

WORKPLACE

LINE OPERATOR

RISK ASSESSMENT

WORK PROCESS

Personnel comes at work, goes through filter, undresses, changes his personal clothing with work equipment and only now they can enter to the production lines areas.

WORK SYSTEM COMPONENTS

WORK MEANS

- Animal carcass
- Different types of knives
- Product hooks
- Belt with support for knife
- Hatchet
- Product transport boxes

WORK ENVIRONMENT

- The activity happens inside the slaughterhouse, where the temperature is around 10°C.
 - Air temperature is controlled by the existing HVAC system.
 - Activity happens under artificial illumination.
 - Humidity is high due to usage of water in the cleaning process.
 - Areas are mainly wet due to usage of water in the cleaning process.
- *mineral water is given to keep thermal equilibrium of workers' organisms*

WORK TASKS

Operations:

- Feeding animals from stunning area – stabbing platform – and blood draining.
- Animal transport is performed via automated conveyor with hooks.
- Inside the stabbing area, work with knives are forbidden unless kept in support.
- De-carcassing the animals is done with supplementary precaution.
- Before skin removal, operator checks that the animal is well hooked.
- While working on moving carcasses the workers should always look into the conveyors' direction in order to avoid hitting colleagues.
- It is forbidden to overload the conveyors.
- Before starting work, the place will be checked to comply with standards.
- It is forbidden to point the knife towards other workers.
- PPE for arm, abdomen and forearm must be worn in the stabbing process.
- During collection of glandes, any other activity will be stopped.
- It is forbidden to use more than 1 tool in one hand.
- Before using the hatchet:
 - o Handle will be always checked.
 - o It is mandatory to have clean hands and handle.
 - o It is forbidden to come near to the activity area.
- Organ extraction will be done with supplementary precaution.
- Medical examination is periodically done depending on the type of job.

- In case of small emergencies, the victim will be at first transported to the first aid area.
- No machinery will be left working after leaving the workplace.
- Any cutting will be done towards outer areas not towards the workers.

Any operator is forbidden to use machinery or other equipment that he/she is not qualified for.

PERFORMER

Operator is a non-qualified worker and is trained specific standard operating procedures in order to perform in this specific domain.

He/she has to be physically and psychically capable to do the job (medical statement).

He/she is responsible for his/her own errors, mistakes or negligences.

RISK FACTORS

WORK MEANS

➤ **MECHANICAL RISK FACTORS**

- Blocking or crushing superior or inferior members when working with automated equipment.
- Hitting or crushing any body part during home-work travel.
- Hitting or crushing any body part with automobile/truck handling.
- Falling objects from height (this can include spare parts, equipment parts, heavy objects).
- Falling products from height, carcasses from hook conveyor.
- Carcass balance/vibrations on the conveyor with hooks.
- Water spillage due to pipe cracking.
- Improper work surfaces (slippery, wet, cutting edges)
- Accidents with automobiles or trucks during deliveries.
- Accidents with automobiles or trucks during unloading activities.

➤ **THERMAL RISK FACTORS**

- Direct hot surfaces contact.
- Low temperature of metallic structures during winter and also entering into the refrigerated room.
- Fire caused by electrical failures.

➤ **ELECTRICAL RISK FACTORS**

- Electrocution due to touching visible (not insulated) wires while working with machinery or automated equipment.
- Electrocution due to indirect touch or step voltage, improper conditions of earthing, wiring and systems.

➤ **CHEMICAL RISK FACTORS**

- Exposure and inhalation of cleaning substances used during cleaning of the hall.

➤ **BIOLOGICAL RISK FACTORS**

- Viruses, microorganisms, bacteria, fungus that come from air or animals.

WORK ENVIRONMENT

➤ PHYSICAL RISK FACTORS

- Exposure to harsh and extreme environments: very low temperature.
- Exposure to harsh and extreme environments: very high humidity.
- Insufficient illuminated areas that force workers to adopt difficult positions.
- Natural disasters, hail, storms, earthquakes.
- Improper preparation of work space.

WORK TASK

➤ PHYSICAL OVERWHELM

- Very high magnitude of force applied when pulling, pushing, lifting weights.
- Predominant standing position.
- High periods of sitting and difficult orthostatic positions.
- Working in the same workplace and positions and in the same static positions for longer periods of time.
- Visual overwhelm.

➤ PSYCHICAL OVERWHELM

- Taking decisions in short periods of time.
- Repetitive movements during the exposed period.
- Stress due to very heavy workload, managers or other colleagues' bullying and intimidation.
- Repetitive movements of joints.

