm site, complemented by shelters at remote worksites so that farm workers can protect themselves from the weather to which they are exposed due to the nature of their work, which is mainly outdoors. In hot climates, shaded rest areas should be available at all worksites. Workers should be able to take a break, protected from the sun. Welfare facilities should allow farm workers to take breaks, eat meals, change clothes and store their personal belongings safely. Employers should maintain these premises in a clean and sanitary condition.

© Wilson / Unsplash

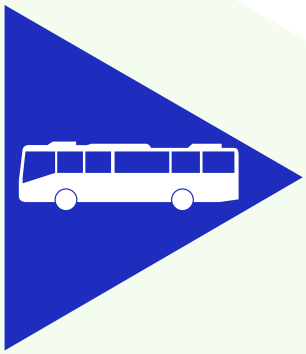
(e) Lodging for agricultural workers

Decent accommodation and a suitable living environment contribute to the health and well-being of workers (and their families). Farm workers may be hired for limited periods or needed at short notice, and accommodation is often provided by the enterprise in these situations. Farmers also make frequent and extensive use of seasonal workers, who are used to travelling around, to carry out agricultural work for a limited period of time. While all workers may be concerned about the need for decent housing provided by the employer, seasonal or migrant workers will need it most as they often work far from their family homes.

Where the employer provides accommodation, it should conform to minimum housing standards established by the competent authority of the country concerned. These standards should provide for a minimum space per person (or per family); a supply of drinking water to workers' dwellings; the disposal of sewage and garbage collection; protection against heat, cold, humidity, noise, fire and disease-carrying animals, especially rodents and insects; satisfactory sanitary conditions and ventilation; cooking and storage facilities; natural and artificial light; a minimum degree of privacy; and adequate separation of rooms for the accommodation of persons and areas intended for animals.

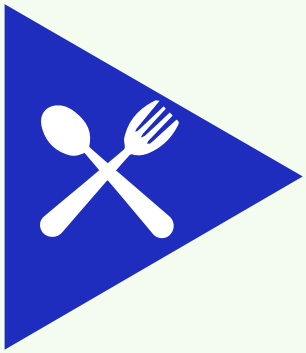
Where workers are housed in groups, a common situation for seasonal and migrant workers, the competent authority should establish housing standards so that, as a minimum, the accommodation should have an individual bed for each worker; individual lockers for the storage of personal belongings; separate rooms for men and women; adequate facilities for the supply of drinking water, sewage disposal, sanitation and cleaning, ventilation and, where necessary, heating; as well as eating and resting rooms.

(f) Transport of agricultural workers



Farms may be remote, or workplaces difficult to access. As a result, the means of transportation to reach these places may be unavailable or unsuitable. In such cases, the employer may wish to arrange for the transportation of workers to and from the workplace or provide this service directly. The farmer should also provide transportation for workers to and from different operating sites.

(g) Catering



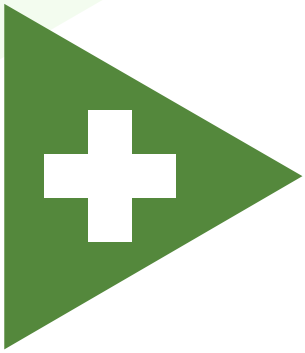
Inadequate or insufficient nutrition can lead to health problems and a lack of productivity. In cases when employers provide food, they should ensure that energy intake is sufficient for the anticipated physical exertion and that the diet is balanced in terms of carbohydrate, fat and protein intake.

If workers are expected to bring their own food, they should have a suitable place to store it.

A high level of hygiene should be observed in all catering facilities. Similarly, food should be prepared, handled and stored in a hygienic manner so as not to become contaminated. Where workers are dispersed among several operating sites, measures should be taken, where possible, to transport food and beverages to be consumed during the meal break to the operating site.

Workers should be provided with appropriate facilities to ensure that they can wash and change, if necessary, before eating.

(h) First aid



First aid equipment should always be clearly marked, easily accessible and located near areas where accidents may occur. This equipment should be accessible within one or two minutes. The first aid kit should be made of suitable materials, and its contents protected from heat, humidity, dust and tampering.

The contents of first aid kits should be adapted to the risks inherent in a specific workplace, the workers employed there, and the protection of first aiders. In addition, they should be inspected regularly and replaced if necessary. They should contain nothing more than the equipment necessary for first aid. Similarly, written instructions on first aid should be posted by the employer at key points in the workplace.

An effective first aid training programme should be implemented at each workplace by trained personnel and in collaboration with local medical authorities. First-aiders should be carefully selected on the basis of criteria such as reliability, motivation and ability to care for people in an emergency.

Since farm workers usually work in small groups in separate locations, each should receive basic first aid training. This training should include open wound treatment and resuscitation. In areas where the work exposes workers to the risk of chemical poisoning, smoke, snake bites, insect or spider bites, or other specific hazards, first aid training should be supplemented accordingly.

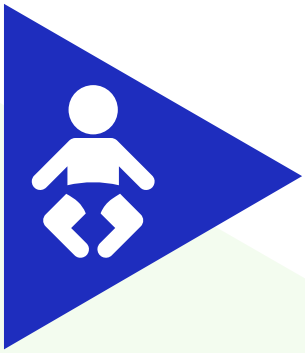
First aid training should be renewed at regular intervals, in accordance with national law and practice, to ensure that knowledge and skills do not become obsolete.

Finally, agricultural employers should organize information meetings for all their staff. These meetings should focus on the following key points:

- the organization of first aid in the workplace, including the procedure for access to complementary care;
- the identity of the colleagues designated as first-aiders;
- the location of the first aid kit;
- the location of the infirmary;
- the instructions to be applied by the staff in the event of an accident; and
- the means to help the rescuers in their work.

If medical care is required, it should be administered in cooperation with external emergency services.

