

Qualificação organizacional, energética
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Safety and Health at Work

Assesment Tool – Meat Products

User Manual



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Cofinanciado por:



UNIÃO EUROPEIA
Fundo Europeu
de Desenvolvimento Regional



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Introduction

This manual aims to assist the Work Health and Safety Assessment Tool – Meat Products user, in carrying out a simplified and easy-to-use occupational risk assessment with a view to adopting risk control solutions at workplaces.

The design of this tool tries to provide an instrument capable of being used without internet access or specific software installation.

In addition to its main purpose, this tool can also be used for workers consultation or training actions, provided as a complement of the other instruments developed within the scope of this project.

The tool is organized in three distinct parts (see Figure 1): the first, where a checklist is filled out, from which a graphical overview is obtained, which will give the overview of the level of risk control (second part). This synthesis of results allows the user to immediately visualize the level of control of the main risks and in which will have to make major interventions. Finally, the third part appears, where a report is generated with solutions, particularized for each one of the risks in which the adoption of measures proves necessary.



Fig. 1 – Structure of the risk assessment tool.

The use of this tool does not dispense or replace the use of the OiRA tool (Online interactive Risk Assessment) developed within the scope of this project to be used by Meat Products Enterprises since this is configured as a tool for "screening" of risk situations, and not as an exhaustive diagnosis. Through the OiRA tool, it will be possible to obtain an adequate risk assessment for micro, small and medium-sized enterprises and also to define an action plan.

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1. Risk Assessment

1.1. Checklist

The tool begins by filling out a checklist (see Fig. 2), which covers 18 dimensions of analysis, namely:

- Management of Safety and Health at Work;
- Workplaces Installations;
- Thermal Environment, Lighting, Noise e Chemicals;
- Psychosocial Risks and Stress;
- Ergonomic Risks;
- Electrical Risks;
- Safety Management of Machinery and Work Equipment;
- Personal Protective Equipment (PPE);
- Containers Under Pressure;
- Reception and Storage of Primary Materials – Stands and Shelves;
- Reception and Storage of Primary Materials – Conservation Chambers;
- Manufacturing Area - Surfaces and Work Plans;
- Manufacturing Area - Thermal Burns;
- Manufacturing Area - Hand Tools;
- Packaging Area;
- Finished Product Storage – Stands and Shelves;
- Finished Product Storage - Conservation Chambers;
- Emergencies.

