

Guidelines “Good Agricultural Practices for Family Agriculture”



Departmental Program on Food and Nutritional Security.
Antioquia, Colombia, Project TCP/3101/COL – UTF/COL/027/COL



Guidelines “Good Agricultural Practices for Family Agriculture”

Authors

Preparation and edition of technical material:

- Juan Izquierdo, Ph.D. Senior Plant Production Officer. FAO, Latin America and the Caribbean
- Marcos Rodriguez Fazzone, GAP Consultant, FAO, Latin America and the Caribbean
- Marcela Duran, FAO Volunteer Programme. FAO, Latin America and the Caribbean.

Drawings and diagramming were under:

- Marcia Miranda M.
- Graphic Designer
- Marcelo Carrillo S.

Acknowledgement to comments and suggestions coming from:

- TCP/COL/3101/COL and UTF/COL/027/COL project teams
- Maria Teresa Oyarzun, FAO Consultant, Latin America and the Caribbean



The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

ISBN 978-92-5-105757-5

All rights reserved. Reproduction and dissemination of material contained in this information product for educational or other non-commercial purposes are authorized without any prior written permission from the copyright holders provided the source is fully acknowledged. Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission of the copyright holders. Applications for such permission should be addressed to Chief Electronic Publishing Policy and Support Branch Information Division FAO, Viale delle Terme di Caracalla, 00153 Rome, Italy. Or by e-mail to: copyright@fao.org

Introduction

This manual has been prepared by the Group on Agriculture of the FAO Regional Office for Latin America and the Caribbean.

The purpose of this work is to spread the basic concepts of Good Agricultural Practices (GAP) in order to: guide the production systems towards a sustainable agriculture and ecologically safe, obtain harmless products of higher quality, contribute to food security generating income through the access to markets and improve working conditions of producers and their families.

The manual addresses agricultural technicians and extension workers, producer organizations, rural school teachers, children, urban and peri-urban citizens and Family Agriculture groups in general.



Index

I. What are Good Agricultural Practices?

Concept

Who benefit from the GAPs?

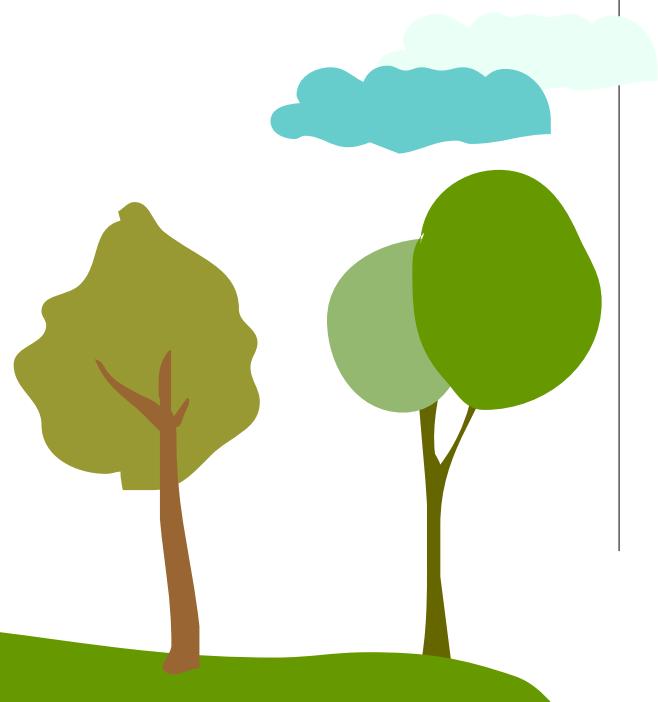
Diagram: What do the GAPs foster?

