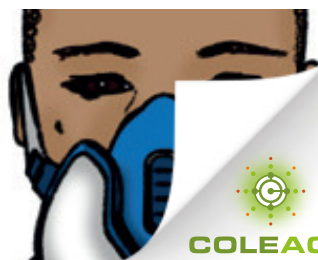


7 BROCHURE

SAFE USE OF PESTICIDES

- AGRICULTURAL PRODUCTION AND PROCESSING -

PROTECTION EQUIPMENT



The COLEACP distributes this brochure to producers and exporters of fruit and vegetables in the ACP (Africa, Caribbean, Pacific) countries. The instructions illustrated in the following pages are aimed at producers who would like to set up and manage a storage area for their plant protection products.

It summarises the main recommendations relating to personal protective equipment (PPE), which must be used to reduce the operators' potential risks of exposure as much as possible when handling treatment apparatus and packaging, and while applying plant protection products.

Brochures on other subjects are also available from the COLEACP (<http://www.coleacp.org/>).

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COLEACP

Introduction

As plant protection products are toxic, any exposure presents a health risk. It is advisable to reduce the risk of poisoning as much as possible by protecting yourself effectively.

Simply handling the packaging of such products, opening them and removing a part of the contents when preparing the spray mixture can contaminate the operator. As the product is concentrated, the risk is very high during this operation. The hands in particular are exposed, as well as the respiratory tract with regards to volatile products (especially emulsifiable concentrates – EC) and products that release dusts (powders – DP or WP, granules – GR and treated seeds).

During application, the operator can be contaminated through leaks in the apparatus, through the cloud of droplets suspended in the air, as well as through contact with the treated parts of plants while moving through the rows. With apparatus carried on the operator's back, exposure depends on the treatment method:

- For low crops: the feet, shins and legs are particularly exposed.
- For high crops: the head, face, torso and arms are also highly exposed to droplets falling back down.

There is also considerable risk of contamination while rinsing and cleaning the apparatus. Protective equipment therefore must also be worn during these latter operations.

It is possible to greatly limit contamination by correctly wearing a set of protective equipment (called personal protective equipment, or shortened to PPE). Even when fully protected, however, the operator is still at risk, as this equipment is not completely impermeable to the products. Badly looked after, ripped, damaged or contaminated PPE merely give an illusion of protecting the wearer. It is therefore advisable to clean and/or replace it regularly.

This brochure contains a set of advice to follow in order to choose, wear and correctly look after this protective equipment.

List of information and advice for choosing and handling personal protective equipment

WHY PROTECT YOURSELF?

1. To reduce the entry of plant protection products into the body through the skin (contact with the product, dirty apparatus or treated plants), the mouth (ingesting the product), the respiratory tract (inhaling vapours or dusts).
2. To reduce the risks of exposure through direct contact (especially contamination of the hands during handling and application).
3. To reduce the risks of exposure through indirect contamination: contact with the treated parts of plants (leaves, stems, fruits), droplets falling on the operator (high crop treatment).

HOW TO CHOOSE YOUR PROTECTIVE EQUIPMENT?

1. Read the directions for use of chemical products indicated on the packaging (protection symbols, danger symbols, manufacturer's instructions).
2. Choose protective equipment adapted to the tasks to be carried out, giving priority to protecting the most sensitive parts of the body.
3. Check that the protective equipment is in good condition before each use (risk of wear, presence of stains, dilapidation of the equipment, waterproofing failure, etc.).
4. It is best to use solid equipment that displays the "specific chemical protection" symbol.

HOW TO PROTECT YOURSELF?

1. Wear goggles or a face shield that offers optimal protection of the face against liquid and solid splashes from chemical products.
2. Use a half-mask chemical cartridge respirator with filters (a combination of white and brown filter types), being sure to adapt the size of the mask to the operator's face.
3. Choose long sleeve gloves, impermeable to chemical products.
4. Wear rubber boots that provide mechanical and chemical protection.
5. It is best to wear impermeable overalls while preparing and applying the spray mixture so as to limit the risks of skin exposure.

HOW TO WEAR AND HANDLE PROTECTIVE EQUIPMENT?

1. Put on and remove protective equipment in the correct order; always start and finish with the gloves.
2. Check that any chemical cartridge mask is waterproof.
3. Rinse and clean equipment immediately after use; do not forget the inside of gloves and boots and be sure to dry them well.
4. Get rid of any equipment that is damaged or too old (do not keep filter cartridges longer than 6 months after their first use).
5. Never store the equipment in premises containing pesticides, unclean packaging or the application apparatus.
6. Keep filter cartridges separately, in airtight packaging, so they retain their effectiveness.

Why protect yourself?

TO PREVENT THE ENTRY OF VAPOURS OR TOXIC PARTICLES THROUGH THE MOUTH OR NOSE

- Protect the mouth and the respiratory tract while handling packaging (release of vapours or dusts, splashes).
- Avoid shaking the packaging when emptying the products into the vat to soak and/or disperse it.



