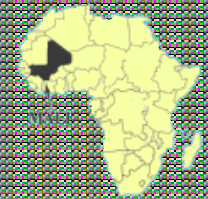


# Teaching Farmers to Use a Pesticide Product Label



- Overview of Horticultural Crop Production in Mali
- Pesticide Safety Education – Why & How
- **Example: Label Comprehension**
- Stewardship Recommendations

# Horticultural Crop Production: Benefits / Risks

## ■ Benefits

- Efficient land use
- Food
- (Additional) income

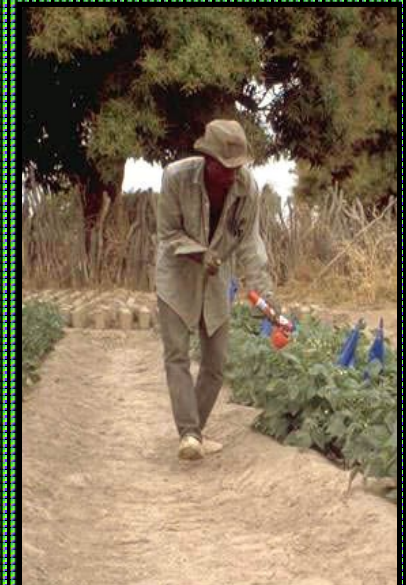
## ■ Risks

- Logistics / economics
- Crop loss / pest pressure
- Impacts of inputs (including pesticides)



# Horticultural Crop Production: Who/What/Where/When/Why/How

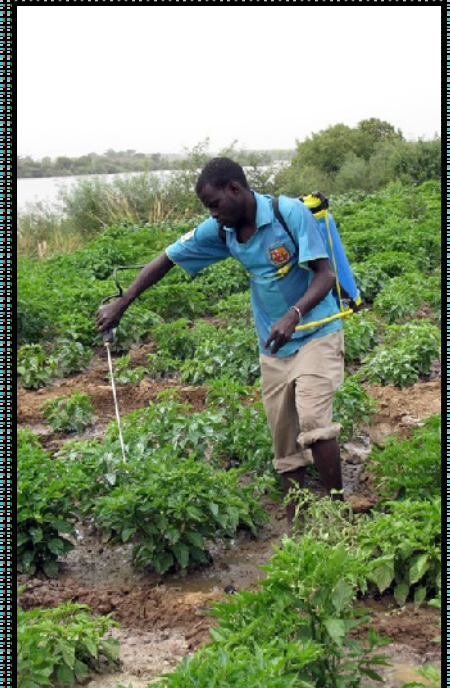
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# Horticultural Crop Production: Who/What/Where/When/Why/How

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# Horticultural Crop Production: Who/What/Where/When/Why/How



# Horticultural Crop Production: Who/What/Where/When/Why/How

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# Pesticide Product Distribution: The good, the bad, and the ugly...

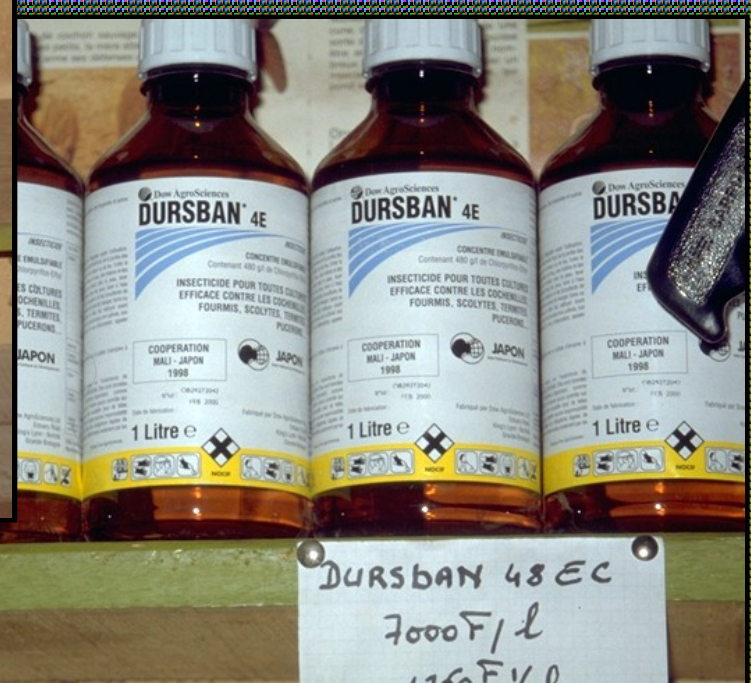


# Pesticide Product Distribution: The good, the bad, and the ugly...





# Pesticide Product Distribution: The good, the bad, and the ugly...



# Pesticide Product Distribution: The good, the bad, and the ugly...





# Pesticide Safety Education: Why?

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- Proper pesticide use = risk reduction
  - Reduce toxicity
  - Reduce exposure
- Results
  - Environmental safety
  - Personal safety
    - ◆ Food safety (local and export crops)