II. Why should I use Good Agricultural Practices?

Advantages and benefits versus problems and risks by non application of GAPs

III. How should Good Agricultural Practices be implemented?

1. How can working conditions be improved and those of male and female workers?
 - 1.1 What services must be assured for male and female workers?
 - 1.2 What services must be assured for workers?
2. Which is the best place to sow?
3. How must the soil be prepared?
4. How can crops be handled?
5. How can water be used and manager?
 - 5.1 How must water and irrigation be used?
 - 5.2 Water for the family and workers
6. How must agro-chemicals be used?
 - 6.1 What agro-chemical should I use?
 - 6.2 What elements should I use to protect myself?
 - 6.3 How should I apply agro-chemicals?
 - 6.4 How and where should I keep agro-chemicals?
 - 6.5 What must I do with the empty containers?



7. What fertilizer should I use and in what quantity?
 - 7.1 How must I apply fertilizers?
 - 7.2 How and where should I keep fertilizers?
8. How should organic manure be used?
 - 8.1 What type of manure should I apply and how should I do it?
 - 8.2 Where should I prepare organic manure?
9. Animals in the field.
 - 9.1 Work animals
 - 9.2 Production animals
 - 9.3 Domestic animals (dogs, cats, others)
10. Which is the best way of harvesting?
 - 10.1 In what conditions should the workers doing the harvesting be?
11. How must the transport of food be done?
12. What must be taken into account at the moment of selling the product?
13. What information must I register to have a better control of the product?
14. How does the buyer know that my product was processed with GAPs?

I. What are Good Agricultural Practices?

Concept

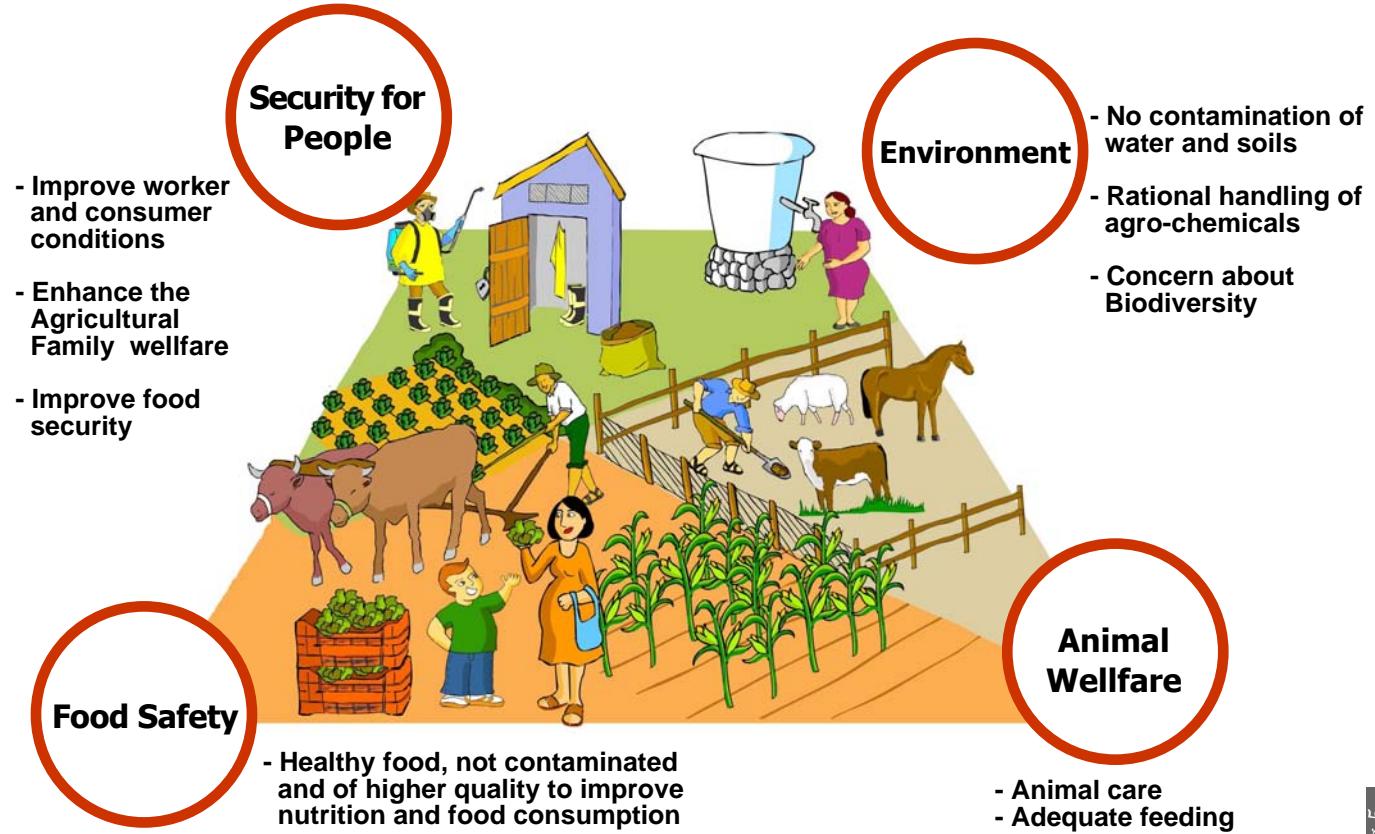
- ◎ Consumers are ever more concerned about obtaining safe food and produced caring about environment and worker wellbeing.
- ◎ Good Agricultural Practices are born in this context and can be simply defined as Doing things well and guaranteeing it has been done so
- ◎ GAPs and GMPs (Good Manufacturing Practices) are a set of principles, regulations and technical recommendations applicable to production, processing and food transport, addressing human health care, environment protection and improvement of worker conditions and their families.