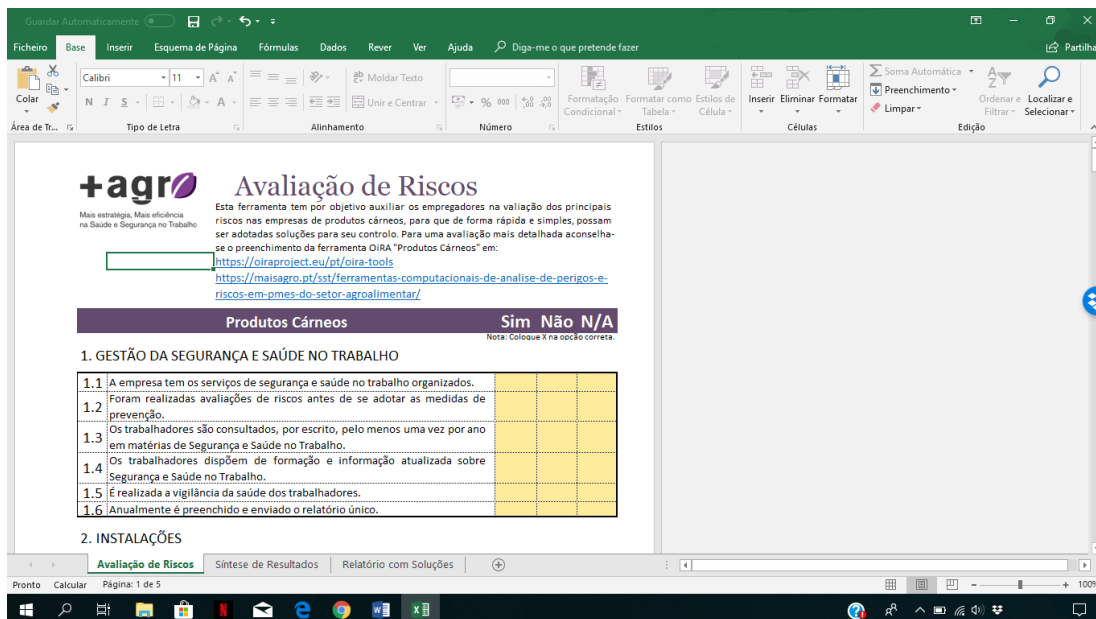


Fig. 2 – Checklist – Risk Assessment tool

For a better understanding of each dimension of analysis, a brief description of the aspects covered by them is presented, seeking to provide a set of information relevant to different types of users (namely employers and workers).

1.1.1. Management of Safety And Health At Work

Safety and health at work are fundamental to guarantee the physical, psychological and health of workers while ensuring the productivity of enterprises.

In this dimension of analysis we intend to approach in a summarized way:

- General principles of prevention;
- Employer and employee general obligations;
- Workers consultation, information and training;
- Work organization and occupational health and safety services activities;
- Workplace Accidents.

1.1.2. Workplaces Installations

Workplaces Installations conditions can influence the health and safety of workers. In this dimension of analysis, the aspects associated with the floors and the

organization of the workplaces are discussed.

1.1.3. Thermal Environment, Lighting, Noise And Chemicals

Environmental risks can be caused by physical, chemical or biological agents which, when present in the workplace and above the threshold values, can lead to occupational diseases and contribute to an increase of accidents at work and decreased productivity. In some cases it may also contribute to the occurrence of defects in production, for example, confusing identical patterns and colors.

At this point, aspects related to the following topics will be evaluated:

- Thermal environment and ventilation;
- Lighting;
- Noise;
- Chemicals.

1.1.4. Psychosocial Risks and Stress

Psychosocial risks derive from deficiencies in the design, organization and management of work, as well as from a problematic social context of work, which can have negative psychological, physical and social effects such as work-related stress, exhaustion or depression. Some examples of factors inducing psychosocial risks are:

- Excessive workloads;
- Contradictory requirements and lack of clarity in the definition of functions;
- Lack of participation in decision-making that affects the worker and lack of control over the way he/she performs the work;
- Poor management of organizational changes, job insecurity;
- Ineffective communication, lack of support from bosses and colleagues;
- Psychological or sexual harassment, violence by others;
- Difficult reconciliation of family and professional life.

Concerning stress, it comes when people realize that there is an imbalance between the demands of work and the physical and mental resources they have available to deal with these demands. As examples of stress-inducing factors we can indicate:

- Insufficient time to perform the required work;
- Do not have the emotional and cognitive skills to perform the tasks or functions;
- Lack of personal control;
- Inadequate support;
- Bad relationships between peers;
- Conflict of roles or lack of clarity;
- Violence (verbal or physical) by third parties.

Thus, this dimension of analysis evaluates factors who may induce psychosocial and stress risks.

1.1.5. Ergonomic Risks

Inadequate postures associated with repetitive tasks are often responsible for musculoskeletal-disorders that can cause loss of productivity and workers absence for long periods of time.

Many of the ergonomic hazards can be avoided if the work area is properly sized and suitable equipment is used (height of workplaces and desks, shelves and cabinets, etc.).

Some activities at Meat Products enterprises are carried outstanding, require a high body movement or, the use of force or range, requiring special attention.

More information:

<https://osha.europa.eu/pt/themes/musculoskeletal-disorders>

1.1.6. Electrical Risks

In the meat industry, electricity is undoubtedly the most important form of energy used. In fact, cold rooms, refrigerators, meat grinding machines, meat cutting machines, packaging machines, air conditioning, are examples of machines and electrical equipment present in these industries.

In parallel, the general and localized lighting is also electric.

The main risks associated with the use of electricity are direct and indirect electrical contacts, fire and explosion.

In this dimension of analysis, only the aspects related to the general installation are addressed, and the aspects related to the machines and equipment themselves are approached throughout the tool.

