

# BROCHURE

## 1 SAFE USE OF PESTICIDES

# INSTRUCTIONS FOR PLANNING AND CALIBRATION



This brochure is made available by the COLEAD to fruit and vegetable producers and exporters in the ACP (Africa, Caribbean, Pacific) countries. The instructions illustrated in the following pages are meant for those who supervise and are responsible for the application of pesticides.

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 subject areas are also available from ([www.colead.link](http://www.colead.link)).

This publication has been developed by the Fit For Market + programme, implemented by COLEAD within the framework of the Development Cooperation between the Organisation of African, Caribbean and Pacific States (OACPS) and the European Union (EU). It should be noted that the information presented does not necessarily reflect the views of the donors.

This publication is part of a collection of COLEAD resources, which consists of online and offline educational and technical tools and materials. All of these tools and methods are the result of more than 20 years of experience and have been developed progressively through COLEAD's technical assistance programmes, notably in the framework of development cooperation between the OACPS and the EU.

The use of particular designations of countries or territories does not imply any judgement on the part of COLEAD concerning the legal status of these countries or territories, their authorities and institutions or the delimitation of their frontiers.

The content of this publication is provided in a «currently available» form. COLEAD makes no warranty, direct or implied, as to the accuracy, completeness, reliability or suitability of the information at a later date. COLEAD reserves the right to change the content of this publication at any time without notice. The content may contain errors, omissions or inaccuracies, and COLEAD cannot guarantee the accuracy or completeness of the content.

COLEAD cannot guarantee that the content of this publication will always be current or suitable for any particular purpose. Any use of the content is at the user's own risk and the user is solely responsible for the interpretation and use of the information provided.

COLEAD accepts no liability for any loss or damage of any kind arising from the use of, or inability to use, the content of this publication, including but not limited to direct, indirect, special, incidental or consequential damages, loss of profits, loss of data, loss of opportunity, loss of reputation, or any other economic or commercial loss.

This publication may contain hyperlinks. Links to non-COLEAD sites/platforms are

provided solely for the information of COLEAD staff, its partner-beneficiaries, its funders and the general public. COLEAD cannot and does not guarantee the authenticity of information on the Internet. Links to non-COLEAD sites/platforms do not imply any official endorsement of, or responsibility for, the opinions, ideas, data or products presented on those sites, or any guarantee as to the validity of the information provided.

Unless otherwise stated, all material contained in this publication is the intellectual property of COLEAD and is protected by copyright or similar rights. As this content is compiled solely for educational and/or technical purposes, the publication may contain copyrighted material, the further use of which is not always specifically authorised by the copyright owner.

Mention of specific company or product names (whether or not indicated as registered) does not imply any intention to infringe proprietary rights and should not be construed as an endorsement or recommendation by COLEAD.

This publication is publicly available and may be freely used provided that the source is credited and/or the publication remains hosted on one of COLEAD's platforms. However, it is strictly forbidden for any third party to state or imply publicly that COLEAD is participating in, or has sponsored, approved or endorsed the manner or purpose of the use or reproduction of the information presented in this publication, without prior written consent from COLEAD. The use of the contents of this publication by any third party does not imply any affiliation and/or partnership with COLEAD.

Similarly, the use of any COLEAD trademark, official mark, official emblem or logo, or any other means of promotion or advertising, is strictly prohibited without the prior written consent of COLEAD. For more information, please contact COLEAD at [network@colead.link](mailto:network@colead.link)



## 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 m<sup>2</sup>.
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 m<sup>2</sup>). Multiply by 100 to obtain the volume of mixture spread per hectare (10,000 m<sup>2</sup>) (10,000m<sup>2</sup>) 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 :

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

## TAKE NOTES AFTER EACH TREATMENT

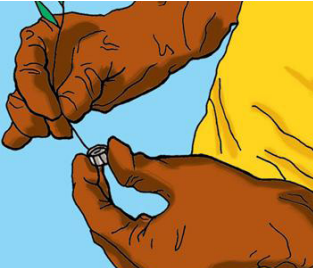
1. After each application of pesticides, take note of: the date, plot, crop, name of product, quantities applied, application conditions and name of the person doing the spraying.
2. Fill in the pesticide stock record sheet.

## 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.



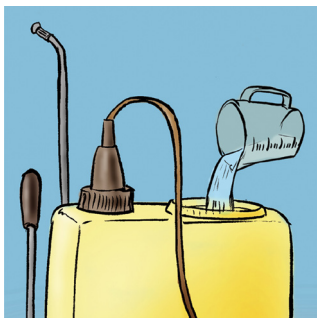
- Never place the products in different packaging.