Who benefit from the GAPs?

- ◎ Farmers and their families that will obtain healthy and good quality food to assure their nutrition and nourishment, generating a value added in their products to access markets in a better way.
- ◎ Consumers, that will enjoy better and safe quality food, with sustainable production.
- ◎ The population in general, that will benefit from a better environment.



What do the GAPs foster?



II. Why should I use Good Agricultural Practices?

WITH BPA



Healthy and good quality products to improve nutrition and nourishment of the family.



Healthy workers



Children attend school



Sustainability and access to new markets High quality (differentiated product)



WITHOUT BPA

Products in bad conditions and/or contaminated affecting family health



Sick workers



Children do not give priority to school attendance and spend energies doing farming work



Loss of markets and rejected products. Low quality product

WITH BPA



Animal welfare
Clean field
Toilets and
deposits



Control of
production



More income
Better prices for quality
Lower costs (\$) (-agro-chemicals)
Higher yields (Productivity)

WITHOUT BPA



Animals are tired
Contaminated field
Latrine and
infrastructure in bad
conditions



Confusion and
disregard



Less income
Lower prices
Higher costs (\$) (+agro-chemicals)
Lower yields

III. How should Good Agricultural Practices be implemented?

1. How can working conditions be improved and those of male and female workers?

- All workers should be registered in the social security system
- All workers will be trained, especially in agrochemicals/fertilizer management, hygiene and first aid.



- Priority of children is to attend school and they may only help in the field in activities which do not attempt against their security and times to study.

1.1 What services must be assured for male and female workers?

- First aid kit



- Emergency phones
(fire brigade, police, hospitals)



- Make a checkup for you and your family and request health certificates from workers to be recruited.



- Personal protection equipment, above all for the application of agro-chemicals



- Participate in health sessions carried out by the hospital or health centers of your community

- Weight and height of your children should be analyzed to see if they are well fed.



- In order to improve nourishment, nutrition and health of your family, use healthy products in daily meals

1.2 What services must be assured for workers?

- Workers should count with personal protection equipment, especially for the application of chemical products, and also a first aid kit.



- There should be enough number of fixed or mobile toilets for all workers.
- Toilets should be kept clean, in good conditions, ventilated and doors should close well.
- Toilets should have: trash can, toilet paper, washbasin, potable water, soap, towels.

