

PROGRAMME DE PREVENTION DU CUMUL DE STOCK DE PESTICIDES (PPP)
(Stock Accumulation Prevention Program)

Training themes

**INTERGRATED PHYTOSANITARY PROGRAM
(IPM)**

I-Introduction

- *Definition of IPM
- *IPM's objectives
- *IPM's 6 « P »
 - Plants
 - Population of Managers
 - Predators and natural enemies
 - People (farmers, technicians, researchers, etc)
 - Government policy
 - Problems links to setting up and application of IPM

II-TEAMWORKS

- *Evolution of phytosanitary protection
 - Blind chemical fight
 - Recommended Chemical fight
 - Biological fight
 - Integrated protection
 - IPM
 - Integrated Agricultural Production (PAI)
- *Backgrounds of the use of chemical products
 - Pesticide residue problems
 - Spiral effect
 - Cost
 - Poisoning
 - Effect on the environment

III-Fieldwork

- *Practising biodiversity analysis
 - setting up a training system
 - collection of informations
- *Practising phytosanitary diagnosis and agro-ecosystem analysis.
 - Example of practical activities in the fields. Each group observes 5 tufts of rice taken at random and check off all details : existence of ravager insects or not, weeds, physiological state of the plant, irrigation water...)
 - Indoor activities : each group transfers to packing paper all the remarks and informations collected in the fields.

IV-Introduction to « Ady gasy » method

- *Introduction to « Ady gasy » or traditional method employed by Malagasy people. It consists in protecting the cultivation without using synthetic chemical products :
 - Raw materials
 - Preparations
 - Targeted ravagers
 - Recipes
- *IPM and rustic school
 - Various stages of a IPM program

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-Characteristics and sequences of IPM Trainings : TOT (Training of Trainers) and FFS (Farming Farmers School) characteristics, typical sequence of FFS.

*Rustic school

-Members

-Infrastructure

V-Meeting day – Action

*IPM Approach

-Introduction meeting conducted by the trainer (about 30 minutes)

-Regular visit of the parcels (every week and during cultivation season)

-Indoor meeting

*Summary of the day's work by the technician

-Summary of the realized activities

-Acquired Knowledge of each member (farmers)

VI-Importance of IPM's practice

*Farmers become fully qualified decision-makers

*Acquired qualities : from experimentation, farmers become intelligent, managers, economists, observers, practical, and researchers...

*Planting healthy cultivation

*Preserving of natural enemies

*Ecologic balance

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SECTION I : BASIC KNOWLEDGES ON AGRO-PHARMACEUTICAL PRODUCTS

I-Definitions

- *Pesticide or « agro-pharmaceutical products »
- *Composition
 - « active ingredient »
 - « charge » or « thinner »
 - « Additives »
 - « Content »
 - « Proportioning »
 - « Use concentration »

II-Pesticide actions

- *Pesticide action on plants
- *Pesticide action on animals

III-Basics of pesticide toxicology

- *Acute Toxicity
- *Subchronic Toxicity
- *Chronic Toxicity

IV-Classification of the pesticides according to toxicity

V-The main groups of pesticides

VI-The main classes of pesticides

VII-Advantages and backgrounds of some compositions

VIII-Current Types of compositions

- *Concentrated to be watered down
- *Concentrated to be thinned down with organic solvents
- *Products to be applied without thinning down
- *Products for seed treatment
- *Other types of compositions

IX-Use of agro pharmaceutical products

- *The « Right Agricultural Practices » (BPA)
 - Definition
 - Decision to intervene
 - Realization of the treatment

- *Impacts of the use of pesticides

- Definitions= pesticide residues, maximum limit of residues (LMR)
- Definition of the problems = direct impact namely on the fauna, direct contamination food or water, diffuse or latent contamination difficult to notice in the short term.
- Where can you find residues of agro pharmaceutical products ?
- Where are risks found ?

