

Guidelines on Health and Safety for Pest Control Operators.

Food and Environmental Hygiene Department
Super Patra Pest Control Services

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1. INTRODUCTION

This set of guidelines, designed for pest control workers, aims to enhance their awareness of safety and health hazards at work and advises them on precautionary measures so as to prevent any accidental poisoning or harm to health.

Pest control workers often have to apply pesticides in places like godowns, factories, food premises, offices, household units, parks etc. In the course of their work, they may be exposed to various safety and health hazards arising from:

- Inhalation of pesticides
- Contraction of diseases
- Pest attack
- Adverse working environment
- Dangerous manual handling operation

- Fire and explosion

2. SAFETY AND HEALTH HAZARDS THAT PEST CONTROL OPERATORS ARE EXPOSED TO

1. Pesticide poisoning

Those pesticides as used by pest control workers are substances for repelling, killing or preventing pests. They destroy pests by restraining their central nervous system or circulatory system, or damaging their major organs. Therefore, pesticides are normally harmful to humans and animals alike.

Exposure to excessive pesticides may lead to acute poisoning, chronic poisoning or allergic reactions. Pesticides which cause irritation or corrosion can damage the eyes and skin directly.

1.1 Routes of entry of pesticides into body

- Workers can be exposed to pesticides in three ways:
- Dermal exposure
- Oral exposure
- Inhalation exposure

1.1.1 Dermal exposure

Pesticides may be absorbed through intact or broken skin. Therefore, one should:

- avoid coming into direct skin contact with pesticides
- not wear clothing contaminated with pesticides
- avoid exposure to pesticide droplets or vapours

1.1.2 Oral exposure

Pesticides can enter the body through the digestive system. Thus,

- after coming into contact with pesticides, one should not drink, eat or smoke until having cleaned their hands and faces
- pesticide containers should be clearly labelled to avoid accidental swallowing of pesticides
- one should avoid contamination of food by pesticides

1.1.3 Inhalation exposure

Volatile or aerosol pesticides can enter the body through the respiratory system. Therefore, one should:

- maintain good ventilation
- use protective respirators properly
- prevent pesticides from spreading through the ventilation system

1.2 Symptoms of poisoning

Symptoms depend on the toxicity of the pesticide as well as dose and mode of intake. Common symptoms include:

- headache, giddiness, nervousness
- a feeling of general numbness
- diarrhoea, vomiting
- contraction of eye pupils
- excessive sweating, tearing, saliva secretion

Severe cases may include the following symptoms:

- irregular heart beat
- breathing difficulty
- convulsion
- confusion
- coma

1.3 Safe practice in using pesticides

1.3.1 Risk assessment

Unnecessarily using pesticides may increase the hazards to humans, animals and the environment. Consider other effective pest control measures before resorting to the use of pesticide. If no alternative is practicable, avoid causing damage to the environment or hazards to human and animal health when using pesticides.

Points to note when conducting risk assessment on the use of pesticides:

- The pesticide is permitted by law for the intended purpose.
- The user has adequate safety training.
- Adequate safety measures have been put in place.
- The pesticide can be used at the place and time planned for its application.
- The pesticide poses least risk to humans, animals and the environment.

1.3.2 Precautionary and control measures

Selecting pesticides

- The pesticides must have been registered in Hong Kong and are clearly labelled in accordance with the law.
- Select the pesticides with least harmful effect on humans, animals and the environment.

Storing pesticides

- Do not store pesticides together with food, drinks or feed.
- Keep pesticides out of reach of children.

- Lock the room or cabinet keeping pesticides. Only designated personnel can keep the key.
- Those pesticides which are listed as dangerous goods must be stored in dangerous goods store if the storage amount exceeds the exemption level.
- Check the store regularly and keep the storage record.
- Undiluted pesticides should be handled by designated personnel only.