- If bins or water tanks are used for hygiene, **remember:**
- Containers should be kept clean on the inside and outside.
- Water must be cold, clean, without odors and not allowed to stagnate.
- Keep them under shade.



Hygiene measures:

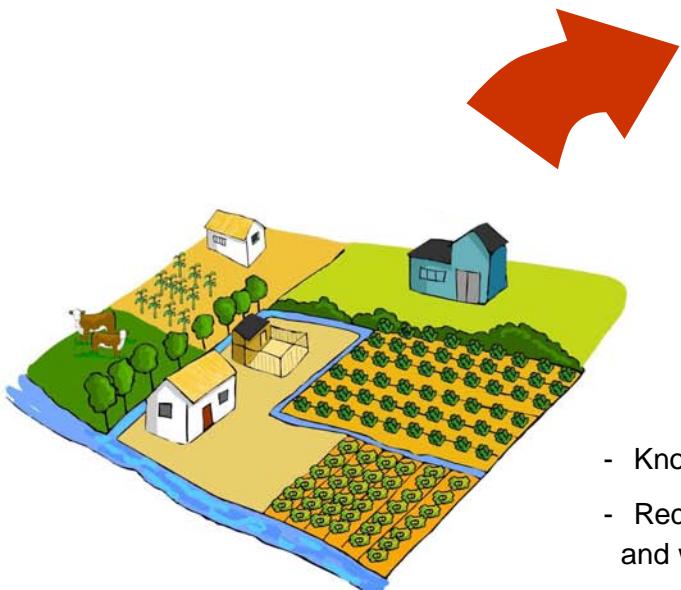
- Keep good personal cleanliness
- Consider the posters “use the toilets” and “wash your hands”
- Remember to wash your hands after using the toilets.



- When you have an **infectious disease** or with symptoms (diarrhea, vomits, etc.) fresh food should not be manipulated.

2. GAP in crops

Which is the best place to plant?



1st year



2nd year



3rd year



- Know the history of the field
- Recognize more fertile lands and with availability of water



- Do not plant in fields with chemical contaminants

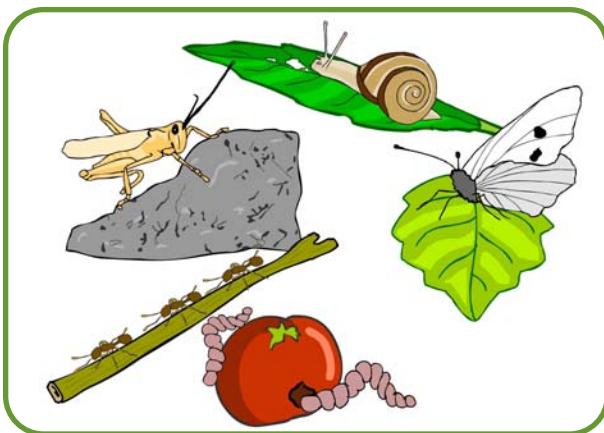


- The field should be free of trash, papers, plastics and empty containers.