1.1.7. Safety Management of Machinery and Work Equipment

The use of electric machines and equipment, such as meat cutters, electric saws, choppers, mixers, may expose the workers to different risks, especially in terms of cuts, entanglements or electrical contacts. The prevention in these cases involves the acquisition of safe machinery and equipment (with CE marking), for their adequate maintenance, guarantee that the safety systems are still installed in the machines and also for the training of the workers in the safe use of these machines and equipment.

All of them carry potential risks to workers, so it is necessary to carry out a correct management of these machines and equipment to prevent accidents at work and occupational diseases.

This dimension of analysis will evaluate the general safety aspects of machines and tools in the workplace. The aspects covered are applicable to all existing machines in the enterprise, which should be the first to control, and then be possible to pass to the specific risks of different machines.

1.1.8. Personal Protective Equipment (PPE)

Personal protective equipment (PPE) should be the last resource to protect the health and integrity of workers.

Before adopting PPE, other protective measures should be adopted:

- Replace what is dangerous so it is safe from danger;
- Use of collective protection equipment (protection of machines and equipment, ...);
- Rotativity of workers.

In this dimension of analysis, it is intended that the enterprise evaluate the adequacy and use of PPE.

1.1.9. Containers Under Pressure

Some enterprises in the meat industry use gas under pressure, especially propane gas to power stoves. Equipment that has pressurized fluids are potential bombs that can explode causing a serious material and human damage.

In this context, it is important to analyze the main risk factors associated with the use of gas cylinders, contributing to the adoption of measures to improve working conditions.

1.1.10. Reception and Storage of Primary Materials – Stands and Shelves

Storage systems on stands or shelves are widely used in the industry. However, there may be quite different situations, in terms of height and in terms of load capacity.

The height and load capacity determine the equipment used, namely stairs/ladders or mechanical means, such as manual or electric pallet truck, stacker, among others.

The main risks are associated with the transportation and storage of materials, with special attention to the structures used, the manual handling of loads, the fall of materials and workers falls.

1.1.11. Reception and Storage of Primary Materials – Conservation Chambers

When moving the meat from and to the cold chambers, workers are subjected to very low temperatures, especially in the negative cold chambers where the temperature can drop to -30°C.

As the extremities of the body are cooled faster than the rest of the body, the fingers (hands and feet), as well as the head (nose, chin and ears), are the parts that suffer most from exposure to cold. Care should be taken to ensure that the skin temperature does not fall below 12°C so that the supply and use of protective clothing appropriate to the cold must be guaranteed.

At the same time, abrupt changes in temperature can cause different diseases, both respiratory, joint and muscular.

Another situation that could lead to consequences that could be serious or even very serious, is a possible imprisonment of the worker inside the cold room.

As with other machines, there are moving parts, such as the fan blades. If those parts are not protected can cause damage to the worker.

The main risks are associated to the transportation and storage of the materials, with special attention to the manual handling of loads, to the fall of materials and workers falls, to the discomfort or thermal stress.

1.1.12. Manufacturing Area - Surfaces and Work Plans

The design and organization of the manufacturing area must comply with principles that eliminate or minimize risks, in terms of surfaces and workplaces.

Effectively, an adequate, non-slip flooring, regular and with no level differences, provides safe travel. However, the absence of containers to receive enough waste and placed in convenient places (so that packaging or meat waste can be eliminated immediately), along with the lack of periodic cleaning routines, will quickly transform them into insecure floors.

Likewise, the lack of space organization, placing materials or work equipment in places of passage, will increase the risk of workers falling.

The organization is therefore decisive, and the workspace must be organized so that everything has a place (a place for each thing and everything in its place).

At the same time, close attention must be paid to workplaces to avoid dangerous postures and movements, which reduce productivity and cause accidents.

Thus, it is important to analyze the main risk factors associated with work surfaces and plans, contributing to the adoption of behaviors and measures to improve working conditions.

1.1.13. Manufacturing Area - Thermal Burns

In some enterprises, hot or very hot liquids may be used. The possible presence of live flame and surfaces at high temperature (from the stove), has associated risks of thermal burn in the workers.