(i) Day nursery for children



Employers sometimes provide a day nursery for children, especially in farms employing women. These services can help improve productivity as they have been shown to reduce absenteeism.

They also make parents less likely to take their children to production areas, thereby protecting them from exposure to risks to which they are particularly sensitive (chemical hazards, agricultural inputs, etc.) and diseases (zoonoses), and reducing the risk of child labour. The premises in which these services are provided should be protected from workplace hazards and maintained in good hygienic conditions.

Agricultural employers may also want to facilitate, where necessary, the transport of children to schools.

3.3.4.11 Asphyxiation or drowning

Asphyxiation is a condition caused by a lack of oxygen to the body, which can lead to brain damage and fatality. There are two types of asphyxia, physical or chemical asphyxia.

Physical asphyxia, also called mechanical or comprehensive asphyxia, occurs when there is a physical force that prevents a person from breathing. In chemical asphyxia, a reaction between a chemical and body (tissue/cell) results in the disturbance of oxygen uptake and/or utilization, and thus decreases the amount of oxygen available to the body. These chemical substances, which are known as **asphyxiants**, are particularly dangerous in enclosed spaces as they interfere with the body's ability to absorb and transport oxygen – and they may be odourless. They may disable the nervous system and cause the victim to collapse, become unconscious and ultimately result in death. Chemicals that cause asphyxia include carbon monoxide, cyanide, and hydrogen sulphide.

The ILO Code of Practice on Safety and Health in Agriculture, in particular chapter 14.11, details prevention and control measures in confined spaces, which also apply to asphyxiation and drowning hazards. The measures usually include the training of workers, a written entry system to the storage facilities (identify hazards, maintain contact, the use of appropriate equipment), an emergency action plan, and the identification and labelling of all confined spaces, including grain storage facilities, manure storage tanks, etc.

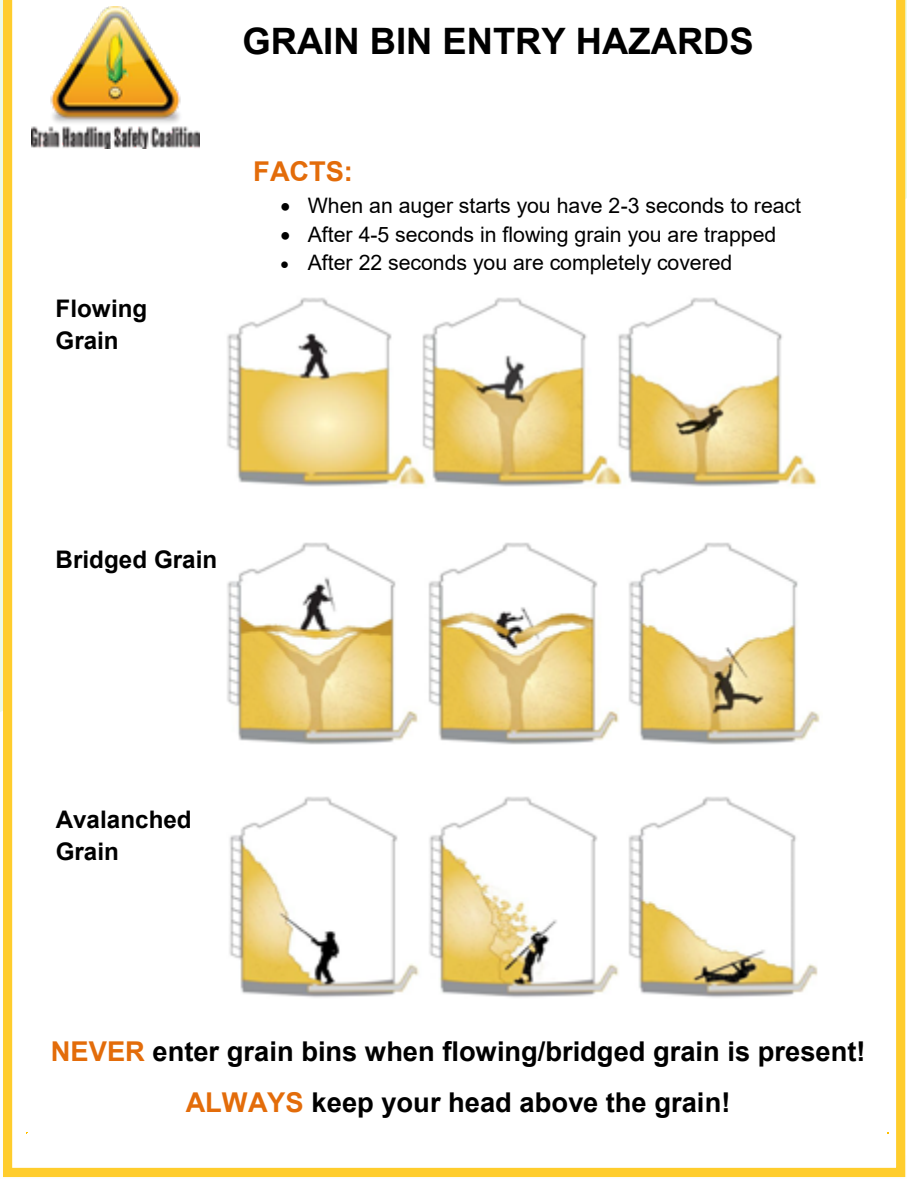
In addition to these general measures, the following paragraphs explain in more detail the measures that inspectors should certify have been taken with respect to grain and manure storage facilities to ensure that risks to workers are reduced.

Grain storage facility

Asphyxia arising from the inhalation of grain may occur when workers are entrapped by collapsing material when working on stored grain and other material. This is also called "engulfment", a condition of being swallowed up or overwhelmed by loose material. The risk of asphyxiation increases when the grain is spoiled and releases carbon dioxide, which replaces oxygen.