WORKER

➤ ERRORS

- Showing at work under improper conditions of fatigue, stress, alcohol use.
- Acting in other way than legal requirements.
- Entering in forbidden areas or in areas with hazards that are signaled.
- Non-sync when working in teams.
- Entering in dangerous areas on walking pathways.
- Overloading the conveyors with products.
- Falling from same height, tripping.
- Falling from height.

➤ NEGLIGENCES

- Forgetting to use personal protective equipment or other engineering safety measures/devices.

***		EVALUATION OF WORKPLACE POSITION OPERATOR	DURATION OF EXPOSURE TO RISKS: 8 h/day			
NON-QUALIFIED WORKER			EVALUATION TEAM: Evaluator, OSH Expert, Owner, External Service.			
OPERATOR						
WORK SYSTEM COMPONENTS	RISK FACTORS	CONCISE DESCRIPTION OF RISK FACTORS, INCLUDING PARAMETERS WHERE APPLICABLE	WORST CASE SCENARIO	GRAVITY	PROBABILITY	RISK LEVEL
0	1	2	3	4	5	6
WORK MEANS	MECHANICAL RISK FACTORS	- Blocking or crushing superior or inferior members when working with automated equipment.	Death	7	1	3
		- Hitting or crushing any body part during home-work travel.	Death	7	2	4
		- Hitting or crushing any body part with automobile/truck handling.	Death	7	1	3
		- Falling objects from height (this can include spare parts, equipment parts, heavy objects).	Death	7	1	3
		- Falling products from height, carcasses from hook conveyor.	LTI 3-45 days	2	2	2
		- Carcass balance/vibrations on the conveyor with hooks.	LTI 3-45 days	2	2	2
		- Water spillage due to pipe cracking.	LTI 3-45 days	2	5	3
		- Improper work surfaces (slippery, wet, cutting edges)	LTI 45-180 days	3	6	4
		- Accidents with automobiles or trucks during deliveries.	Death	7	1	3
		- Accidents with automobiles or trucks during unloading activities.	Death	7	1	3
	ELECTRICAL RISK FACTORS	- Electrocutation due to touching visible (not insulated) wires while working with machinery or automated equipment.	Death	7	2	4
		- Electrocutation due to indirect touch or step voltage, improper conditions of earthing, wiring and systems.	Death	7	1	3
	CHEMICAL RISK FACTORS	- Exposure and inhalation of cleaning substances used during cleaning of the hall.	Death	7	1	3
	THERMAL RISK FACTORS	- Direct hot surfaces contact.	LTI 3-45 days	2	2	2
		- Low temperature of metallic structures during winter and also entering into the refrigerated room.	LTI 3-45 days	2	5	3
- Fire caused by electrical failures.		Death	7	2	4	
BIOLOGICAL RISK FACTORS	- Viruses, microorganisms, bacteria, fungus that come from air or animals.	LTI 45-180 days	3	5	4	
WORK ENVIRONMENT	PHYSICAL RISK FACTORS	- Exposure to harsh and extreme environments: very low temperature.	LTI 3-45 days	2	6	3

		- Exposure to harsh and extreme environments: very high humidity.	LTI 45-180 days	3	4	3
		- Insufficient illuminated areas that force workers to adopt difficult positions.	LTI 45-180 days	3	4	3
		- Natural disasters, hail, storms, earthquakes.	Death	7	1	3
		- Improper preparation of work space.	LTI 3-45 days	2	2	2
	PHYSICAL OVERWHELM	- Very high magnitude of force applied when pulling, pushing, lifting weights.	LTI 3-45 days	2	4	2
		- Predominant standing position.	LTI 45-180 days	3	5	4
		- High periods of sitting and difficult orthostatic positions.	LTI 45-180 days	3	4	3
		- Working in the same workplace and positions and in the same static positions for longer periods of time.	LTI 45-180 days	3	4	3
		- Visual overwhelm.	LTI 3-45 days	2	5	3
WORK TASKS	PSYCHICAL OVERWHELM	- Taking decisions in short periods of time.	LTI 3-45 days	2	4	2
		- Repetitive movements during the exposed period.	LTI 3-45 days	2	4	2
		- Stress due to very heavy workload, managers or other colleagues' bullying and intimidation.	LTI 45-180 days	3	3	3
		- Repetitive movements of joints.	LTI 45-180 days	3	4	3
WORKER	ERRORS	- Showing at work under improper conditions of fatigue, stress, alcohol use.	LTI 3-45 days	2	2	2
		- Acting in other way than legal requirements.	Death	7	2	4
		- Entering in forbidden areas or in areas with hazards that are signaled.	LTI 3-45 days	2	2	2
		- Non-sync when working in teams.	LTI 3-45 days	2	2	2
		- Entering in dangerous areas on walking pathways.	Death	7	1	3
		- Overloading the conveyors with products.	LTI 3-45 days	2	5	3
		- Falling from same height, tripping.	LTI 45-180 days	3	5	3
		- Falling from height.	Dis. Gr. III	4	3	4
	NEGLIGENCE	- Forgetting to use personal protective equipment or other engineering safety measures/devices.	Death	7	2	4