# Pesticide Safety Education: Why?

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- 1° Goal = **Proper pesticide use:**
  - **Crop QA** (applying the right amount of a legal pesticide)
  - **Personal safety** (high degree of hand labor, PPE availability and use, properly-labeled product availability, label comprehension, proper application equipment availability and use, pesticide storage and handling practices, waste management, food safety)
  - **Environmental safety** (pesticide storage and handling practices, water sources, water quality)



# Pesticide Safety Education: Why?

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- 2° Goal = Solve **production problems**:
    - Pest management (encourage IPM)
    - Pesticide selection (use low-toxicity pesticides, such as “homemade” neem [botanical insecticide])
    - Pesticide efficacy (application equipment and techniques, water quality)
-

# Pesticide Safety Education: How?

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- Take advantage of existing infrastructure and expertise (ex. agricultural researchers, field agents, growers, pesticide vendors, commodity exporters, residue chemists)
- Build a cadre of dedicated, competent pesticide safety educators
- Develop and use appropriate materials & methods





# Pesticide Safety Education: How?

- **“Train the Trainer”**





# Calibration





# Learning & Experience



# Program Support

- Lesson plan sets, books\*, and support materials
    - Topics:
      - ◆ Introduction (needs assessment / pesticide management)
      - ◆ IPM
      - ◆ Risk, Toxicity, and Exposure
      - ◆ Protective Clothing & Equipment
      - ◆ Pesticide Tolerances / MCLs
      - ◆ Consequences of Misuse
      - ◆ Application Techniques
      - ◆ Calibration
      - ◆ Signs & Symptoms of PP / First Aid
      - ◆ Storage
      - ◆ Pesticide Label Comprehension
      - ◆ Safety Checklist / Planning
- 





# Pesticide Safety Education: How?

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- Malian ownership
- Oral tradition
  - participatory learning
  - "active" (hands-on) methods

















# Side Benefit = support of rural literacy!

- Books for Trainers
- Books for Farmers





CIKELAW BAGANMARALAW NI  
MONIKELAW KA MINISIRISO  
OFISI OTIWALE

MALI -JAMANA  
Jekulu kelen-Kun kelen-Ijaniya kelen

## YERETANGA GAFE POSONI KASARAW MA



This project was made possible by the United States Agency for International Development and the generous support of the American people through USAID Cooperative Agreement No. EPPA-00-04-000 16-00.

San 2003

Senekelaw ka Minisiriaw  
Jinimikelaw ka so BIR

Mali-Jamana  
Jekulu kelen-Kun kelen-janiya kelen

## Senefenw Lakanali Ko Ijuma Gafe

Livret pour la bonne protection  
des plantes cultivées



Kan 2006 dionnashara kabi  
Mali de dionnashara 2006

## Pɔsoniw labaarakogo faamuyali seben

Compréhension et utilisation des  
étiquettes des produits phytosanitaires



This project was made possible by the United States Agency for International Development and the generous support of the American people through USAID Cooperative Agreement No. EPPA-00-04-000 16-00.

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# Pesticide Labels: The Problem w/ Pictograms

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- Literacy
  - Culture
  - Habit
  - Education/Instruction (or lack of...)
-

## Ʋɔɔɔniw labaarakogo faamuyali seben

Compréhension et utilisation des  
étiquettes des produits phytosanitaires



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## Ʋɔɔɔniw labaarakogo faamuyali seben







Tiiri kulɔrima ninnu b'a jira pɔsoni sege hake be kasara min ke :

Tiiri bileman = o ye kasara kodan ye kasara jugumanba

Tiiri neremuguman = o ye kasara juguman ye

Tiiri bulalama = o ye kasara ye min man ca kosebe

Tiiri ɗugujiiman = o ye kasara fitini ye

Une barre de couleur indique le degré de danger que ce produit présente.