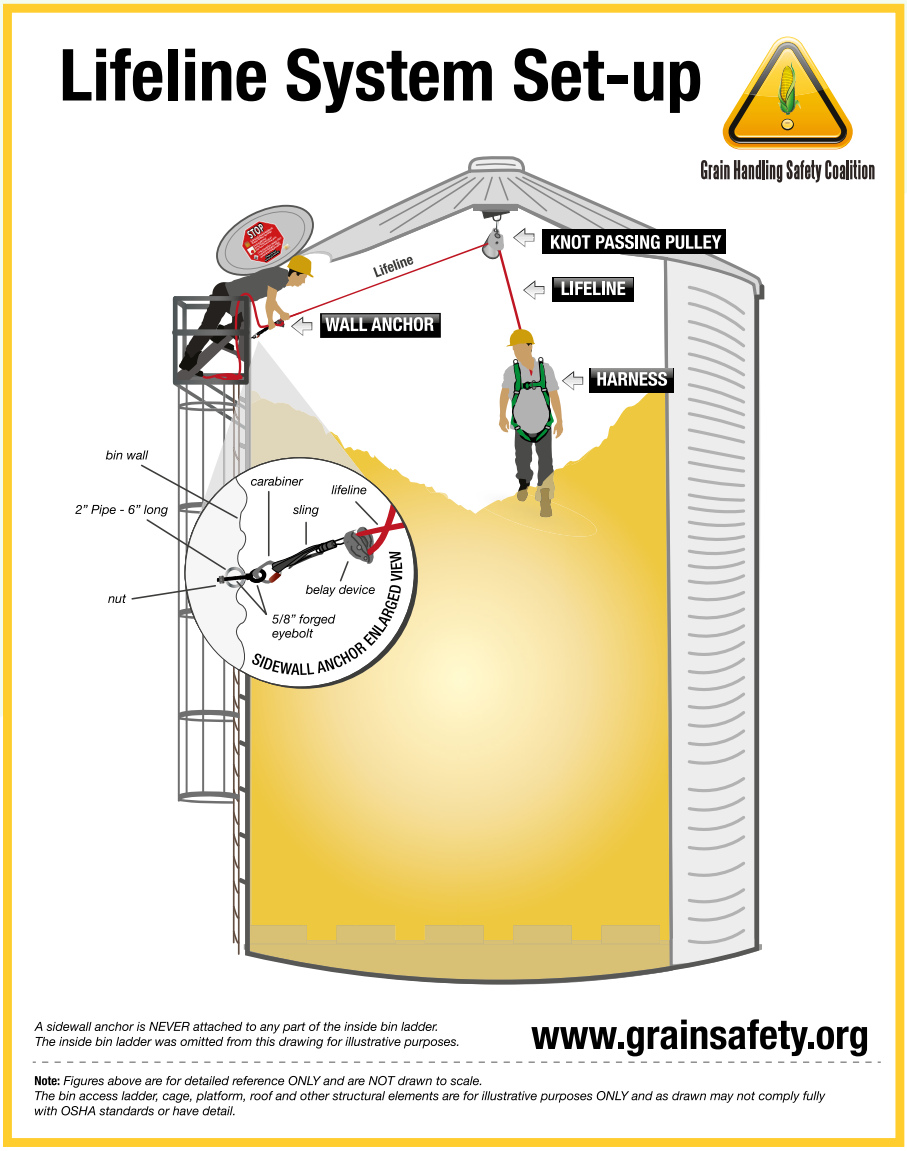
There are three common grain entrapment scenarios. The first is when emptying grain from the bottom of the storage facility. The flowing grain creates a force that is so great that it can pull a worker into the bin and bury her/him in less than a minute, causing suffocation. The second is the collapse of bridged grain, a condition called "bridging" - when the grain forms a bridge with a cavity below. As the grain is emptied from below, the bridge can collapse with workers on it – and they do not realize that bridging is taking place and become engulfed. The third scenario is when the vertical grain wall collapses (avalanched grain).

Figure 51. Grain bin entry hazards. Safety signs to warn workers of the hazards working with stored loose materials, that include a summary of grain entrapment scenarios.



Source: Grain Handling Safety Coalition

Figure 52. Lifeline system set up before entering a grain storage bin.



Source: Grain Handling Safety Coalition

The main prevention measure is not to enter the storage bin. Workers should deal with their task – i.e., to break up grain sticking to the storage bin walls or crust - from outside the bin.

If a worker must enter the bin, the flow of the grain should be stopped before he/she enters it. Workers should wear safety belts or harnesses equipped with properly fastened life lines to keep them above the stored material in case of a fall, and a similarly equipped standby person should be stationed outside the area; a third worker should remain on the ground to go for help or assist, if necessary.

The lifeline system should include two anchors, one at the roof compression ring, and the second one at the wall, or near the roof hatch.

Manure storage facilities

Manure storage facilities pose occupational risks, namely the aspiration of liquid manure, toxic gas inhalation and asphyxiation from the build-up of gases, such as hydrogen sulphide, methane, ammonia and carbon dioxide. In fact, these facilities are a major hazard in agricultural undertakings with cases of deaths and injuries associated with toxic exposure.

The risks differ according to whether the manure storage facilities are open or enclosed. Enclosed structures are known for asphyxiation due to toxic gas inhalation, while open-structured facilities are mostly associated with drowning.

Enclosed structures are usually located directly below the animal housing facility. As the build-up of harmful gases from manure decomposition are hazardous for both people and livestock, employers must ensure that there is adequate ventilation to mitigate the risk.