~~NO~~

☒ YES

Packaging with large openings are preferable to make the process of emptying easier.

TO PROTECT THE SKIN FROM DAMAGE CAUSED BY CONTACT WITH PLANT PROTECTION PRODUCTS (IRRITATIONS, BURNS, ETC.)

- Avoid contact between treated leaves and stems and exposed body parts (feet, legs, arms, etc.).
- Protect yourself from droplets (drift, draining).
- Rinse and clean contaminated body parts as quickly as possible.



~~NO~~

☒ YES

Ensure you have a water supply or clean cloths to wash yourself.

TO REDUCE THE RISKS OF CONTAMINATION OF STAFF IN CONTACT WITH PREVIOUSLY TREATED CROPS

- Respect the waiting period before re-entering the field after a treatment (minimum 6 hours, ideally 24 hours).
- Preferably treat in the evening (to leave the deposits to dry).
- Mark treated zones with a rope or flag.

Put up a board with the plot's number on it and keep a register of the dates of treatment.



How to choose your equipment?

LOOK AT THE SYMBOLS AND CAREFULLY READ THE INSTRUCTIONS ON THE PRODUCT LABEL

- Choose equipment according to the protection symbols.
- In case of doubt, protect yourself as much as possible.
- For toxic, poisonous or irritant products, choose equipment that protects the skin, the eyes, the mouth and the respiratory passages.



CHOOSE PROTECTIVE EQUIPMENT ACCORDING TO THE OPERATIONS TO BE CARRIED OUT

- Protect the face (eyes, nose, mouth), the hands, the forearms and the torso while preparing and loading spray mixture.
- It is most important to protect the hands and the legs when field spraying low crops.
- Protect the head (eyes, nose, mouth, scalp), the hands, the forearms and the torso when spraying high crops.



CHOOSE QUALITY PROTECTIVE EQUIPMENT

- It is best to wear chemical-resistant equipment that bears the logo opposite (see packaging or instructions).
- Avoid wearing equipment that is ripped or has holes in it.
- Do not reuse soiled or disposable equipment.
- Choose equipment adapted to the size of the operator.



How to protect yourself?

EYE PROTECTION

- Wear flexible goggles that offer good protection of the eyes (covering a part of the face and the sides) or a facial screen.
- Do not forget to take [...] prescription eyewear into account when choosing equipment.

Anti-fog goggles offer the best protection. After use, rinse them in running water without scrubbing, to avoid scratching them.



MOUTH AND NOSE PROTECTION

- Use a half-mask chemical cartridge respirator, disposable or reusable, with combined white and brown filter types.
- Choose a half-mask that covers the nose, mouth and chin.

Fabric masks (cotton or otherwise) and medical masks (cardboard) do not block toxic vapours, and therefore do not protect against chemical products.



HAND PROTECTION

- Wear gloves resistant to tearing and impermeable to chemical products (bearing a reference logo).
- Avoid using disposable latex gloves (they do not protect the hands from liquids; reserve them for powders).
- It is best to use long sleeve gloves (30cm if possible), covering the entire wrist and forearm.



Place the sleeves over (high treatment) or under (low treatment) the impermeable overalls to prevent spray mixture running down into the gloves during treatment.

FOOT AND SHIN PROTECTION

- Wear sufficiently high solid rubber boots.
- Avoid ankle boots or shoes made of leather or fabric because they will absorb the products.
- Never apply treatments while barefoot or wearing sandals.



Wear the impermeable overalls over the boots to prevent spray mixture running down into the boots during treatment.

FULL BODY PROTECTION

- Use disposable or reusable overalls during the preparation and application of the spray mixture.
- Overalls with an integrated hood provide the best protection.
- Underneath the impermeable overalls wear clothes that cover the entire body (long sleeve shirts, trousers, socks, etc.).

Check that the overalls are compatible with the rest of the personal protective equipment (masks, gloves, boots, etc.).



PARTIAL TRUNK PROTECTION

- Restrict the use of an apron to less risky handling operations (storing, repairing, rinsing and cleaning apparatus and equipment).
- Choose an apron that is impermeable to chemical products.
- Wear an impermeable apron on top of the overalls for additional safety while preparing the spray mixture.

Do not replace the watertight overalls with an apron for treating crops.



Putting on personal protective equipment

DRESSING PROCEDURE

- Spread all the equipment out in front of you and check that it is in good condition.
- First, put on the gloves.
- Put the impermeable overalls (including hood) on over your work clothes.
- Put on the safety boots (the overalls over the boots).
- Put the respirator and the goggles on last, on top of the hood.



Protect your hands first, as equipment that has been used before could be contaminated with toxic products.

WEARING THE RESPIRATOR

- Hold the mask by the facial part.
- Pass the headband over the head.
- Attach the lower straps.
- Adjust the headband straps.
- Adjust the lower straps if necessary.

Ensure that the respirator is properly adjusted before any spraying operation and before entering a contaminated site.