Taking into account the seriousness of injuries caused by an accident involving contact with liquids and hot surfaces, preventive measures to avoid them are particularly important.

The proper organization of the workspace allows space between the different work areas or equipment, reducing the risk of contact with liquids or hot surfaces.

In the same way, knowledge and compliance with elementary safety rules allow reducing these risks.

Personal protective equipment may play an important role in eliminating residual risk.

It is therefore essential that workers know how to identify risk situations and know the rules and measures to be taken for safe work.

1.1.14. Manufacturing Area - Hand Tools

The use of sharp hand tools (eg knives and cutlery) takes particular care in view of their danger, which is reflected in the number of accidents involving the use of these tools. According to accident statistics, one of the main causes of accidents in this sector is the use of knives and other cutting tools. These accidents mainly hit the hands of the user himself. It is therefore crucial that workers are aware of the risks involved in using these tools as well as the rules for safe use.

1.1.15. Packaging Area

In this area of the production process, the products are packaged, which can be essentially manual or by using machines, such as the wrapping machine, the labeler or the palletizer.

There may be primary packaging - where the whole or sliced product is packaged - and secondary packaging - where the product is placed in boxes or bags. Then the palletization can be carried out, the boxes being grouped by product and/or customer and placed on pallets for later shipment.

In enterprises with predominantly manual processes, the existing risks are fundamentally associated with the ergonomic conditions of workplaces, such as the height of workplaces, static work carried out on foot or manual handling of loads (bending weight and frequency of movement).

In case the packaging process is eminently carried out using machines, to the risks associated with the ergonomic conditions of the works described above, also add the risks associated with the operation of machines (such as cutting, entrapment or crushing).

In this dimension of analysis, it is important to evaluate the main risk factors associated with existing work plans and machines, contributing to adopting appropriate control behaviors and measures.

1.1.16. Finished Product Storage – Stands and Shelves

The storage may be carried out on shelves or on pallet racks, and the packaging should be done by hand or with equipment intended for this purpose. Thus, according to the way this storage is carried out, there are different risks to which the worker will be subject.

Storage systems on stands or shelves are widely used at an industrial level, but there may be quite different situations, both in terms of height and in terms of load capacity.

The height and load determine the equipment used, namely stairs/ladders or mechanical means, such as manual or electric pallet truck, stacker, among others.

Taking into account these assumptions, there is the possibility of several risks occurring, which can result for the employee:

- Mucoeskeletal pain and lesions;
- Crushing;
- Light and severe injuries.

1.1.17. Finished Product Storage - Conservation Chambers

Regarding storage, some of the manufactured products are packaged and kept in positive or negative cold rooms, such as fresh meat. Other products are stored at room temperature.

When moving the meat from and to the cold chambers, workers are subjected to very low temperatures, especially in the negative cold chambers where the temperature can drop to -30°C.

1.1.18. Emergencies

Fires and explosions are examples of emergency situations with great destructive power, both in terms of loss of life and the level of material losses.

First of all, enterprises must assess the risks and implement measures that, on the one hand, reduce them and, on the other hand, be prepared to respond in the most appropriate way in an emergency, preserving lives and property.

Preparing to deal with emergency situations can mean the difference between life or death for workers, the reduction of material damage and even safeguarding the continuity of the enterprise.

In a first phase, enterprises should identify the potential emergency situations that may occur in their facilities (eg fire, explosion), and then adapt themselves in terms of human and material resources to deal with such emergency situations. Undoubtedly, the training and continuous information of workers have a key role to play in responding to the emergency.

This dimension of analysis covers fire prevention and fire safety, as well as assesses the level of response to emergency situations.