The main prevention and control measure is not to enter the facility, thus avoiding exposure to the hazard. Nevertheless, workers may need to enter the facilities to do maintenance or other work. In this case, planned entry should follow a defined procedure, discussed and agreed between employers and workers, to reduce entry risks. This procedure is likely to include a test for contaminant gas and oxygen levels from outside the storage, and before entering the facility.

▶ Figure 53. Exterior manure storage facility.

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As mentioned above, exterior manure storage facilities (Figure 53) also raise the risk of hazards such as drowning. Prevention and control measures should therefore include warning signs and safety measures to prevent access, namely gates and fencing with locks, as well as provision of rescue equipment.

3.3.4.12 Being struck by moving objects (including flying or falling objects).

Being struck by moving or falling objects is one of the eight top killers in agriculture. Injuries or deaths are caused by moving objects that may be ejected from tools, machines and other equipment, or items falling from buildings, hay stacks, tree trunks, etc. Equipment falling over also qualifies in this category. Though people are not injured by falling objects as often as they are by vehicles and falls from height, the injuries received may well be serious or fatal.

To prevent these types of injuries or fatalities from happening, the inspector must verify that the agricultural undertaking has trained all users on the safe operation of tools, equipment and the storage of materials, and has systems to ensure that all tools and equipment are safely maintained - as well as conducts inspections of storage facilities to check on the stability of material.

An inspector could develop a specific checklist on this topic before inspection and providing advice to an agricultural undertaking and workers (Table 3.1). It should be borne in mind that the checklist will not cover all eventualities.

Table 3.3. An example of a checklist of hazards/risks and preventive control measures.

	Hazards/risks and preventive control measures
1. Farm machine	Hazards/risks ▶ Rapidly moving parts of farm machinery may contact and eject foreign material – small rocks, dried plant stems, wire or even broken machine parts; ▶ Rotary mowers and flail choppers can throw small stones and other debris great distances with excessive force; ▶ Combine straw choppers and hammer mills can also throw kernels and other crop materials.
	Tips for prevention ▶ Check equipment before use to make sure all guards are present; ▶ Keep bystanders far from areas where thrown objects could hit them; ▶ Protect operators of farm machinery adequately against the weather or accidents due to impact, crushing or contact with a moving load by a cab; ▶ Where appropriate, equip farm machinery with structures designed to protect the operator from being crushed, should the machine overturn, and from falling material.
2. Hand tools	Hazards/risks ▶ 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. ▶ Power tools may cause severe and even fatal injury if used incorrectly. Risks to the user include being struck by projectiles, contact with moving parts, and entanglement.
	Tips for prevention ▶ Make sure all safety devices on tools are in good working order before use; ▶ Wear appropriate PPE – e.g., safety glasses, goggles, face-shields, hard hat; ▶ Only allow trained workers to operate the tools.

	Hazards/risks and preventive control measures
3. Working at and objects falling from height	Hazards/risks ▶ Objects being dislodged during work at height (e.g., branches during tree work); ▶ Objects falling from height because of adverse weather conditions, or wear and tear (e.g., stacked boxes / pallets or bales).
	Tips for prevention Ensure that: ▶ No tools or equipment are stored near the edges or on railings of elevated workplaces; ▶ Material is stacked properly to prevent it from falling; ▶ All debris and unnecessary materials around any scaffold in agricultural buildings are regularly removed; ▶ Branches of trees are brought safely to the ground; ▶ The ground below workers working at height is clear of other workers.
4. Stacking	Hazards/risks ▶ Loads falling from height during lifting and handling operations (e.g., boxes falling from a pallet when being lifted by a forklift truck); ▶ Poorly stacked loads on racking. Loads not properly secured; ▶ Workers and others (bystanders) at risk from falling or collapsing bales.
	Tips for prevention ▶ Stack all products as recommended by the manufacturer/supplier, ensuring that they are correctly supported; ▶ Make sure that stacks are stable and balanced, and use fences or bars to prevent objects from falling. ▶ Check wooden pallets as they may rot and break.

3.3.4.13 Slip, trip or fall on the same level

Slips, trips and falls on the same level account for a significant percentage of injuries occurring in agricultural undertakings. Common causes of slips are walking surfaces made slippery from rain, ice, mud, manure, chaff or other substances; carrying objects over uneven or steep terrain; and poorly maintained steps and stairs. Trips occur when a person's foot collides (strikes, hits) an object causing him/her to lose balance and eventually fall. Common causes of tripping are clutter in a person's way; uncovered cables; uneven (steps, thresholds) walking surfaces. Inadequate lighting or poor visibility can also be a significant factor.

Both slips and trips result from an unintended or unexpected change in the contact between the feet and the walking surface. This fact shows that good housekeeping, quality of walking surfaces, selection of proper footwear, working activity and appropriate pace of walking are critical for preventing incidents.

▶ Figure 54. Uneven walking surfaces increase the risk of tripping.

Source: ILO.

Housekeeping

When inspecting agricultural installations (e.g., farm workshops, animal housing, storage facilities), an inspector could start with an observation of housekeeping as this gives an indication of the safety culture and OSH management at the undertaking. More importantly, good housekeeping practices can contribute to worker safety by preventing slips, trips and falls. The inspector may wish to verify if:

- Aisles, stairways, exits and entrances are free of obstructions and are in good condition;
- Working areas and walkways are well-lit and marked;
- Workstations are clean and free of clutter;
- Materials are stored in clearly designated storage areas;

- Proper waste containers are located in easy-to-access areas and emptied regularly;
- Tools and equipment are kept clean, well maintained and stored properly.

Without good housekeeping practices, any other preventive measures such as the installation of sophisticated flooring and specialty footwear will never be fully effective.

Figure 55. A farm dairy with a slip-resistant floor due to the continual presence of moisture/ manure.