ADJUSTING THE RESPIRATOR

- Cover the filter cartridges with your hands.
- Breathe in at the same time so as to create a vacuum in the mask.
- The mask is correctly fitted when it lies flat against the face.
- If the mask does not stick to the face, it is not tight enough or the model is not suitable for the operator (too large or too small).

To work properly, the respirator must remain airtight. All air inhaled must be able to be filtered continuously.



Removing personal protective equipment

REMOVE THE EQUIPMENT IN ORDER

- Rinse and clean the outside of the gloves and boots first.
- Remove the respirator and the goggles and rinse them.
- Remove the cartridges from the mask.
- Take off the overalls.
- Take off the boots.
- Take the gloves off last.

Store the protective clothing in a clean location, never in the pesticide storehouse.



REMOVING THE GLOVES WITHOUT CONTAMINATING THE HANDS

- Rinse the gloves in water before removing them.
- Soap and scrub the surface of the gloves vigorously, paying particular attention to between the fingers.
- Rinse with plenty of water.
- Pull the finger ends of one glove to extract the hand.
- Hang on to the side of the second glove with your thumb to remove the other hand.

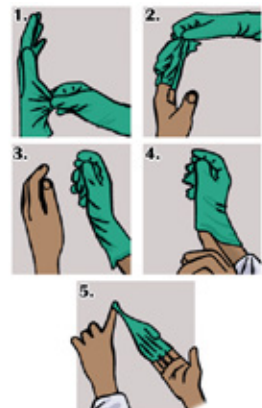
Rinse with plenty of water and then hang the gloves up to dry. Throw the gloves away if they are too dirty or have holes in them.



SAFELY REMOVING DISPOSABLE GLOVES

- Grip the outside of one glove at the wrist and slide it, from the wrist to the top of the fingers (turn the gloves inside out).
- Hold the removed glove in the palm of the remaining gloved hand.
- Slide a finger under the second glove, and slide it up until the fingers are completely visible.

Throw the gloves away with toxic waste. Never reuse them.



Storing and maintaining equipment

WASH AND DRY REUSABLE EQUIPMENT AFTER USE

- Rinse and then dry the respirator and the goggles with a damp cloth.
- Do not soak the cartridges or the mask in the cleaning water.
- Clean the inside and the outside of the boots and the gloves (already rinsed).
- Put the gloves to dry before their next use.
- Wash protective clothing in hot water and with soap, separately from other clothing.



CHANGE YOUR EQUIPMENT REGULARLY

- Ensure you have a reserve of new protective equipment.
- Repair damaged clothing.
- Replace equipment as soon as it shows major signs of wear and alteration (holes, stains, wear and tear, etc.).
- Replace the respirator cartridges in time (at least every 6 months after their first use).
- Throw away single-use equipment (gloves, masks).

~~NO~~



PREPARE A SUITABLE STORAGE SPACE FOR THE PROTECTIVE EQUIPMENT

- Store the protective equipment in a dry place.
- Separate the mask and the cartridges.
- Place the filter cartridges in hermetic packaging (an airtight box or sachet) before storing them.

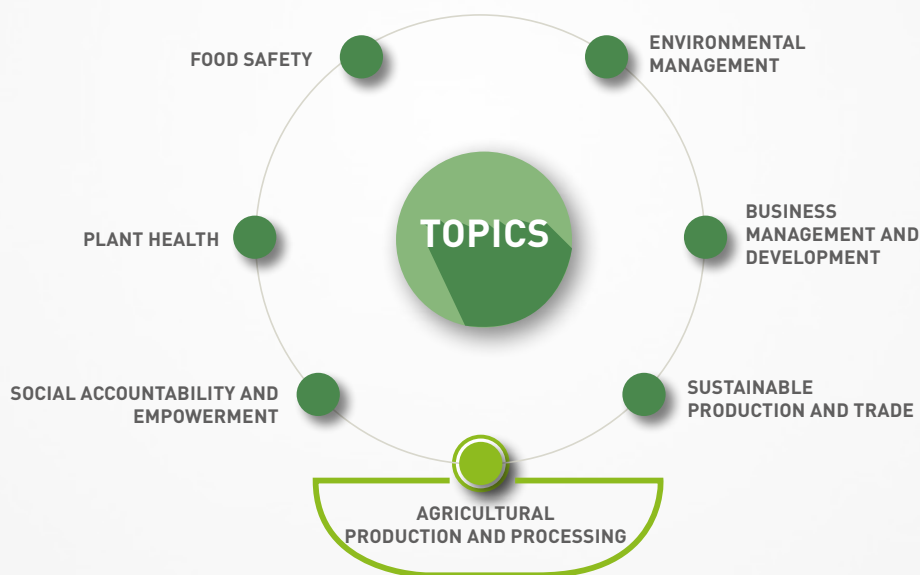
Never stock the equipment close to plant protection products (in the storehouse) or with the spraying apparatus.



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