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SECTION II : PREVENTION OF PESTICIDE ACCUMULATION

A- Identifying the causes of pesticide accumulation

- *Wrong stock control
- *Poor stocking conditions
- *Unsuitable products and / or packagings
- *Withdrawal of a product because of its toxicity for men and environment
- *Erroneous estimation of needs
- *Lack of coordination
- *Hidden and commercial interests

B- Dangers linked to unused pesticide stocks

- *Impact on human health
- *Risks of fire and production of toxic vapour
- *Risks of using the pesticides in non-authorized areas or in other fields not recommended for the products
- *Risks of elimination by improvised methods.

C- Unused Stock Accumulation Prevention Program

- *Ensuring appropriate handling, storing, and stock control of pesticides according to the regulation standards. Ensuring appropriate training for the staff who is responsible for stock control.
- *Reducing surplus stocks by estimating the needs as precisely as possible.
- *Anticipating the repercussions caused by changes in subsidy and pricing policies.
- *Applying the integrated fighting program as a priority (IPM)
- *Ensuring a large campaign to increase public awareness.
- *Setting up an appropriate training and communication system.
- *Reinforcing the existing legislation and the follow-up of its enforcement.
- *Ensuring an efficient quality control of launched products and their uses.

D- Rational management of a pesticide warehouse (According to facts noticed during site visits).

- *Rules to be observed during establishment.
- *Warehouse design
- *Stocking conditions to be observed during exploitation,
 - *Basic rules of management (stock control)
 - *Safety measures and precautions to be taken for workers' protection
 - *Control and follow-up measures,
 - *Example of results recap of teamworks. Training done in Tulear, Fianarantsoa and Antsirabe (March and April 2000). Training scheme : theoretical training, participation through teamworks, tests before and after the training.

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RISKS LINKED TO USE OF PESTICIDES

I-Different types of pesticides

- *Insecticides
 - Non-organic compounds
 - Natural organic compounds
 - Synthetic organic compounds
- *Herbicides
- *Fungicides
- *Rodenticides

II-Risky situations due to an acute pesticide poisoning

- *Types of poisoning
 - acute poisoning
 - chronic poisoning
- *Poisoning modes
 - poisoning of the eyes
 - through the skin
 - by respiratory tract
 - orally

III-Therapeutic conduct

- *On the scene of the accident
- *In hospital :
 - some members of the team make inquiry
 - some take care of the patient

IV-Prevention of pesticide poisoning

ALL PESTICIDES ARE TOXIC : BE CAREFUL WHILE HANDLING THEM

- *Storage
- *Handling
 - avoid poisoning through skin
 - avoid ingestion
 - avoid inhalation
 - Protect the environment
 - Regular checkup of the workers

V-Clinical symptoms of an acute organophosphorus poisoning.

- *Type of clinical description : poisoning by organophosphorus products
 - simple poisoning
 - moderate poisoning
 - severe poisoning

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ESTIMATION OF THE PPP TRAINING IMPACT

CASE OF TAMATAVE

Realised actions	Result Indicators	Encountered Problems	Suggestions / Recommendations
<p>1. INCREASING PUBLIC AWARENESS / TRAININGS / INFORMATIONS</p> <p>Increasing managers' awareness</p> <p>Transfer of acquired knowledges to users (NAC, etc)</p> <p>Training of supervisors</p> <p>Increasing public awareness (media)</p> <p>Training of the sales personnel</p> <p>Training of treatment teams</p> <p>Direct informations of the customers by retailers and/or Cirpv</p>	<p>Unverifiable</p> <ul style="list-style-type: none"> - 208 NAC volunteers in 52 sites (Brickaville) - 140 NAC volunteers in 35 sites (Vatomandry) - 17 teams of cane planters (before the training in Brickaville) - 12 AVB, 2SZ, 1 TS in Vatomandry - Staff Ciragri, 4 TS, 2 researchers, 2 SOP, 4 SZ in Toamasina - 1 radio programme in Sainte Marie - 1 radio programme in hand in Vatomandry (transmitter out of order) <p>90% of retailers (PPP inquiry)</p>	<p>Lack of supports (posters ..)</p> <p>Level heterogeneousness</p>	<p>Carrying on to increase public awareness</p> <p>Documentation support (copy of the legislation...), bills and posters available to users, technical literature.</p> <p>Periodical experience exchanges</p> <p>Proposing programmes to local antennas</p> <p>Periodical check up</p>
<p>2- PRODUCT MANAGEMENT</p> <ul style="list-style-type: none"> • .Enforcement of regulation <p>Labelling</p>	<p>Labelled bottles with incomplete informations (90% of the cases)</p> <p>1 warehouse not complied with standards</p>		