1.2 Rules for completing the checklist

In order to obtain correct results and to promote the easy use of the available risk assessment tool, there are a number of alerts that are considered important and for which the following explanations are given:

- ✓ Before starting to fill the checklist, the options are all "salmon" or "roasted yellow" (depending on the monitor) and only change to another color when the desired option is set (see Fig. 3). This function lets you check that you have not left any statements to evaluate.
- ✓ When placing a cross (X) in the correct option, all the options in this line change color, passing to a white background, as shown in the figure below:

The screenshot shows a Microsoft Word document with the following content:

+agro
Mais estratégia, Mais eficiência na Saúde e Segurança no Trabalho

Avaliação de Riscos

Esta ferramenta tem por objetivo auxiliar os empregadores na valiação dos principais riscos nas empresas de produtos cárneos, para que de forma rápida e simples, possam ser adotadas soluções para seu controle. Para uma avaliação mais detalhada aconselha-se o preenchimento da ferramenta OIRA "Produtos Cárneos" em:
<https://oiraproject.eu/pt/oira-tools>
<https://maisagro.pt/sst/ferramentas-computacionais-de-analise-de-perigos-e-riscos-em-pmes-do-setor-agroalimentar/>

Produtos Cárneos		Sim	Não	N/A
<small>Nota: Coloque X na opção correta.</small>				
1. GESTÃO DA SEGURANÇA E SAÚDE NO TRABALHO				
1.1	A empresa tem os serviços de segurança e saúde no trabalho organizados.	X		
1.2	Foram realizadas avaliações de riscos antes de se adotar as medidas de prevenção.			
1.3	Os trabalhadores são consultados, por escrito, pelo menos uma vez por ano em matérias de Segurança e Saúde no Trabalho.			
1.4	Os trabalhadores dispõem de formação e informação atualizada sobre Segurança e Saúde no Trabalho.			
1.5	É realizada a vigilância da saúde dos trabalhadores.			
1.6	Anualmente é preenchido e enviado o relatório único.			
2. INSTALAÇÕES				

Fig. 3 – Checklist's filling - Choose the correct option with an "X" (cross).

- When placing two or three options for the same assertion, the cells will change color, such as crosses, turning the background pink and the crosses to red color (see Fig. 4):

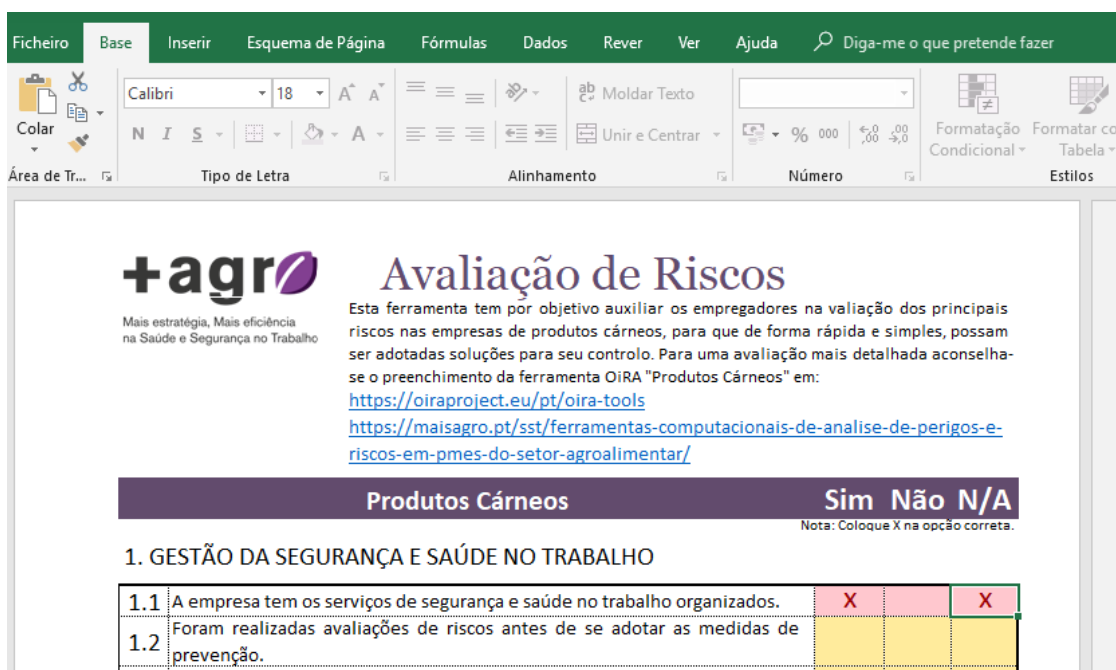


Fig. 4 – Checklist's filling - Error when placing two options at the same time.