Rouge = danger extrême (extrêmement dangereux)

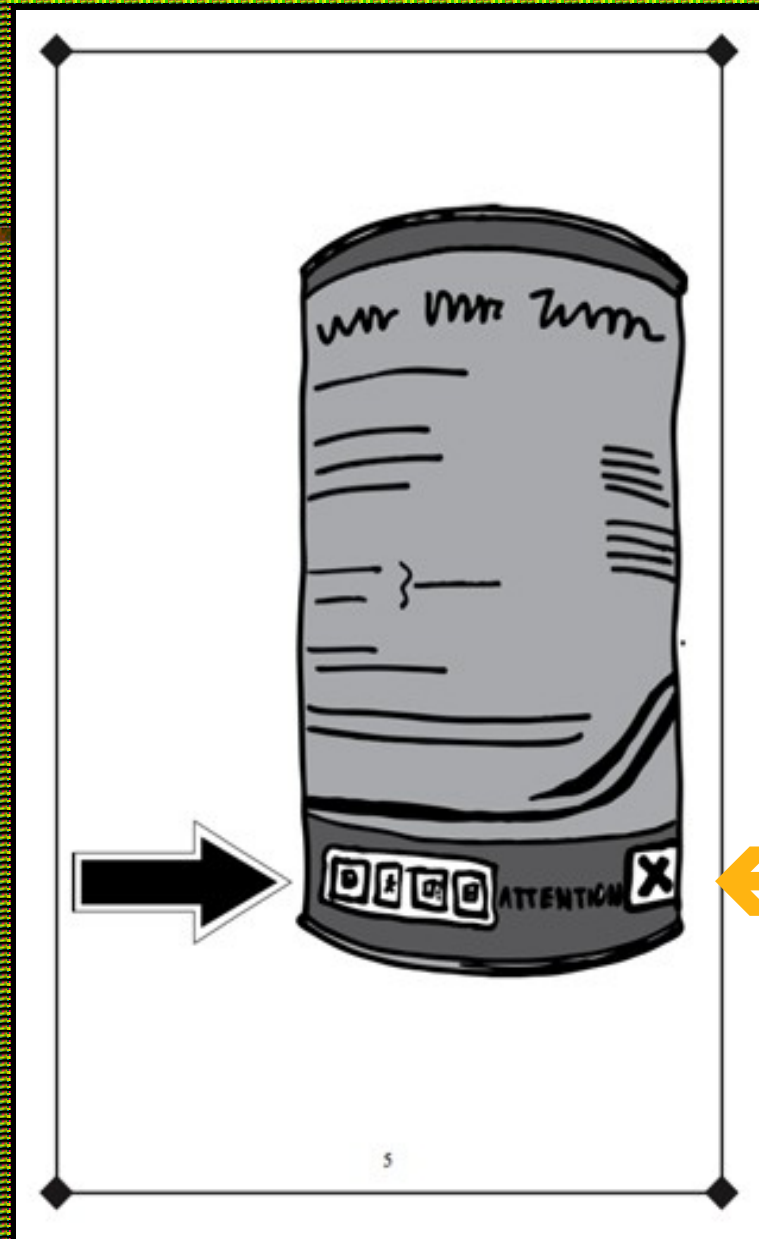
Jaune = risque élevé (hautement dangereux)

Bleu = risque modéré (modérément dangereux)

Vert = risque faible (moins dangereux)

(Utiliser les boites de pesticides et montrer aux paysans lorsque la barre de couleur situé sur l'étiquette. Utilisez au moins deux produits différents avec des barres de couleurs différentes.)







kasara juguman



i janto



kasara man bon



i janto a ka jugun : i ka keneya ma



A' ye gan kologelenw don sege ji te minnu tiye jona



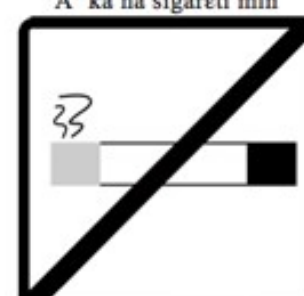
A' ye sanbarajan don (botiw)



A' ka na dumuni ke



A' ka na sigareti min





A ka jugu sokonobaganw ni sew ma  
A' ye u lasagon k'a mabo baganmarayorow la



A ka jugu jikonofenw ma ( i n'a fo jege )



A ka jugu fengenema ma min te suman tije ( i n'a fo didenw )  
A ka na furakeli ke n'aw ye olu ye foro kono



# Outcomes

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- Trainers using lessons and materials
  - Farmers seeking / requesting training
  - Government agencies/institutions asking for and supporting PSE programs
  - Program evaluation data very positive
-



# Obstacles

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- Are new practices and techniques available? ...affordable?
- Are other forces/factors affecting pesticide use patterns (ex. contract protocols)?

# Ground Level Efforts

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- Training and resources for trainers
  - Technical content
  - Teaching tactics
  - Program support materials
- Training and proper safety and application equipment for farmers



# Stewardship Needs

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- Training for vendors; appropriate products and materials for sale
  - Training for (and leverage via regulation or supplier pressure) for export agents who contract with growers; supply proper application equipment + PPE to farmers along with seed, fertilizer, pesticide, watering cans...
-

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