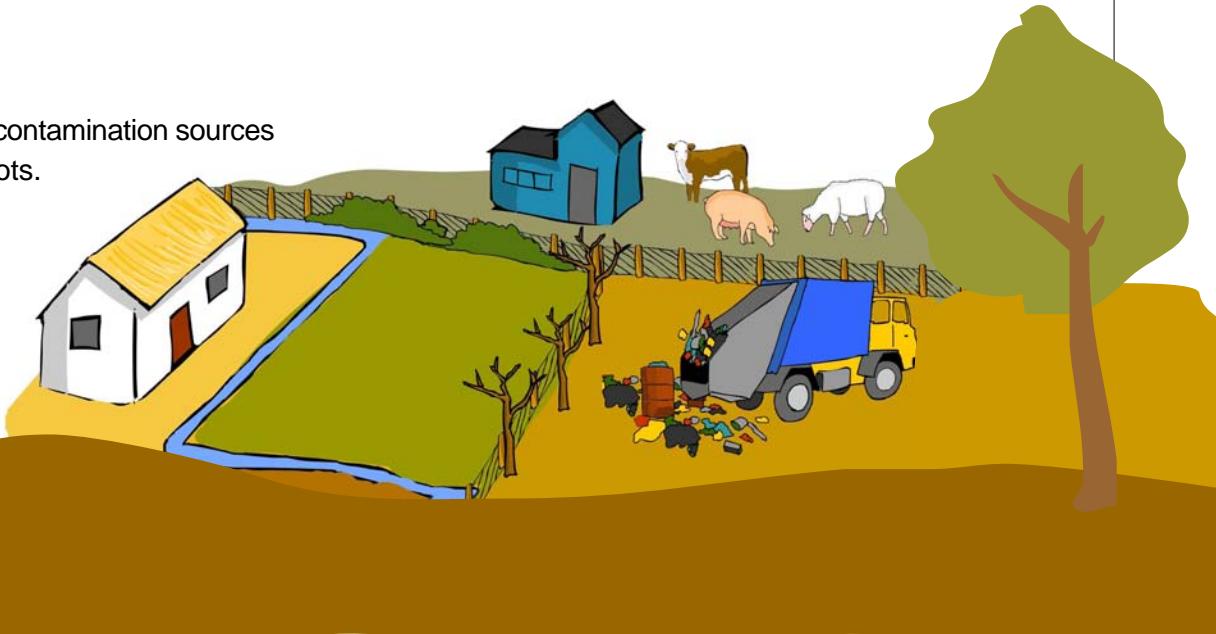


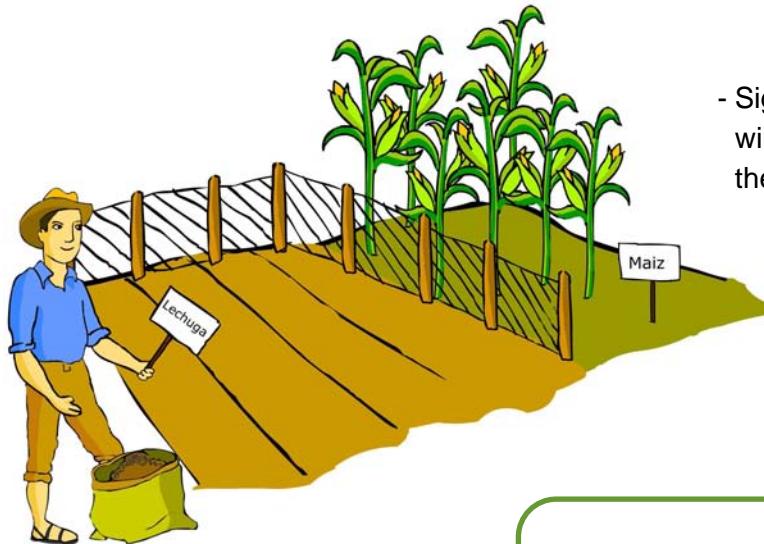
- Check there is no risk of water contamination





- Be acquainted with the type of pests, diseases and weeds that exist, mainly in the crop area.
- Check on possible contamination sources from neighboring plots.





