

## Personal Protection

### [Objective of Protection](#)

[Protection by Hygiene: Washing](#)

[Protection by Hygiene: Eating, Smoking and Drinking at Work](#)

[Protection by Hygiene: Good Personal Practices to Reduce Contamination](#)

[Protection of the Body: Main Part of the Body](#)

[Protection of the Body: The Head and Neck](#)

[Protection of the Body: Lower Legs and Feet](#)

[Protection of the Body: The Hands](#)

[Protection of the Body: The Eyes](#)

[Protection of the Body: The Lungs](#)

[Protection of the Body: Washing of Body and Equipment](#)

## Objective of Protection

Personal protection has only one objective: **To keep the exposure of workers handling a pesticide as low as possible.**

Personal protection does not benefit anyone except the person who uses it.

## Supplementary points:

- Personal protection is used in many industries, and is an important part of the control of many environmental hazards.
- In handling pesticides, it is important to avoid absorption through the skin, the eyes and by the mouth. With some formulations, protection of the lungs is necessary.
- Whenever any pesticide formulation is used, good hygiene is essential.
- Some type of protective clothing is always needed even if it is only everyday working clothing. The use of other items will depend on the hazards of the formulation being handled. The exact type of protective equipment required for handling and application of a product is generally shown on the product label and associated pictograms.

### **Other information:**

A trainer should emphasize that all workers should know the danger of the work they are doing and that they should be aware of necessary precautions to observe and personal protection to be used.

The trainer should also make it clear that it is the responsibility of the employer to provide correct information to workers. If special protective equipment is needed, the employer should provide this, instruct the workers in its proper use, and see that it is maintained and replaced if faulty.

### **Washing**

In addition to wearing personal protective equipment and following the label when working with pesticides, one key way to reduce exposure is to make sure you properly clean yourself following each contact with a pesticide.

Using soap will be most effective especially if the formulation is oily.

Any pesticide on the skin should be washed off immediately.

**ALWAYS WASH HANDS, ARMS and FACE**

- Before eating
- Before drinking
- Before smoking
- Before using chewing products
- Before traveling back to base
- Before urinating



At the end of the day **TAKE A BATH OR SHOWER.**

### **Supplementary points:**

- Hand sprayers can sometimes wash their hands and arms each time the pump is refilled.
- Use clean water for washing, but do not wash in streams or in drains that enter directly into streams. If there is little or no water at the application site, it should be taken to the field in a clean drum, preferably fitted with a tap.

## **Eating, Drinking and Smoking at Work**

No one should eat, drink, smoke or use chewing products while handling pesticides without first washing hands, arms and face in clean water, preferably with soap.

*Personal hygiene is of utmost importance when using pesticides*



When working with pesticides do not eat, drink, smoke or use chewing products.

Always wash hands and face before eating, drinking, smoking, using chewing products or going to the toilet.



Do not touch the face or other bare skin with soiled hands or gloves

After working with pesticides wash thoroughly.

Wash work clothes every day, separately from other clothing

### **Supplementary points:**

- Workers handling pesticides should not smoke at all while at work. If they are allowed to smoke during a work pause, they should first wash their hands, arms and face in clean water.
- If food is carried to the field, it should be carried in a container with a tight fitting lid.

### **Good Personal Practices to Reduce Contamination**



Basic principles such as the ones enumerated below are easily overlooked by pesticides users. These simple practices, if followed, can greatly reduce the cases of fatalities related to the use of pesticides.



When pouring and mixing the concentrated product avoid splashing or spilling on to skin or clothing. If any product falls on the skin, or into the eyes, wash it off as soon as possible.

Heavily contaminated clothing must be removed and washed with detergent and water.



Use suitable equipment for measuring out and transferring the product. Never use hands as scoops or for stirring liquids.

Use correct application equipment, maintain it properly and it correctly.



Do not use leaky equipment; leaks cause skin contamination.



