

1 BROCHURE

SAFE USE OF PESTICIDES

- AGRICULTURAL PRODUCTION AND PROCESSING -

INSTRUCTIONS FOR PLANNING AND CALIBRATION



COLEACP has published this brochure for staff member of agricultural workers and small producers in the African, Caribbean and Pacific (ACP) countries. The instructions illustrated in the following pages are meant for those who supervise and are responsible for the application of pesticides.

This brochure has been designed by the programme's Training Unit, under the supervision of Bruno Schiffers, professor at Gembloux Agro-Bio Tech and head of the Unit.

This brochure contains instructions for planning and calibration and environmental protection recommendations. It explains a simple method for determining accurately the volume applied per hectare and the product dosage to be prepared for effective treatment.

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

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This collection is available online for COLEACP members.

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Introduction

The purpose of this brochure is to provide guidance to producers on how to plan and then calibrate the sprayer to enable the correct pesticide application.

Applying the correct dose rate of pesticides with each treatment is important so that enough will be applied to control diseases and pests effectively, but without exceeding the recommended dose and avoid excessive residues being left on the produce. The presence of excessive residues makes the harvested goods dangerous for health and thus unmarketable.

You will find in this brochure a practical method of how to calculate how much product to measure out so that the correct amount of pesticide will be applied to provide effective and risk-free plant protection.

List of instructions for planning and calibration

USE PROPER EQUIPMENT

1. Use a sprayer that is in good working order that does not leak.
2. Regulate the flow, as necessary, before use.
3. Calibrate the device regularly, at least once a year.
4. If necessary, clean the nozzle and filters.
5. Use appropriate tools that allow you to measure small volumes.

BUY THE PESTICIDE

1. Do not accept damaged containers of the products or those without labels.
2. Never place the products in different packaging.
3. Read the instructions on the label (directions for use), especially the dose rate.
4. Choose the correct safety equipment to minimise the risk and follow the recommendations on the label (coloured strip and safety pictograms).

ESTIMATE THE VOLUME OF MIXTURE SPREAD PER HECTARE

1. Fill the tank completely with clean water using a graduated receptacle to measure the volume of water poured into the tank.
2. Choose the nozzle, that will give the required flow rate and droplet size.
3. Measure accurately a surface area of 100 m².
4. Spray the entire surface measured, proceeding at a normal treatment speed and pumping regularly to maintain pressure.
5. Measure the volume of water to be added to fill the tank again completely.
6. The difference represents the volume sprayed on the surface (100 m²). Multiply by 100 to obtain the volume of mixture spread per hectare (10,000 m²) (10,000m²) called «V» below.

WORK OUT THE AMOUNT OF PRODUCT NEEDED FOR EACH COMPLETE TANKFUL

1. For liquid products, use the following formula :

$$\text{Quantity of product to be measured (L)} = \frac{\text{Recommended dosage (L/ha)}}{\text{Volume of mixture per hectare (L)}} = \text{Tank capacity (L)}$$

2. For solid products, use the following formula :

$$\text{Quantity of product to be measured (kg)} = \frac{\text{Recommended dosage (kg/ha)}}{\text{Volume of mixture per hectare (L)}} = \text{Tank capacity (L)}$$

TAKE NOTES AFTER EACH TREATMENT

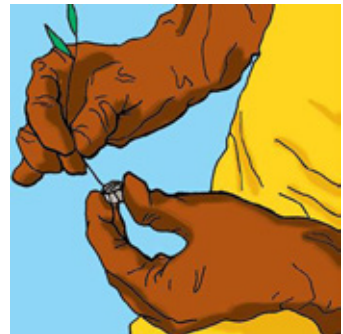
1. After each application of pesticides, take note of: the date, plot, crop, name of product, quantities applied, application conditions and name of the person doing the spraying.
2. Fill in the pesticide stock record sheet.

Use proper equipment

- Use a sprayer in good working order which does not leak.
- Regulate the flow as necessary, before use.
- Calibrate the device regularly, at least once a year.



- If necessary, clean the nozzle and filters.



- Use appropriate tools that allow you to measure small volumes.



Buy the pesticide

- Do not accept damaged containers of the products or those without labels.



- Never place the products in different packaging.

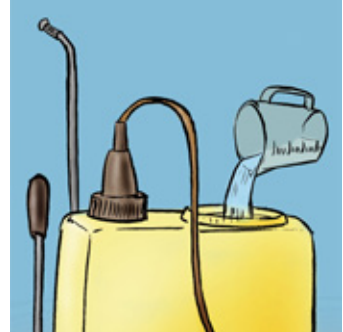


- Read the instructions on the label (directions for use), especially the dose rate.
- Choose the correct safety equipment to minimise the risk and follow the recommendations on the label (coloured strip and safety pictograms).



Estimate the volume of mixture spread per hectare

- Fill the tank completely with clean water using a graduated receptacle to measure the volume of water poured into the tank.



- Choose the nozzle, that will give the required flow rate and droplet size.



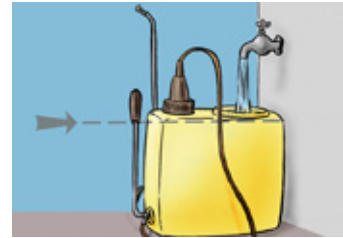
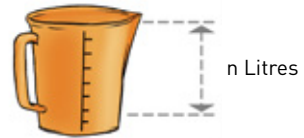
- Measure accurately a surface area of 100m².



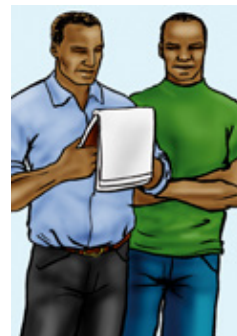
- Spray the entire surface measured, proceeding at a normal treatment speed and pumping regularly to maintain pressure.



- Measure the volume of water to be added to fill the tank again completely.



- The difference represents the volume sprayed on the surface (100 m²).
- Multiply by 100 to get the volume of mixture spread per hectare (10,000 m²), called «V» below.



n Litres
-> 100m²

n Litres x 100
-> 1 ha
= V

Work out the quantity of product needed for each complete tankful

- For liquid products, use the following formula:

$$\text{Quantity of product to be measured (L)} = \frac{D}{V} \times C$$

D= recommended Dose rate (L/ha): see pesticide label

V= Volume of mixture per hectare (L): see drawings p.6

C= tank Capacity (L): see drawings p.5

- For solid products, use the following formula:

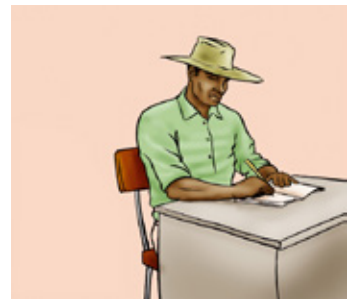
$$\text{Quantity of product to be measured (Kg)} = \frac{D}{V} \times C$$

D= recommended Dose rate (kg/ha): see pesticide label

V= Volume of mixture per hectare (L): see drawings p.6

C= tank Capacity (L): see drawings p.5

- After each treatment, take note of: the date, plot, crop, name of product, quantities applied, application conditions and name of the person doing the spraying.
- Fill in the pesticide stock record sheet.



10/02/2007-PLOT 17
GREEN BEANS
PRODUCT EC 250
30 ml
BACKPACK SPRAYER, 600
L/ha

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