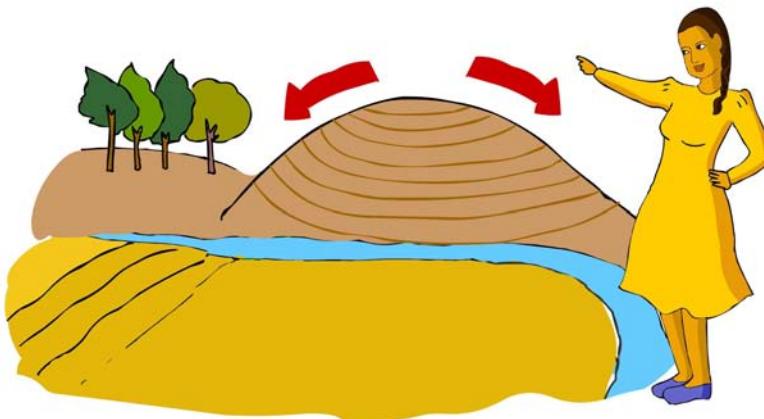
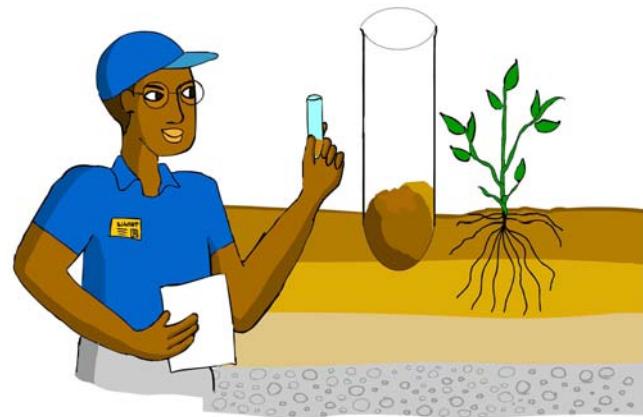
- Signpost the place where the crop will be planted with the number of the lot or name of the crop.



- For all these activities consult with the technician that you trust.

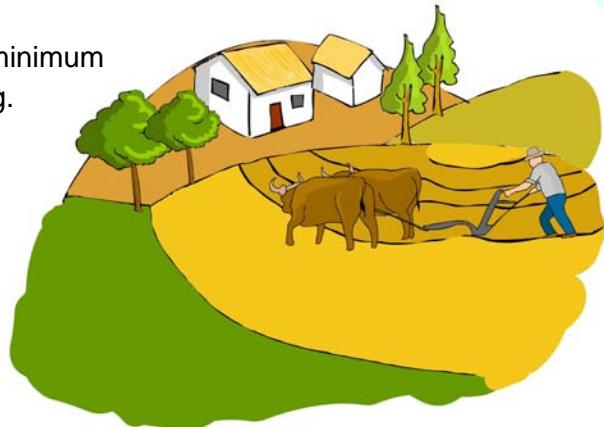
3. How must the soil be prepared?

- With the support of the technician analyze the type of soil and its depth for good growth of the roots.



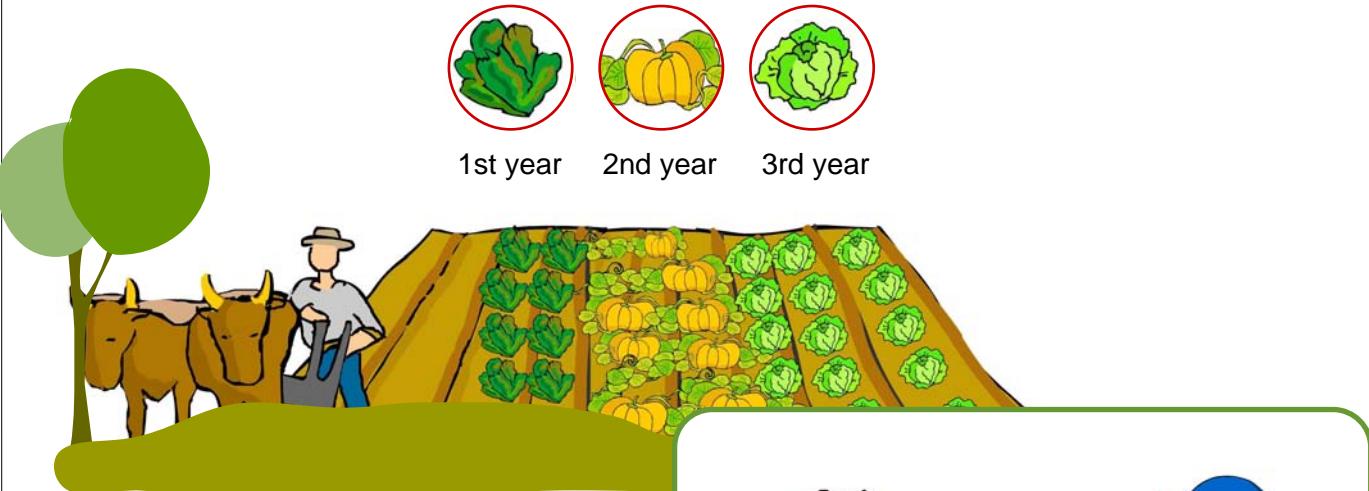
- Consider the slope of the field where the planting will be done.