© Istock / BulentBARIS

An inspector should verify that employers ensure that: walking surfaces in agricultural undertakings are equipped with adequate lighting; walkways that are exposed to wet or slippery substances are roughened; damaged floorboards and concrete defects are repaired when damaged.

3.3.4.14 Noise

Noise[37] is typically defined as unpleasant, unwanted, or hazardous sound. Noise may present a serious occupational risk to those who work in agriculture.

Exposure to farm equipment or animal production is the principal source of noise-induced hearing loss in agriculture: tractors, forage harvesters, silage blowers, chainsaws, skid-steer loaders, grain dryers, squealing pigs and guns are some of the most typical sources of noise on a farm. Studies suggest that lengthy exposure to these high sound levels have resulted in noise-induced hearing loss of farmers of all ages, including teenagers.

Sound has two properties: frequency and intensity. Sound frequency refers to how many vibrations occur in one second and is measured in Hertz units (Hz). Intensity is the power or size of the sound pressure. The perceived loudness of a sound is dependent upon both frequency and intensity, along with other factors such as how close a person is to the sound source and the health of his/her ears.

The sound level of noise is measured in a logarithmic scale. When measuring noise at work, every 3dB change represents a doubling or halving of sound energy. For example, if a worker (not wearing PPE) is exposed to 82dB(A) over an eight-hour day, this is the same as being exposed to 85d(B)A over four hours. Exposing workers to different levels of noise and for different lengths of time greatly affects the level of risk.

Exposure to noise affects hearing. Hearing loss may be only temporary after short periods of exposure, but if workers continue to be exposed to high noise levels, they will suffer permanent damage to their hearing. Permanent damage can also be caused immediately by sudden, extremely loud noises, e.g., from guns.

But exposure to noise affects more than hearing. The body responds to acoustic stimuli as it would to any other physical or psychic aggression through cardiovascular, hormonal, digestive or psychic changes. Moreover, hearing loss can also be accompanied by tinnitus (when the sufferer experiences ringing in either one or both ears that is not caused by external sounds), which can lead to chronic nervous depression.

High noise levels can also increase risks associated with safety, interfering with communication and making warnings harder to hear, and they can also increase worker fatigue and cause irritability, reducing performance.

If workers are in an area or use equipment that obliges them to shout when they wish to communicate with someone who is only two metres away, the level of noise exposure is likely to damage their hearing. When labour inspectors identify these circumstances, they should ascertain what measures have been considered to reduce the risks to workers.

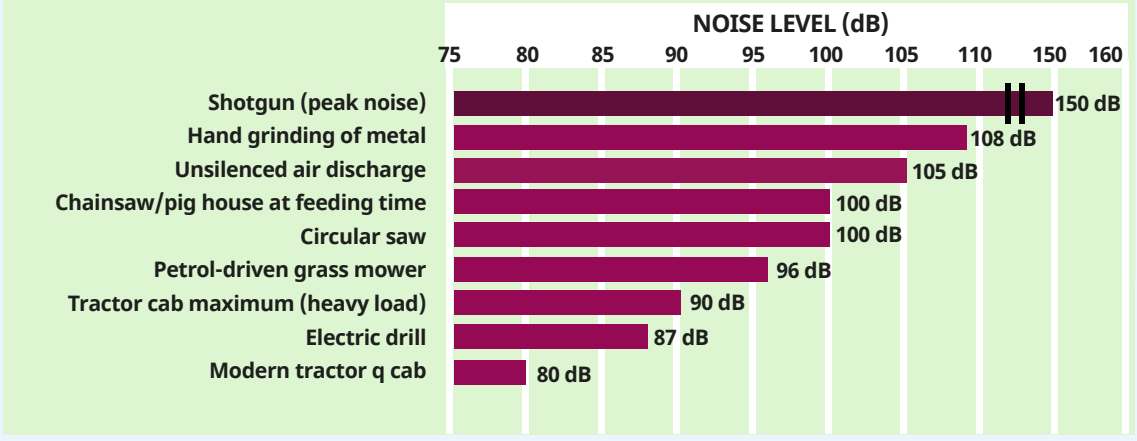
Table 3.4 gives a quick appreciation of the sound level in a given environment. However, this simple method remains approximate.

37 International Labour Standards: The Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (No. 148); the Safety and Health in Agriculture Convention, 2001 (No. 184); and the Safety and Health in Agriculture Recommendation, 2001 (No. 192). Additional information on the assessment of noise exposure and protective and preventive measures is provided for in the Working Environment (Air Pollution, Noise and Vibration) Recommendation, 1977 (No. 156); the ILO code of practice on the protection of workers against noise and vibration in the working environment (Geneva, 1984); the ILO code of practice on safety and health in agriculture (Geneva, 2011); and the ILO manual on Ergonomic checkpoints in Agriculture (Geneva, 2014). Further detailed information may be found in other ILO publications.

Table 3.4. Evolution of the sound level according to the comprehension distance (INRS, ED 808) [38]

Distance between workers	An indication of the noise level dB(A) at the work station when workers need to use the level of voice indicated to be understood at the distances shown.			
	Shouted voice	Very loud voice	Loud voice	Normal voice
15 cm	90	84	78	72
30 cm	84	78	72	66
60 cm	78	72	66	60
120 cm	72	66	60	54

Table 3.5. Noise levels in selected agricultural activities. [39]



By comparison, the noise level of a normal conversation is 60 dB(A).

38 INRS: *Le bruit en milieu de travail* (ED808)(French)
39 Adapted from chapter 12 of the ILO code of practice on safety and health in agriculture.

The employer should be responsible for reducing the exposure of workers to noise by all appropriate means. National legislation may require that workers' exposure be assessed. Usually, noise exposure has to be measured over eight consecutive hours' work exposure time, unless the level is consistent - then a shorter period can be measured and extrapolated. The personnel responsible for monitoring noise in the working environment should have received appropriate training in the measurement and control of noise and vibration and be equipped with suitable instruments. Noise measurements should be carried out in accordance with standardized methods appropriate for the specific goal, and using norms adopted at the international level or their national equivalent.

