



STORAGE AND SAFE USE OF AGROCHEMICALS: HOW MUCH DO YOU KNOW?

HLENGIWE GUMEDE




In agriculture we use agrochemicals to prevent and/or control weeds, diseases and pests on both livestock and crops. The question is: ***How much do you know about storage and safe usage of agrochemicals?***

GOLDEN RULE:
**ALWAYS READ THE LABEL BEFORE USING
AGROCHEMICALS**

Product separation

Crop protection and animal health products (CPAHPs), as well as empty containers can cause harm to man, animals and the environments. The CPAHPs stores are usually small. An attempt should be made to separate products into groups as follows:

TABLE 1 Storage

First: Separate herbicides from other agrochemicals. Herbicides (indicated by a purple square on the main panel of the label) should be as far away from insecticides and fungicides as possible.	Second: Highly toxic products should be grouped together and special precautions must be taken with these products. Identified by red band and skull- and- crossbones and words "very toxic" or "toxic".	Third: Flammable products should be interspersed with non-flammable products of their own groups.
Herbicide 	Highly toxic products 	Flammable Products 
Grouping of products will facilitate rapid and accurate stocktaking and the selection of products on basis of "FIRST IN FIRST OUT"		

Stacking products

- Cement floors and walls tend to sweat. Therefore to prevent damage to cartons and paper bags, they should be placed on pallets away from the walls
- Plastic and metal drums should not be stacked more than two tiers high
- Liquids should not be placed above powders in case of leakage.

Fire protection

- All agrochemical stores and the surrounding areas should be designated “**no smoking areas**” and suitable **firefighting** equipment should be on hand
- Fire extinguishers should be properly mounted outside the store and serviced on an annual basis.

Protective clothing

Protective clothing is designed to help keep toxic substances such as pesticides from getting on or in your body.

Poisonous/toxic substances may enter the body through the respiratory tract (**inhalation**), the skin (**dermal absorption**) and the digestive tract (**ingestion**); or may cause localised ill-effects on contact with skin or eyes.

Some examples of protective clothing are overalls, aprons, gloves, boots, hoods, respirators and safety glasses.

Always check the label of the pesticide you are using to find out what protective clothing you should wear

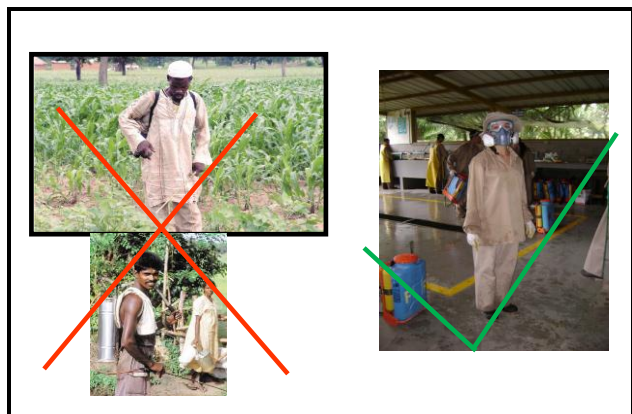


FIGURE 1: Wear proper protective clothing

Treatment and disposal of empty containers

The best safe way to treat empty CPAHPs containers prior to disposal is **TRIPLE RINSING!**

Why Triple Rinse?

Reduces the risk to human and animal health and the environment. Each rinse reduces the amount of AI (active ingredient) that remains in container to a safer

level. The rinse water must be poured into mixing or spray tank.

Treatment

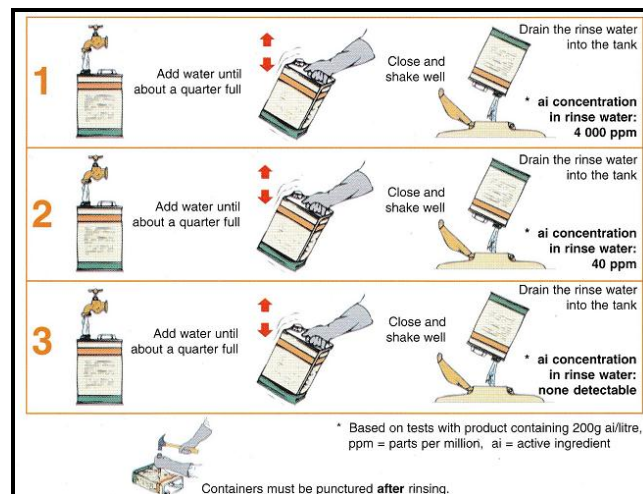


FIGURE 2: Triple rinse procedure



FIGURE 3: Never decant agrochemicals into drinking bottles or food containers. Do not use pesticide containers for food or water

Disposal

Small quantities of clean paper and cardboard, and cleaned plastic containers (not PVC) may be burnt in a very hot fire on the farm. Take care that smoke and fumes do not drift downwind to affect people, plants or animals.

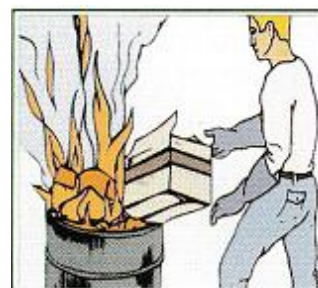


FIGURE 4: Disposal of plastic and cardboard products.