Do not attempt to blow out clogged spray nozzles with the mouth.



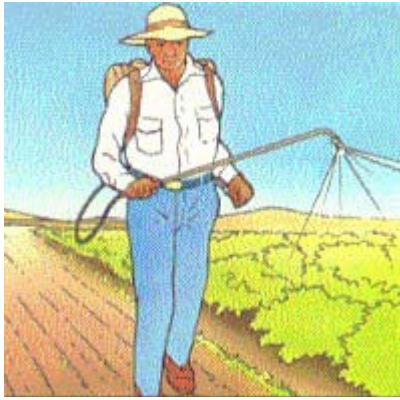
Clean them with water or a soft probe such as grass stem.

### **Supplementary points:**

- Workers handling pesticides should not smoke at all while at work. If they are allowed to smoke during a work pause, they should first wash their hands, arms and face in clean water.
- If food is carried to the field, it should be carried in a container with a tight fitting lid.

### **Protection of the Body**

For the protection of the main part of the body, **the aim is to cover as much skin as possible with suitable material** to prevent the skin from being contaminated by pesticide.



A long sleeve overall or shirt and full length trousers are the best ways of protecting the body. They cover about 85% of the skin.

**Clothing which becomes soaked with a pesticide is no protection** and can increase absorption. It should be changed immediately.

#### Supplementary points:



Alternative to overalls. This gives greater flexibility because the top or the trousers can be worn separately or together over normal work clothing according to the type of pesticide operation. For tropical conditions, cotton is the most comfortable material and is readily available in most places



Work clothing must be kept in a good state of repair so that there are no tears or worn areas through which pesticide products can cause skin contamination.



Where possible use a pesticide formulation which does not require the wearing of additional items of protective clothing. If this is not possible then apply the pesticide during the cooler hours of the day when it is more comfortable to wear protective clothing.





Some local clothing styles give good coverage of the body and are acceptable as work clothing.

Cigarettes, chewing materials, or any type of food should not be carried in the pockets of overalls, except in containers with tight fitting lids.

**Other information:**

White overalls have the advantage of showing up contamination.

When conducting training in this topic the trainer should discuss the clothing worn locally and the advantages and disadvantages of each type?

## Protection of the Head and Neck

Protection of the head and neck is needed when using pesticide formulations of slight, moderate or high hazard.



Because fine spray and dust particles are effectively caught in the hair, and the scalp is very sensitive to contamination, it is advisable to cover the hair at all times when handling pesticides. Wearing an easily washable cotton cap or scarf is recommended. A wide-brimmed, waterproof hat without a sweatband gives additional protection of the neck.

### Supplementary points:

- All head gear should be washed daily and immediately after applying pesticides. If head gear becomes heavily contaminated (direct spray, spills, etc.) it should be washed immediately.
- Pest control operators using highly hazardous liquid formulations should wear a full head covering of impermeable material, incorporating a transparent panel. This should be worn loose over the shoulders and not tucked into the clothing. An independent air supply is needed for fumigation.

## Protection of Lower Legs and Feet

The skin of the lower legs and feet can be contaminated during pesticide application especially by spray or by wading through vegetation that has been recently sprayed.



Never apply pesticides in bare feet or wearing open sandals.  
If possible, do not walk through recently sprayed areas.



Trouser or overall legs should be worn **OUTSIDE** the boots. This prevents any splashes of pesticides entering the boots.



### Supplementary points:

- For some tasks, especially in forestry, safety boots with a steel toe inset may need to be used.
- After work, wash the outside of boots with water. If the boots or shoes are canvas or have been splashed, wash the inside as well; stand boots upside down to dry.
- Boots should be removed from the feet only after the outer surface has been cleaned.
- To prevent foot infections each man should have his own footwear.