When see the pink colored line and the red crosses, the user easily realizes that it should analyze the affirmation again and leave only one option.

- ✓ By filling in the checklist, the user can save the work done so that he can interrupt and resume this activity whenever he wishes. At the end of the checklist, there is a cell that updates the fill date whenever a recording is performed (see Fig. 5), so the user can always know when the file was last updated.
- ✓ In order to ensure that the results obtained for each analysis dimension reflect reality, the user must ensure that he/she responds to all statements, confirming that the option lines are blank with black crosses (see Fig. 5). In some situations, there may be a need to record everything in order to visualize this color change and validate the answers.

Ficheiro Base Inserir Esquema de Página Fórmulas Dados Rever Ver Ajuda Diga-me o que pretende fazer

+agro Avaliação de Riscos
Mais estratégia, Mais eficiência
na Saúde e Segurança no Trabalho

Produtos Cárneos **Sim Não N/A**
Nota: Coloque X na opção correta.

18. EMERGÊNCIAS

18.1	Existe um plano de ação ou instruções para fazer face às situações de emergência.	X		
18.2	Está definida uma estrutura para fazer face às emergências na empresa.	X		
18.3	As saídas de emergência estão sinalizadas, desobstruídas e são de fácil acesso para o exterior.	X		
18.4	Foram realizadas ações de formação sobre segurança contra incêndios, explosões e primeiros socorros.	X		
18.5	São organizados periodicamente simulacros de evacuação.	X		
18.6	Existem extintores em número suficiente e são adequados às classes de fogo existentes.	X		
18.7	A iluminação de emergência está instalada em toda a empresa e é inspecionada pelo menos uma vez por ano.	X		
18.8	Existe caixa de primeiros socorros com fácil acesso em caso de emergência.	X		

Responsável pela avaliação:	Data:
	06/09/2018

Fig. 5 –Checklist's filling - Date of filling / last recording.

- At the end of the checklist, there is also, beyond the date, a space for the signature of the person responsible for the evaluation (Fig. 5). This document can only be signed after it has been printed.

2. Risk Assessment Results

2.1 Synthesis of results

The synthesis of the results comes after completing the checklist and is presented by means of a 2D bar graph that allows us to quickly verify the enterprises' situation related to the 18 dimensions of analysis proposed, as shown in the following figure:

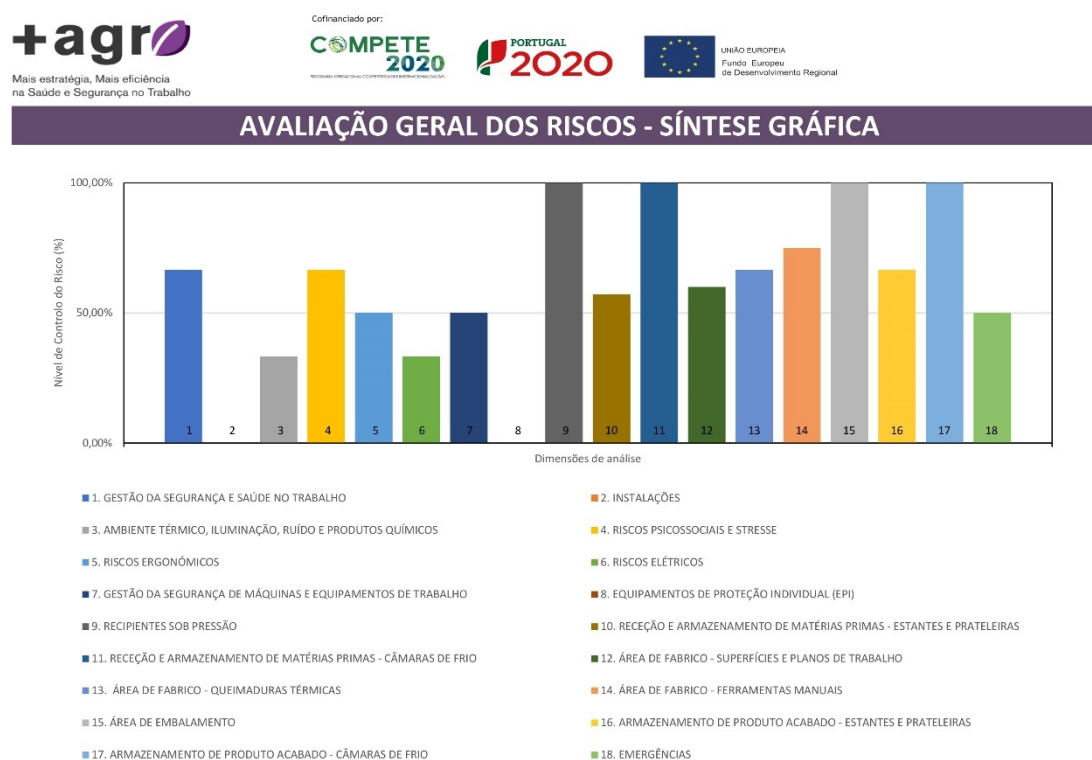


Fig. 6 –Graphical summary of the results - Risk Assessment Tool

In order to know the percentage obtained in each dimension of analysis, the user must place the cursor on the respective column and, thus, obtain the indication of the exact value (Fig. 7):

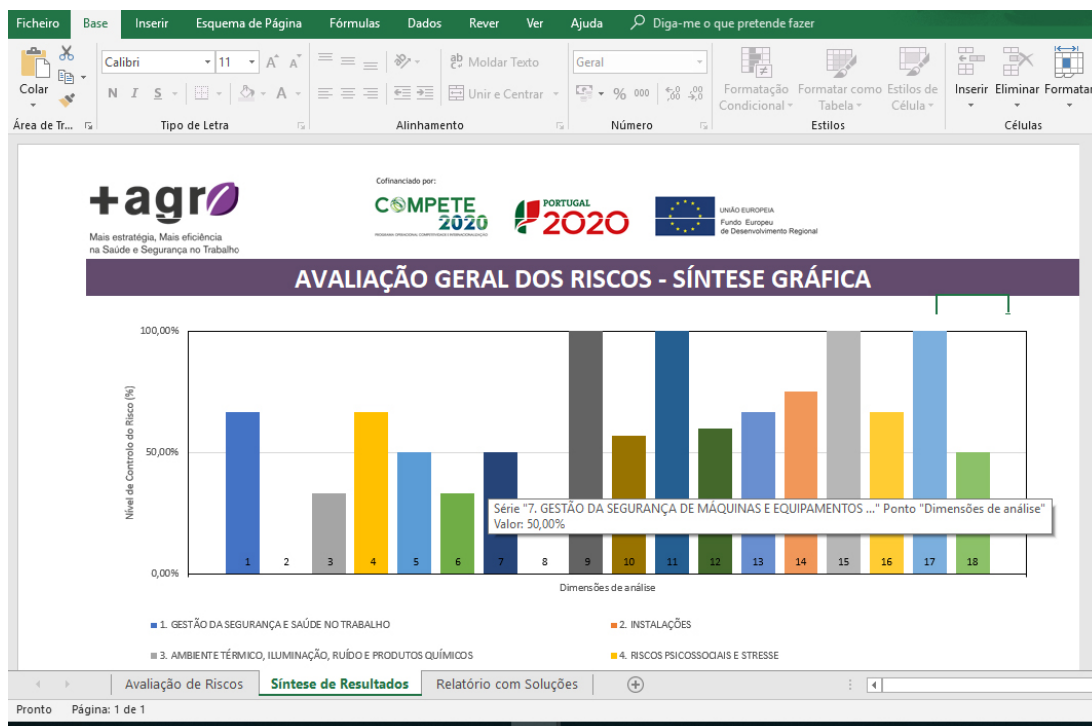


Fig. 7 – Graphical summary of the results - Levels of Risk Control (%).