Based on assessments of workers' exposure to noise, employers should establish plans to reduce such exposure to the lowest levels practicable. It should not exceed the limits established by national and/or international laws and standards.

Inspectors should ensure that an effective prevention plan is put into effect whenever and wherever there is a special risk due to noise. Measures to reduce noise must address the sound source and all workers in the area. The major strategies to be applied are:

- engineering controls (noise reduction, noise isolation);
- administrative controls (organizational measures); and
- personal protective equipment (PPE).

The best option for reducing machinery noise levels is to do so at source - through good design. Machinery and equipment should conform to relevant national or international laws and standards pertaining to noise, and should be maintained as part of a planned programme of maintenance, since worn components may increase noise levels. The second option is to reduce noise by installing soundproof enclosures, acoustic materials or other engineering measures. If these means are insufficient, exposures should be minimized through appropriate organizational measures (administrative controls) to reduce the time of workers' exposure to noise sources. Employers should arrange the workplace layout and job assignments so as to minimize this exposure (workstation rotation).

Reducing noise levels by means of engineering or administrative controls may still not reduce the noise exposure to an acceptable level. In this case, labour inspectors, in accordance with national legislation, will need to ensure that workers have been provided with hearing protection. Hearing protectors (such as earplugs or muffs) should be freely provided and, as in the case of other PPE, be properly maintained and replaced as often as necessary. Where hearing protectors need to be worn, it should be indicated with appropriate signs.

Hearing protectors may also be needed for other agricultural processes, such as working with livestock.

Employers have to provide training and information about noise, its consequences, safe working systems and procedures, and the use of preventive measures.

Where workers' exposure to noise is likely to exceed that permitted by national laws and standards, they should receive regular medical surveillance (including audiometric testing) and be informed of the results of their tests. A record of audiometric testing should be kept for a specified period in accordance with national laws and regulations.

3.4 Closing the inspection

Once the inspection of the undertaking and the examination of documentation have been completed, inspectors should hold a closing meeting and discuss, with both employers' and workers' representatives, matters that have been noted as a result of the inspection. While it is normal that matters requiring action to improve compliance with legislation are discussed, it is also good practice for labour inspectors to report to employers' and workers' representatives matters that were noted to be in compliance with legislation.

The closing meeting provides the opportunity for an open discussion and should not become a confrontation. Inspectors have to balance the dual functions of enforcing the law and providing advice and information. They will need to clearly state what needs to be done to ensure compliance with national legislation and specify a mandatory time frame for the actions to be taken. Labour inspectors may also wish to advise that they will conduct a follow-up visit within a predetermined time frame to verify that actions have been taken. They will also inform, if possible, of any enforcement action to be taken, unless a further investigation will be required after the visit – such as an assessment of previous advice, photographs – before a decision can be taken.

In some instances, actions will be required immediately – and in others more time will be given. Labour inspectors must inform all those at the meeting of any proposed enforcement action to ensure that the employers and/or workers fulfil their obligations. National legislation will define the actions open to labour inspectors, and the labour inspectorate's policies may also define expected actions. These matters are raised below in section 3.4.1.

Labour inspectors must show good judgment and communication skills – both during and at the end of the visit; and their ability to summarize the main findings of the visit is paramount. If well done, this will convey the importance of any remedial action required and gains the employer's and the workers' commitment to taking such action.

The aim of the closing meeting is for labour inspectors to:

- Summarize the general standard of conditions at the undertaking, emphasizing what is satisfactory, but clearly pointing out what needs to be improved to ensure compliance with the law;
- Discuss any unlawful conditions observed, outlining all apparent violations and possible legal consequences;
- Propose priorities for improving OSH conditions;
- State any measures which have to be implemented without delay;
- Inform the employer of the period allowed for implementing other measures;
- Inform those present of the role and purpose of labour inspection, indicating the services it can provide to the employer and the workers; and
- Inform on any enforcement action that is to be taken.

3.4.1 Determining action to take

National legislation will determine what actions are available for labour inspectors to take. However, they should be empowered to take steps with a view to remedying defects in plant, equipment, layout or working methods, which they have reasonable cause to believe constitute a threat to workers' health and safety. Nevertheless, labour inspectors will have discretion as to whether warnings and advice are given or enforcement action is taken against duty holders violating legal provisions.

Whilst the above matters are important, it is equally important to the inspectorate that, amongst other things, the inspector's actions are consistent and proportional to the risks. Inspectorates may document their enforcement policy, and these policies and statements may or may not be publicly available.

The actions available for labour inspectors usually range from:

- Providing verbal advice;
- Providing written advice;
- Issuing improvement notices detailing action required within a certain time frame;
- Issuing stop/prohibition notices requiring the immediate cessation of a work activity where there is an imminent serious threat to workers' safety or health; in some countries, these might involve immediately removing children from work;
- Imposing sanctions such as fines, or referring the case to court for criminal liability prosecution.

The degree of risk is an important factor in determining what action labour inspectors will take, as demonstrated below.

a) If the risk is judged high or unacceptable, risk control/preventive measures must be implemented immediately, and the work activity must be stopped until they have been introduced. Labour inspectors may issue a stop notice/prohibition notice, and depending on other matters – such as previous advice having been ignored – may wish to initiate other legal proceedings, such as the imposition of sanctions.

b) If the situation is judged as medium risk, but still unacceptable overall, although not requiring immediate action, the inspector may wish to issue improvement notices thus legally requiring action to be taken within a set time period.

c) If the situation is judged low risk, and considered generally acceptable, any action required can be taken within a longer period. In this case, it may be appropriate for labour inspectors to provide verbal or written advice.