- Perform the minimum possible tilling.



- Avoid soil erosion and compression.





- Practice crop rotation



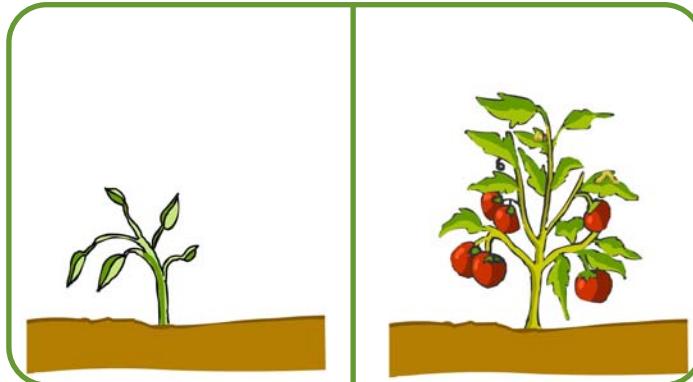
For all these activities consult with the technician that you trust.



4. How can crops be handled?



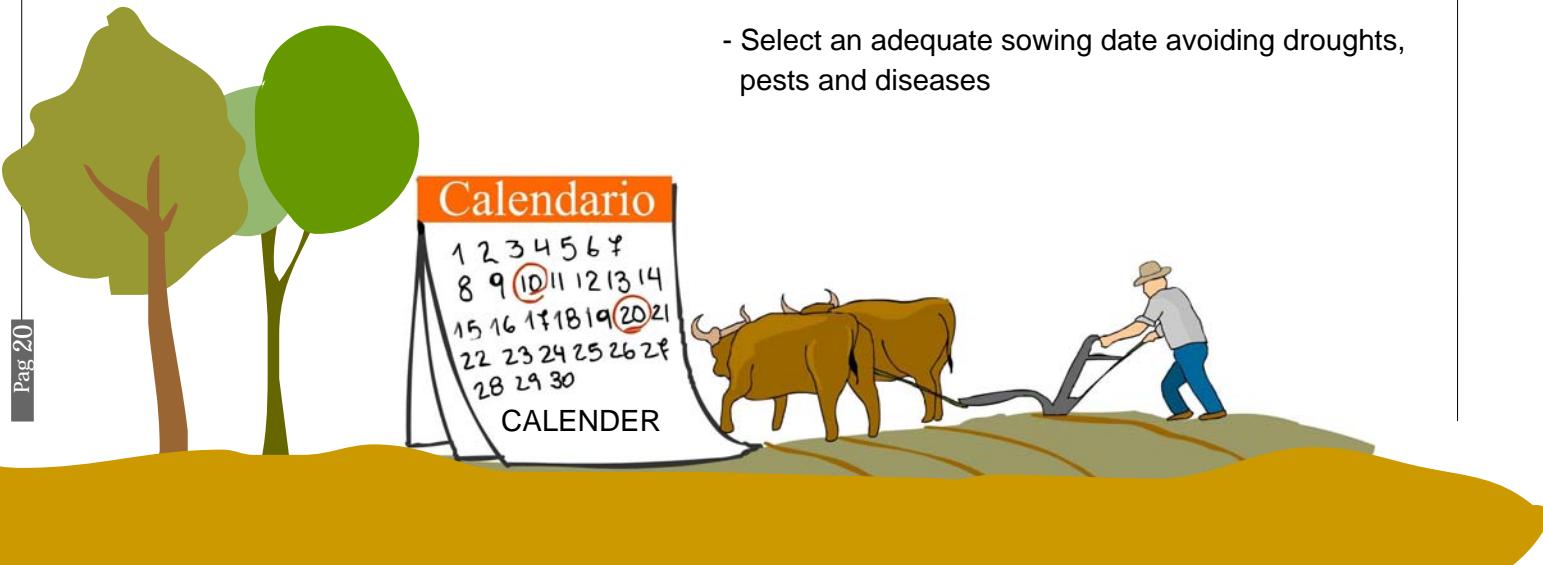
- Select improved seeds and resistant to the most frequent diseases according to the recommendations of the technician.