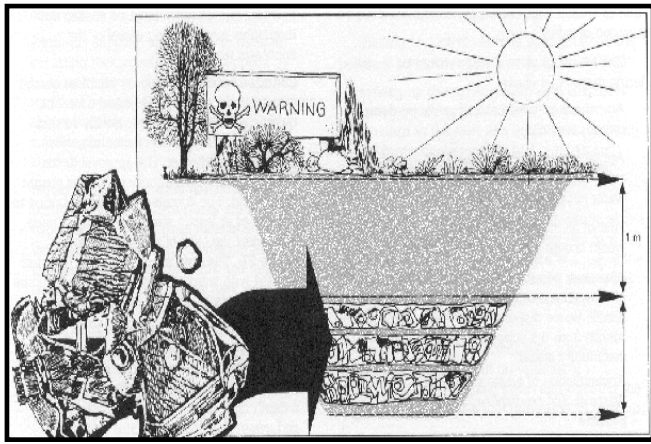


FIGURE 5: Containers and waste should be buried at a depth of at least 1 METRE

Burying waste in a pit

Fence off disposal area to keep people and livestock away and ensure a signpost is clearly visible to indicate it as a disposal site.

Pit must be:

- on ground that is relatively high and flat AND at least 50 m from any water source (river, dam, spring, borehole, canal etc.)

Pit must not be:

- in an area where ground water levels tend to rise in the rainy season OR in excessively sandy soils to prevent leaching into groundwater sources
- Bottom of pit must be at least 2 m above the highest expected groundwater level
- Pit should be in the form of a bowl with diameter of 2-3 m and depth of 1-1.5 m

Classification of agrochemicals

Agrochemicals are classified into Groups I, II, III and IV

Group Ia and Ib symbols have red band and skull-and-crossbones and words “very toxic” or “toxic”; they are used to label a substance which, if it is inhaled or ingested or if it penetrates the skin, can lead to death

GROUP Ia



GROUP Ib



Group II symbol has yellow band with an “X” with the word “harmful”; it is used to label substance which, if it is inhaled or ingested or if it penetrates the skin, may involve limited health risks.

GROUP II



Group III has a blue band with word “Harmful”; it is used to label substances that are harmful

GROUP III



Group IV has a green band; it is used for substances that need to be kept in safe places. They do not cause harm.

GROUP IV



PICTOGRAMS

STORAGE



Keep locked away and out of reach of children

ACTIVITY



Application



Handling dry concentrate



Handling liquid concentrate

ADVICE



Wear gloves



Wear protection over nose and mouth



Wear eye protection



Wear respirator



Wear boots



Wear overalls



Wear apron



Wash after use



Signs of poisoning

Types of poisoning

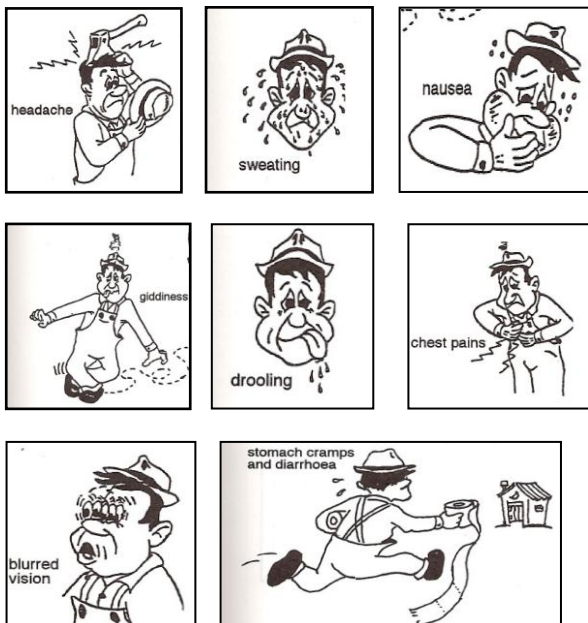
Lethal – a single dose followed immediately by death

Acute – a small lapse of time between ingestion and death

Chronic – ingestion of small amounts of poison over time, which gradually produces symptoms

Recognizing symptoms of poisoning

- Not easy to recognize poisoning
- Many of the signs and symptoms similar to those of other ailments
- Some signs and symptoms of mild poisoning after using agrochemicals may include:



First Aid

- Check for danger to yourself
- Remove the cause of poisoning or remove the patient from the cause
- Remove contaminated clothing and wash skin with soap and lukewarm water

- If eyes affected by chemical, wash gently with running water for at least 15 minutes
- Avoid leaving patient unattended
- Read and apply first aid directions on the chemical label
- Identify and record the name of the chemical if possible
- Seek medical attention as soon as possible

Dangers of deviating from recommendations on product label

- Target organism not controlled and resistance build up
- Crop may be damaged (phytotoxicity)
- Residue levels may be exceeded
- Pollution risks
- Prosecution

Withholding periods

Withholding period refers to the amount of time that must elapse between last application of chemical and the harvesting of the crop.

This allows for acceptable level of active ingredient

Examples of withholding period statements:

- DO NOT APPLY LATER THAN 14 DAYS BEFORE HARVEST
- DO NOT GRAZE OR CUT FOR STOCKFOOD FOR 7 DAYS AFTER APPLICATION

Acknowledgment

Sourced from AVCASA

Contact

Hlengiwe Gumede

Professional Scientist (Plant Pathologist)

Tele: (034) 212 2479

hlengiwe.gumede@kzndard.gov.za

KZN Department of Agriculture & Rural Development
Crop Production, Crop Protection, Dundee

Published November 2015