3.5 Reporting on the inspection

An inspection is not complete until those involved in it have completed an inspection report. Legislation and the labour inspectorate's policies and procedures vary from country to country, and it is not possible, in this guide, to list everything that should be contained in a report. It should be borne in mind that the inspection report is generally an internal document that is used to record matters, both positive and negative, that were noted during the inspection. Information is taken from it to instruct the employers and workers, in writing when required, on necessary actions; however, the report normally remains internal and is not per se supplied to others as it may contain confidential information that should not be disclosed. It should document any actions that the inspector/inspectorate requires the employers or workers to take.

Documenting this information provides a record of ongoing improvements made by those with legal responsibilities; this information is particularly useful for labour inspectors completing subsequent visits to the premises. Reports may be completed in a paper format, but many inspectorates are now making use of modern information technology facilities for reporting and maintaining records on enterprises and visits conducted.

The format of such a report varies widely from country to country. It may follow:

- A standard format in which the inspector provides information in response to a series of questions on a prescribed form;
- A narrative format in which the inspector presents information in full sentences and paragraphs under a series of broad headings;
- A combination of the standard and narrative formats;
- Other formats.

When completing the report, labour inspectors should distinguish between "fact" and "opinion". For example: the inspectors may be of the "opinion" that noise levels are at a level that increases the risk of workers suffering noise-induced hearing loss (as conversation is difficult between two persons standing two metres away from each other). However, if they measure the level of noise, they would have evidence, and they could record as "fact" that the noise levels are at a level that may result in noise-induced hearing loss. Both fact and opinion are important in an inspection report, but it must be clear as to whether the matter documented is fact or opinion.

The report should be completed as soon as possible after the inspection, while all the observations are clear in the inspectors' minds. Photographs and measurements taken during the inspection also help labour inspectors recall what they have seen – and may be incorporated into the reports.

An example of information that may be contained within such an OSH inspection report is recorded below. The list is not exhaustive and, depending on the purpose of the visit, further information may be required.

General information on the enterprise

- Name, legal status (company, partnership) and relation to other entities and companies (e.g., subsidiaries);
- Location and address;
- Nature and description of business;
- Contact person, and contact details; telephone, email and fax numbers;
- Number of employees (disaggregated by sex, young workers, occupational categories);
- Special processes (e.g., use of chemicals) or "special conditions" (high risk/hazardous);
- Applicable collective agreement.

Working conditions

- Occupational safety and health management system;
- Systems of work, hazards present and risk control measures;
- Housekeeping;
- Medical and welfare services.

Industrial relations

- Existence of a trade union;
- Number and function of workers' representatives;
- Existence of a functioning OSH committee.

Inspection details

- Date and time of inspection;
- Nature of inspection (routine, special, follow-up, investigation) and topics inspected;
- Nature of contraventions identified;
- Priority areas for attention;
- Details of Inspectoral action taken on each priority area.

Any other information or data considered useful.

Name and position of inspector.

Signature of inspector and date report completed.

Ideally, the inspection report should provide information on the way in which the undertaking is organized, giving information on who is the owner, or any contractors and subcontractors, so that inspectors making future visits will be informed on the roles and responsibilities of the diverse enterprises operating on the site.

Particular attention is to be given to the fact that the inspection report, depending on national legislation, may be incorporated into sanctioning proceedings - in many cases ruled by criminal law. As such they assume the nature of confidential documents.

3.6 Appeals or complaints

Duty holders - employers and workers - should be informed of what rights they have in the inspection process. In particular, they should know how they may challenge and appeal the decisions of the labour inspector, if relevant, and where and how they can make complaints or report any possible abuses. Some inspectorates publicize awareness raising material on this subject and/or may distribute information at the time of the visit.[40]

40 Health and Safety Executive (HSE, United Kingdom): *When a health and safety inspector calls* accessed 25 August 2021; HSE: *When an Inspector Calls - YouTube* accessed 25 August 2021.

Appendix 1. Agriculture safety and health checklist.

This checklist identifies some of the hazards that are found on agricultural undertakings. The questions are designed to prompt consideration of control measures that may be in place to reduce risks generated by these hazards. It must be stressed that it is not an exhaustive list of questions or control measures.

Management of Occupational Safety and Health.

Does the enterprise have a manager (designated person) appointed for overseeing the management of OSH? How is OSH managed at the enterprise? Have risk assessments been conducted? Who is involved in conducting risk assessments? Have action plans been drawn up following risk assessments?

Is an OSH committee present? What is the composition of the committee equal numbers of workers and managers? Are elected workers representatives present? How often does it meet? How are the recommendations acted upon?

Young workers.

What actions are taken to ensure the safety and health of young workers?

Child labour.

How does the enterprise ensure that children are not illegally working and that national legislation is complied with?

Substances hazardous to health

Have all harmful substances and materials been identified, such as pesticides, dusts, fumes etc.?

Are pesticides safely stored - including adequately labelled (in accordance with GHS), safely used and safely disposed of?

Have control measures been put in place to prevent or control exposure to hazardous substances, by:

- eliminating the use or production of the hazardous substance;
- using a less hazardous substance;
- doing the work in a different way;
- storing the substances in a safe manner;
- using equipment fitted with control measures e.g., local exhaust ventilation: or
- using suitable PPE (supplied by the employer) when other controls do not reduce the risks to an acceptable level?

Have workers received information, instruction and training so they know what risks are presented by the hazardous substances used and produced at the undertaking, and what they need to do to avoid the risks?

Vehicle operations

Has the undertaking addressed the four main aspects of safe vehicle operations?