Global risk level is:

$$N_{rg} = \frac{\sum_{i=1}^{40} R_i r_i}{\sum_{i=1}^{40} r_i} = \frac{0(7 \times 7) + 0(6 \times 6) + 0(5 \times 5) + 9(4 \times 4) + 21(3 \times 3) + 10(2 \times 2) + 0(1 \times 1)}{0 \times 7 + 0 \times 6 + 0 \times 5 + 9 \times 4 + 21 \times 3 + 10 \times 2 + 0 \times 1} = \frac{373}{119} = 3,13$$

PARTIAL RISK LEVELS PER FACTORS

Operator

Global risk level: 3,13

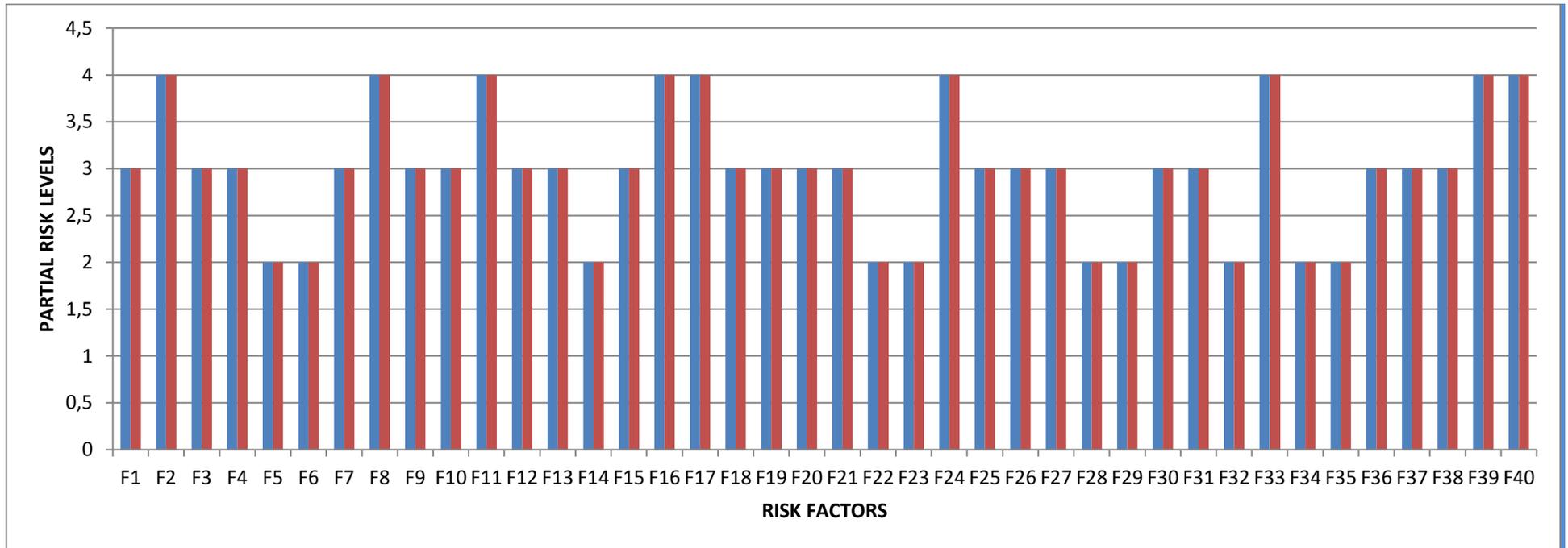


FIGURE LEGEND

F1	- Blocking or crushing superior or inferior members when working with automated equipment.
F2	- Hitting or crushing any body part during home-work travel.
F3	- Hitting or crushing any body part with automobile/truck handling.
F4	- Falling objects from height (this can include spare parts, equipment parts, heavy objects).
F5	- Falling products from height, carcasses from hook conveyor.
F6	- Carcass balance/vibrations on the conveyor with hooks.
F7	- Water spillage due to pipe cracking.
F8	- Improper work surfaces (slippery, wet, cutting edges)
F9	- Accidents with automobiles or trucks during deliveries.
F10	- Accidents with automobiles or trucks during unloading activities.
F11	- Electrocutation due to touching visible (not insulated) wires while working with machinery or automated equipment.
F12	- Electrocutation due to indirect touch or step voltage, improper conditions of earthing, wiring and systems.
F13	- Exposure and inhalation of cleaning substances used during cleaning of the hall.
F14	- Direct hot surfaces contact.
F15	- Low temperature of metallic structures during winter and also entering into the refrigerated room.
F16	- Fire caused by electrical failures.
F17	- Viruses, microorganisms, bacteria, fungus that come from air or animals.
F18	- Exposure to harsh and extreme environments: very low temperature.
F19	- Exposure to harsh and extreme environments: very high humidity.
F20	- Insufficient illuminated areas that force workers to adopt difficult positions.
F21	- Natural disasters, hail, storms, earthquakes.
F22	- Improper preparation of work space.
F23	- Very high magnitude of force applied when pulling, pushing, lifting weights.
F24	- Predominant standing position.
F25	- High periods of sitting and difficult orthostatic positions.
F26	- Working in the same workplace and positions and in the same static positions for longer periods of time.
F27	- Visual overwhelm.
F28	- Taking decisions in short periods of time.
F29	- Repetitive movements during the exposed period.
F30	- Stress due to very heavy workload, managers or other colleagues' bullying and intimidation.
F31	- Repetitive movements of joints.
F32	- Showing at work under improper conditions of fatigue, stress, alcohol use.
F33	- Acting in other way than legal requirements.
F34	- Entering in forbidden areas or in areas with hazards that are signaled.