Reading this graph should allow the user to make several observations:

- 1) In what dimensions of analysis the enterprise is at an adequate risk control level (in the example of Fig. 6 and Fig. 7 these dimensions are at 9 to 13, at 15 and 17);
- 2) In what dimensions of analysis will the enterprise have to make interventions because the risk control is deficient or does not exist (in the example of Fig. 6 and Fig. 7 this situation is registered in all dimensions with values less than 100 %).

In the case of the dimensions of analysis that fall under an adequate risk control situation, the enterprise should be vigilant to ensure that there are no changes that could interfere with current levels of control and to continue to adopt an attitude of improvement to be continued.

For dimensions with values below 100%, it is considered that risk control is not being adequate or efficient, and there is, therefore, a need to promote initiatives conducive to change.

Given that the enterprise may not carry out all necessary interventions simultaneously, it will be necessary to carry out a cross-analysis of this graph with

the solution proposals indicated for each statement in the "Report with Solutions" tab, and then make decisions based on an analytical reflection of the measures.

2.2 Report with solutions

After completing the checklist and careful reading of the graphical summary of the results, the user should consult the "Report with Solutions", in which you can find a set of options that will allow you to control the risk inherent in each statement whose answer fell to the option "No" (see Fig. 8).

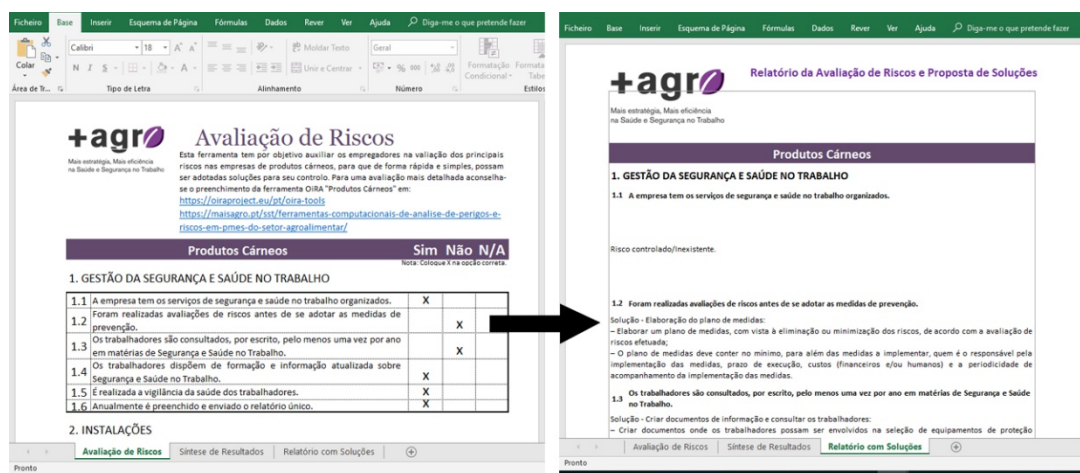


Fig. 8 – Report with Solutions - Proposals for solutions to situations where there is risk.

Thus, the report made available is not an end in itself but a window of opportunity for improving working conditions in the enterprise, by implementing measures that translate into adequate control of risks.

This tool should be used as a "rater" instrument and then the complete "diagnosis" can be made using the OiRA tool designed specifically for the Meat Products enterprises.

OiRA tools provide:

"- A document recording the results of the risk assessment that can be downloaded, edited and printed. This record can be used as a basis for the information to be passed to the persons concerned; for monitoring to assess whether necessary measures have been introduced; for evidence to be produced for supervisory authorities; and for any revision if circumstances change.

- An action plan (that can also be downloaded, edited and printed) focusing on the preventive measures to be implemented, who does what by when, etc.

- An overview of all the risks. This record can be used as a basis for passing information to the people concerned and for monitoring whether or not risks identified and measures to be taken are dealt with properly.

*- An overview of the preventive and protective measures to be implemented. This record can be used as a basis for passing information to the people concerned and for monitoring the measures to be implemented in the forthcoming three months."*¹

OiRA tools have periodic updates, thus as changes of legislation, development of new examples of good practice, ensuring that they are always up to date.

¹ <https://oiraproject.eu/pt/oir-a-faqs>

Para mais informações sobre o projeto,
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