Transporting pesticides

- Transport pesticides with safe containers.
- Take care when transporting pesticides to avoid spillage.
- Pesticides as well as any equipment or protective gear contaminated with pesticides must be kept separately with other articles to avoid contamination.

Diluting and preparing pesticides

- Check all equipment and tools to ensure that they are in good working conditions. If there are any cracks or defects, stop using them and arrange replacement or repair.
- Read carefully the user's guide and the label of the pesticide for understanding thoroughly the safe use of the pesticide.
- Wear appropriate protective gear such as working clothes, PVC aprons, goggles, gloves, protective respirators etc.
- Dilute or prepare the pesticide accurately in accordance with the manufacturer's instructions. Prepare the pesticide in a well-ventilated location where no other people is unnecessarily present.
- Stay upwind and take care during work to avoid spillage or leakage of the pesticide.
- Thoroughly clean the working tools, working tables and floor surfaces on completion of the procedures.

Application of pesticide

Inform all those who may be affected by the application of pesticide of the work arrangements and the safety measures to be taken.

- Ask everyone except the pest control workers to leave the scene.
- Remove food, utensils, crockery and pets before applying the pesticide.
- Switch off the air conditioners and cover up the ventilation openings.
- Extinguish all kindling materials.
- Wear appropriate protective gear such as working clothes, PVC aprons, goggles, gloves, protective respirators etc.
- Strictly adhere to the operational safety guidelines and the instructions on the label of the pesticide for application.
- Select the appropriate nozzle and adjust spray pressure accurately to avoid "over-spray" of pesticide.
- Avoid applying the pesticide to the area indiscriminately.
- Do not apply pesticide in liquid or powder formulation outdoors under strong wind.

After application of pesticide

- Clean up spills of pesticide.
- Clear up the unused pesticide and all the equipment.
- Fill in the record on application of pesticide.
- Advise the venue users on the safety measures for using a pesticide-treated venue. For instance, users should not return to the venue until it has been ventilated for a period of time.

- Wash your hands, face and skin that may be contaminated by pesticide with water and soap.
- Clean the equipment thoroughly after returning to the office.

Disposal of pesticide containers and unused pesticides

- Pesticide containers except those containing compressed aerosol pesticides should be rinsed several times with water and punctured or crushed before disposal to make them unfit for further use that may result in accidental poisoning.
- The pesticide waste should be handled in accordance with the Waste Disposal (Chemical Waste) (General) Regulation enforced by the Environmental Protection Department to avoid damaging the local ecology.

Personal protection

- As a supplement to inadequate preventive measures, personal protective equipment is the last defence against using pesticides. The equipment serves to protect your skin, eyes, personal clothing from contamination by the pesticide and to prevent inhalation of the same. Working clothes, PVC aprons, masks or hats, goggles, gloves, protective respirators etc. are the commonly used personal protective equipment against pesticide hazards.
- To provide effective protection for the workers, choose the appropriate personal protective equipment with reference to the information provided by the manufacturers and suppliers. The workers should also know the correct way of using and maintaining the equipment. Cracked or damaged equipment should be replaced.
- The pesticides should be stored separately from the personal protective equipment and other articles to avoid contamination.
- Wash the personal protective equipment immediately after use. Working clothes should be washed every day with soap or washing powder and separately from ordinary clothing.

Personal hygiene

- Do not drink, eat or smoke when handling pesticides.
- Do not touch the face and skin with contaminated hands or gloves.
- Wash your hands and face with water and soap immediately after using pesticides.

First aid

- First aid is merely a temporary measure to relieve the symptoms of the victim who should be taken to the hospital as soon as possible. The label of the pesticide should be brought along to the hospital for the doctor's reference.
- Follow the directions of the manufacturer or supplier of the pesticide when giving first aid.