F35	- Non-sync when working in teams.
F36	- Entering in dangerous areas on walking pathways.
F37	- Overloading the conveyors with products.

F38	- Falling from same height, tripping.
F39	- Falling from height.
F40	- Forgetting to use personal protective equipment or other engineering safety measures/devices.

LIST OF MEASURES FOR: OPERATOR

Item	RISK FACTOR	Risk Level	Proposed Measures
0	1	2	3
1.	MEANS OF PRODUCTION	4	OM: SOP to follow local national traffic rules.
2.	WORK ENVIRONMENT	4	TM: Rigorously give PPE based on all activities in the farm, based on a system in place. OM: Training workers on how to use tools and the local updated legislation.
3.	WORK TASK	4	OM: SOP to regularly check electrical installation and before starting to work TM: Changing and updating safety systems: <ul style="list-style-type: none"> - Changing type of fuses used. - Update fire protection measures.
4.	WORKER	4	TM: Where it is the case, installing guards that protect the workers from moving parts, where applicable, and also update protection systems of the machines. OM: Regularly updating the periodical training system and trainings on: <ul style="list-style-type: none"> - Using correctly any equipment. - Using correctly any safety system of the equipment.

SUMMARY

The global risk level calculated for this work place **Operator** is **3.13**, which ranks it as acceptable risk work place, as it is not reaching maximum limit of 3.50.

The result of the evaluation is that 9 risk factors reach minimum 4 as the grade for partial risk level.

Risk factors that are ranked as “not accepted” are:

Item	RISK FACTOR	PARTIAL RISK LEVEL
1.	Hitting or crushing any body part during home-work travel.	4
2.	Improper work surfaces (slippery, wet, cutting edges)	4
3.	Electrocution due to touching visible (not insulated) wires while working with machinery or automated equipment.	4
4.	Fire caused by electrical failures.	4
5.	Viruses, microorganisms, bacteria, fungus that come from air or animals.	4
6.	Predominant standing position.	4
7.	Acting in other way than legal requirements.	4
8.	Falling from height.	4
9.	Forgetting to use personal protective equipment or other engineering safety measures/devices.	4

In order to minimize the effects of these 9 risk factors, there are measures proposed in the **List of measures**.

In terms of categories, risk factors are as follows:

- 17 risk factors of **means of production, 42 %**
- 9 risk factors of **work environment, 23 %**
- 4 risk factors of **work tasks, 10 %**
- 10 risk factors of **worker, 25 %**

It can be stated that, from evaluation, 15 risk factors can result in irreversible effects to the workers, mainly death, and they represent 38 % of the total risk factors.

PIE CHART OF RISK FACTORS

PROFESSION – OPERATOR
GLOBAL RISK LEVEL: 3,13