- 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

---



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

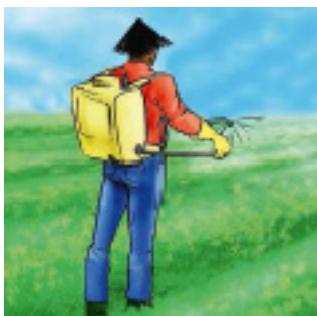


- Choose the nozzle, that will give the required flow rate and droplet size.

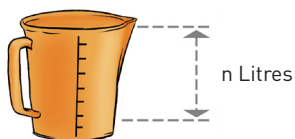


- Measure accurately a surface area of 100m<sup>2</sup>.

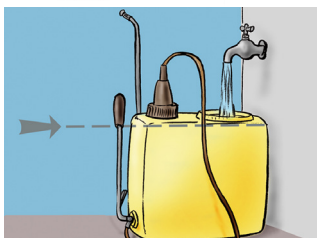
## ESTIMATE THE VOLUME OF MIXTURE SPREAD PER HECTARE



- 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.



n Litres  
-> 100m<sup>2</sup>

n Litres x 100  
-> 1 ha  
= V

- The difference represents the volume sprayed on the surface (100 m<sup>2</sup>).
- Multiply by 100 to get the volume of mixture spread per hectare (10,000 m<sup>2</sup>), called «V» below.

## 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



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

- 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.

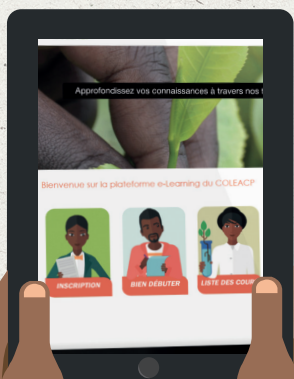
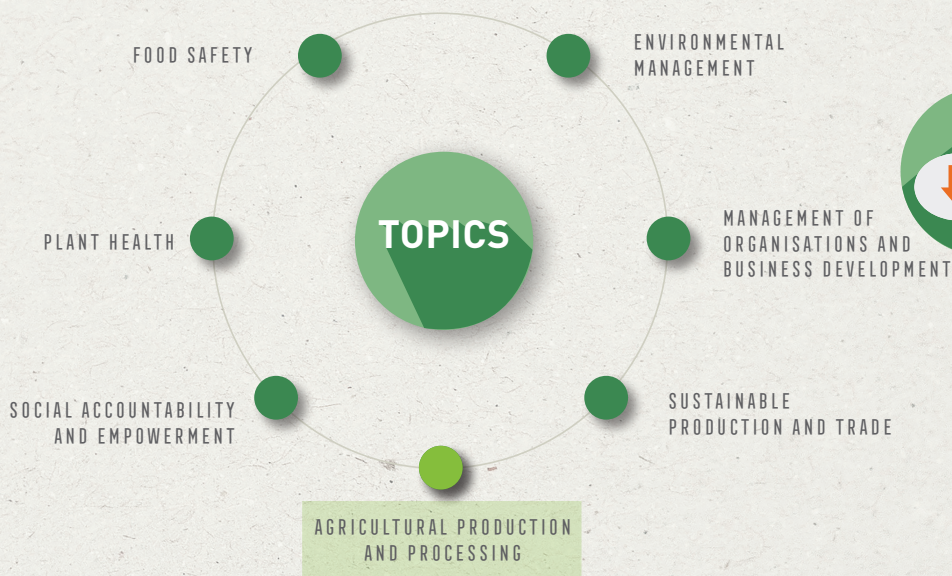




# COLEAD E-LEARNING PLATFORM

RECEIVE YOUR ACCESS TO OUR DISTANCE LEARNING PLATFORM. RESERVED FOR STAKEHOLDERS IN THE AGRICULTURAL SECTOR IN AFRICAN, CARIBBEAN AND PACIFIC COUNTRIES.

TEST AND IMPROVE YOUR KNOWLEDGE  
AT YOUR OWN RHYTHM!



<https://training.colead.link>





# COLEAD

**SUSTAINABLE PRODUCTION  
AND TRADE**

**SOCIAL ACCOUNTABILITY  
AND EMPOWERMENT**

**PLANT HEALTH**

**ENVIRONMENTAL  
MANAGEMENT**

**FOOD SAFETY**

**BUSINESS MANAGEMENT  
AND DEVELOPMENT**

**AGRICULTURAL PRODUCTION  
AND PROCESSING**

**TRAINING  
METHODOLOGY**