### Protection of the Hands

Hands must be protected by gloves when indicated on the label or pictogram.  
This is usually:



- Whenever handling concentrate
- Whenever applying high hazard formulations
- Whenever washing or maintaining pesticide application equipment



It is more dangerous to wear gloves with holes that allow fluid to enter the glove than not to wear gloves at all.

### Supplementary points:



- Gloves should be in good condition, without holes, made of neoprene, not rubber, and long enough to reach the sleeves.
- Cotton gloves may be used for handling granular formulations of insecticides, herbicides and fungicides. However, be aware that the cotton gloves do not become wet during handling, since this can enhance penetration of the pesticide into the skin. Cotton gloves should be washed thoroughly with water and detergent after each use.
- Disposable gloves wear very quickly, and are not suitable unless more than 0.4 mm thick. If used they must be disposed of safely, in the same way as plastic bags that have contained pesticides.
- If organophosphorous pesticides have been handled, gloves should be soaked in an alkaline solution such as diluted soda lye (sodium hydroxide) or washed and soaked in soaps containing sodium hydroxide for at least 8 hours then rinsed and dried before use.

(Note: Long and frequent contact with organophosphorous pesticides can result in the rubber becoming impregnated with the pesticide. When there is a risk of this happening, the gloves should be destroyed)

- After pesticide use gloves must be rinsed with water before they are removed from the hands. At the end of each day's use, gloves must be washed inside as well as outside and dried before they are used again.

### **Other information:**

- A trainer must emphasize that the wearing of gloves does not reduce the need to wash hands before eating, drinking or smoking. The skin of the hands may become lightly contaminated when the gloves are put on or taken off.
- A trainer might want to discuss alternative protection for the hands that are being used in the area. One example is the use of plastic bags for covering the hands if nothing else is available. The trainer should mention that this material should be only used once and disposed of safely after use.





## Protection of the Face and Eyes

Eyes should be protected from splashes. When indicated on the product label or pictogram, protective equipment should be used. This is normally when mixing or loading pesticides, or when spraying at high levels.



A simple face shield made from clear transparent material is a comfortable form of eye and face protection and is less likely to mist over than goggles.

Goggles are an alternative for eye protection. They fit tightly around or over the eyes. They are efficient but are uncomfortable to wear in hot climates



If face shields or goggles are not available, safety glasses are better than nothing.

### Supplementary points:

- All eye protection equipment must be kept clear, and the outside should be washed and wiped with a soft rag if vision becomes blurred.
- The equipment and the cleaning rag should be carefully washed each day at the end of work.
- Face shields and goggles should not be placed on rough surfaces as the plastic can be easily scratched.
- Badly scratched or damaged equipment must be replaced before it starts to produce eye strain.

## Protection of the Lungs

Protection by wearing a respirator to avoid inhalation of dusts, vapours and gases is only needed in specialised operations with formulations of moderate or greater hazard.



Otherwise, and for dusty formulations of slight hazard, a cloth around the face, or a light weight disposable face mask covering the mouth and nose is adequate.

### Supplementary points:

- A face mask covering the mouth and nose may be required for handling dusts but must not be used for spraying.
- Respirators can only be worn for short periods in hot climates.

### Other information:

The trainer should mention that the respirator may do more harm than good if the maintenance, storage and change of filters and cartridges is poor. This will become a serious source of secondary exposure.

## Washing of Clothing and Equipment

Personal protection is not complete unless all working clothing and equipment is washed at the end of each working day.



After washing the clothes or equipment, rinse them in clean water and spread or hang them out to dry.



### **Supplementary points:**

- Working clothing should never be washed with domestic clothing.
- The water used for washing will probably be contaminated with the pesticide and must therefore be disposed of in a safe manner as discussed in the tutorial on **Protection of Other People and the Environment**.
- Rinsing water can be disposed of just like any other wash water.
- Clothing and equipment should never be washed in a stream or pond as the water may be used lower down for drinking or swimming. Fish can also be killed or affected close to the washing point.