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<p>Warehouse layout</p> <p>Protection of the staff</p> <p>Stocking conditions</p> <ul style="list-style-type: none"> • Use <p>Efficient and safe products</p> <p>« Ady gasy » inventory</p> <p>Use of bio-pesticides (Beauveria, Metarrhizium)</p> <p>Cultivation protection policy appropriate to environment (Sirama)</p>	<p>7 warehouses : insufficient protective clothing</p> <p>Only few products should be kept in the warehouses</p> <p>Slogan : use prohibited without PV's advice</p> <p>Sirama : <i>Beauveria</i> at industrial production stage, <i>Metarrhizium</i> –halfway through industrial production</p> <ul style="list-style-type: none"> - Minimum Tillage - Packings adapted to needs (tenders) - Limitation of composition choices 	<p>Prohibited products used in truck farming</p> <p>Insufficient means for test operations</p> <p>Themes do not suit reality</p>	<p>Observance of the arrangements for product use authorisation</p> <p>Available technical informations</p>
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NECESSARY CONDITIONS FOR A GOOD PESTICIDE STORAGE

RESULTS OF A TEAMWORK EXERCISE DONE DURING SERIES OF TRAINING

Measures to be observed during the establishment	Warehouse design	Stocking condition to be observed during the exploitation	Basic rules of management, to be observed	Safety measures and precautions to be taken for the workers' protection	Necessary conditions for a normal running of a warehouse
1.1 Far from build-up areas	2.1 Properly secured (emergency exit, accesses properly closed)	3.1 Gathering the products according to their categories and toxicity	4.1 Good knowledge of pesticides	5.1 Training of the staff on safety measures	6.1 Good stock control
1.2 Far from water supply points and other waters			4.2 Legible labelling	5.2 First aid necessities and sheet for each available product	6.2 Good relationships between co workers
1.3 Downstream of the high wind	2.2 Sanitary installations in the event of poisoning.	3.2 Separating the products according to packing types	4.3 Periodic checking of the packings	5.3 Nutritional compensation	6.3 Skilled storekeeper (O2)
1.4 Accessible all the year round	2.3 Cemented watertight floor, camouflaging .	3.3 Stocking on pallets, no contact with the wall	4.4 Surfaces proportional to stocks in order to avoid overstocking	5.4 Appropriate protective clothing	6.4 Unskilled persons not admitted
1.5 Outside zones liable to flooding	2.4 Appropriate ventilation system	3.4 Hermetically sealed packing	4.5 Well kept stock sheets	5.5 Cleaning necessities (shower...)	6.5 Updating of working documents
	2.5 Permanent building with a good air circulation	3.5 Visible and legible labels	4.6 Labelling problem during the repackaging	5.6 Barrels for recovery	6.6 To get supply in time
	2.6 Spacious and well ventilated interior, watertight roof	3.6 Gathering the products according to their types	4.7 Stock forecast according to needs	5.7 Periodical check-up	6.7 Periodical control by managers
	2.7 Impounding system of cleaning waters and leak.	3.7 Batches easy to locate	4.8 "First arrived, first let out" rules	5.8 Absorbent materials in case of leaks	6.8 Periodical training of the staff
	2.8 Separated from the other buildings of the complex		4.9 Periodical analysis of quality control	5.9 Sign board	
	2.9 Fire-fighting equipment		4.10 Periodical staff training on management techniques.	5.10 Sticking up instructions to be followed in case of accident	