Safe stop – are all vehicles left in a safe condition?
Safe vehicle – are all vehicles suitable for their intended use and being maintained in a good state, in efficient working order and in good repair?
Safe driver – have all vehicle operators been suitably trained to comply with safe systems of work, e.g., reversing procedures, speed limits and safe transportation of workers; and
Safe site – Are separate vehicle and pedestrian routes available, and are other measures in place to ensure pedestrian safety, speed limits, one-way routes, reversing procedures, vehicle cameras, etc.?

Injury or disease caused by an animal

Are procedures in place to reduce the risks of injuries and diseases presented by animals?
Is vaccination possible?
Have workers been trained in safe handling techniques and safe systems of work when handling livestock?
Is appropriate PPE provided?
Are there hand-washing facilities?
Are workplaces disinfected as necessary?
Are insecticides used safely?
Is waste disposed of safely and by suitable trained and protected workers?

COVID-19

Has a COVID-19 risk assessment been conducted?
Have workers been made aware of all identified control measures and are these enforced - namely social distancing and the use of appropriate PPE, as well as cleaning, hygiene and handwashing?
Is there adequate ventilation of the working areas?
Is there health surveillance, and are workers provided with information?

Machinery and work equipment

Have all workers received suitable information, instruction and training to enable them to operate machines and equipment safely?
Has access to all dangerous parts of machinery been prevented (fixed guards, interlocked guards, jigs and holders)?
Are machines and safety devices maintained in a good state, efficient working order and good repair?
Is appropriate PPE (supplied by the employer) when other controls do not reduce the risks to an acceptable level?

Look at the machinery/equipment, watch working practices and/or speak to workers to determine how workers can be injured when operating the machinery and equipment. What procedure are present to ensure this cannot happen?

Weather

Are measures in place to reduce the risks presented by weather conditions (heat, cold, rain, sun (UV light) etc.)?
Are workers aware of the risks?
Are there appropriate rest facilities that take into account climatic conditions?
Do workers have access to water / hot drinks as required?
Is appropriate clothing worn? Where PPE is required, has this been supplied by the employer?

Working at height

Has the employer identified where work at height is being carried out?
Can this work at height be avoided?
Have workers who need to work at height received information, instruction and training on safe systems of work to be adopted?
Are equipment/ladders being maintained in an efficient state, in sound working order and good repair?
Are suitable barriers/guardrails present to prevent workers falling when they are working at height?
Is appropriate PPE supplied by the employer when other controls do not reduce the risks to an acceptable level?

Musculoskeletal disorders

Are workers carrying out activities (repetitive movements, carrying loads, working in conditions with poorly adapted postures, exposed to vibration etc.) that generate a risk of musculoskeletal disorders?
Are workers aware of the risk?
Can any of the tasks be mechanized?
Can manual handling aids, sack trollies or wheelbarrows be provided to reduce the risk?
Has the employer considered reducing the size or style of the container to reduce the loads or make them easier to carry?
Have workers been trained in safe handling/lifting techniques?

Electricity

Are overhead power lines present?
Are workers aware of the risk generated by the OHPLs, and know what they should do if a vehicle contacts an OHPL? How is the risk controlled?
Are portable electrical tools used?
Is low voltage for tools and equipment being used, e.g., battery-operated tools or low-voltage systems?
Where mains voltage has to be used, are trip devices (e.g. residual current devices (RCDs)) provided for all equipment?
Are RCDs checked daily by users and properly maintained?
Are electrical tools earthed/grounded as per the manufacturer's specifications, unless they are "all insulated", or "double insulated" tools that do not require an earth?
Are cables and leads protected from damage?
Are all connections to the system properly made and are suitable plugs used?
Are tools and equipment checked by users, visually examined on site, and regularly inspected and tested by a competent person?

Welfare at work

Is safe drinking water provided?
Are a sufficient number of secure, clean, private toilets available for both men and women?
Are suitable hand washing facilities provided (potable water, preferably cold and hot, soap and disposable towels should be provided near toilets and the workplace)?
Are rest facilities available?
If any accommodation is provided, is it suitable?
Is safe transportation provided?
Is the catering provided of good quality and reasonably priced? Do workers have a safe place to store food they bring to work? Are cooking facilities hygienic?
Are suitable first aid facilities and appropriately stocked first aid kits provided?
Are nursery facilities available to ensure children are not in the workplace?

Asphyxiation or drowning

Has the employer identified any workplace/work activity that presents a risk of asphyxiation or drowning e.g., grain silos, reservoirs, manure storage facilities, etc.?
Are workers aware of the risks? Have they been trained in safe systems of work, safe access, etc.?

Being struck by moving objects

Have precautions been taken to prevent any person being struck be falling objects or objects ejected by machinery? The following questions might be considered: Are there guards on machines? Are bystanders kept away? Is appropriate PPE worn? Are materials stacked safely? Are guardrails and toe boards used on scaffolding?

Slip, trip or fall on the same level

Have sufficient actions been taken to reduce the risk of slips and trips at the undertaking?
Is the flooring constructed in a manner so as to reduce the risk? Is there inbuilt drainage as required?
Is the housekeeping at the undertaking suitable?
Are aisles, stairways, exits and entrances free of obstructions and in good condition?
Are working areas and walkways well-lit and marked?
Are workstations clean and free of clutter?
Are materials stored in clearly designated storage areas, and is waste cleared away?
When required is suitable PPE (footwear) provided and worn?

Noise

Have workers had information and training so they know what the risks are from noise on site, and what they need to do to avoid those risks?
Has workers' exposure to noise been identified and assessed?
Can the noise be reduced by using different working methods or selecting quieter plant, e.g., by fitting breakers and other plant or machinery with silencers?
Are workers not involved in the work kept away from the source of the noise?
Is suitable hearing protection provided and worn in noisy areas?
Have hearing protection zones been marked?
Has health surveillance been arranged, in accordance with national legislation, for workers exposed to high levels of noise?

International Labour Organization

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