2. Other safety and health hazards

2.1 Contraction of infectious diseases

Frequent visits to pest-infested places to perform their work render pest control workers more susceptible to pest-borne diseases. The excrement and urine from rodents and the excrement from fleas often carry viruses, bacteria as well as pathogens such as rickettsiae. Inhalation of dirt and dust containing flea and

rodent excrement or exposure of wounds to such dirt and dust can cause illnesses. Flea, tick and mosquito bites also spread diseases.

Pest-borne diseases include Hantaan Fever, Murine Typhus, Boutonneuse Fever, Leptospirosis, Malaria and Dengue Fever, etc.

Precautionary and control measures

- Disinfestation of fleas should be carried out, if practicable, prior to any anti-rodent work.
- Apply flea or mosquito repellent on clothing or exposed skin as necessary.
- Avoid as far as possible direct skin contact with anything that may contain pathogens, e.g. the bodies and excrement of pests and soiled water.
- Wounds should be covered with water-proof sterilized dressing.
- Wear long-sleeved clothing and put on personal protective equipment such as plastic gloves, boots, aprons, protective respirators, etc.
- Strictly observe personal hygiene.

2.2 Pest attack

In the course of disinfestation, pest control workers are prone to being bitten by rodents and mosquitoes, or stung by wasps.

Precautionary and control measures

Attack by rodents - use long pliers to fetch rodents caught.

Attack by wasps - cover your whole body by wearing thick long-sleeved overalls, gloves and beekeeper's veil. People not taking part in the operation should stay away from the site under disinfestation or remain indoors.

Attack by mosquitoes - apply mosquito repellent on the skin.

2.3 Adverse working environment

Pest control workers often have to work in places of adverse environment. They have to work, for example, in slippery kitchens, damp back lanes, dingy and poorly ventilated godowns, workplaces full of odds and ends, and construction sites with uneven ground surface, etc. Working in these adverse environments increases the chance of workers getting hurt by slipping, bumping and spraining themselves, and contracting infectious diseases.

Precautionary and control measures

Before commencing work at a new site, the supervisor should assess the working environment in the first instance to see if there would be any safety or health hazards posed to the workers. He/She should then take appropriate measures to reduce the hazards, and inform the workers of those hazards and the arrangements made, e.g.

- arranging additional lighting
- removing objects which cause obstruction to work

- providing the workers with and ensuring that they would put on suitable personal protective equipment, such as safety shoes and protective respirators

2.4 Manual handling operations

As pest control workers often have to carry a lot of equipment and pesticides to work in different places throughout the territory, it is inevitable that they frequently need to lift heavy objects. Workers' attention should therefore be drawn to the fact that they are liable to sustaining physical injury if the ways they adopt in manual handling operations are improper.

Risk factors contributing to greater chances of workers sustaining injury may include the following examples:

- lifting objects with a poor posture, e.g. bending the body or twisting the back
- using force in a rapid manner
- making certain movements over a long period of time or repeating the same movements many times
- moving an object which is too heavy or with a smooth surface
- inadequate physical strength of the worker
- uneven, slippery or irregular ground surface and narrow space

Precautionary and control measures

Before commencing a manual handling operation, assessment should be made to take into account all risk factors. Appropriate precautionary measures should be taken and the workers should be duly informed.

The precautionary measures may include:

- using suitable containers to carry the equipment and pesticides
- using handcarts
- lifting heavy objects by more than one worker
- lifting heavy objects with a correct posture

2.5 Fire and explosion

Many pesticides need to be diluted with such inflammable liquids as petrol or kerosene, so they carry the risk of fire or explosion. Compressed aerosol pesticides in canned form also contain inflammable liquids and have the same kind of risk.

Precautionary and control measures

- Pesticides should not be stored under strong sunlight or high temperature.
- Smoking and the use of naked flame should be prohibited in the storage area and the place where pesticides are being applied.
- Never spray pesticides onto places where the temperature is high, a flame is burning, or an electrical appliance is operating.
- Be always equipped with suitable fire-extinguishers.
- Keep the means of escape clear and know the route well.

1.2 Employee's Responsibility