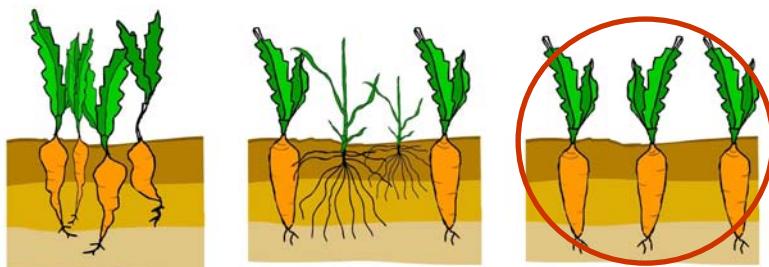
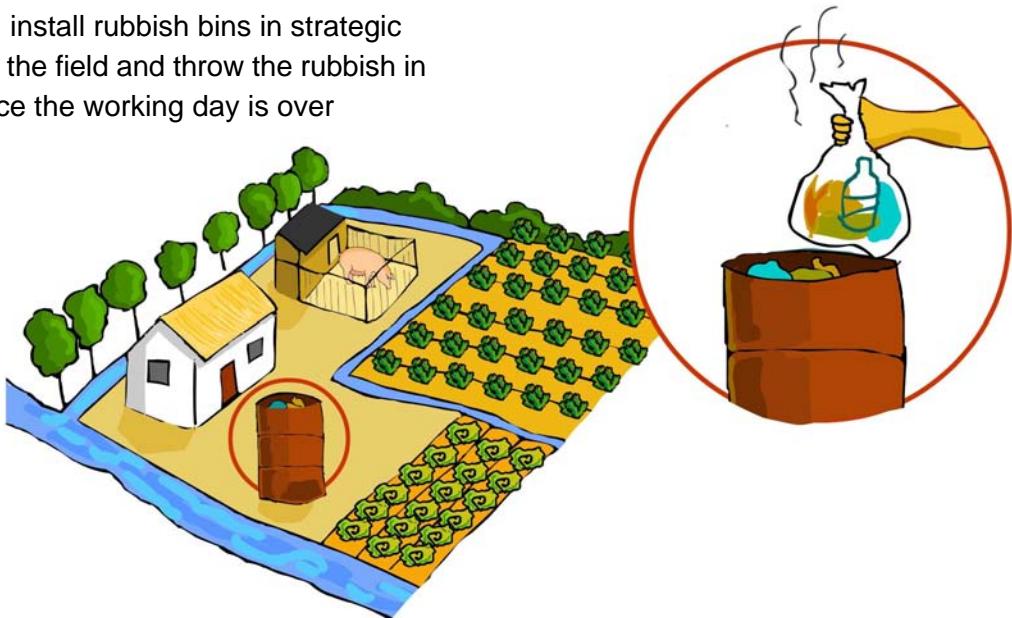
- If necessary, develop practices to eliminate pests and diseases from the seeds in order not to affect the crop



- Select an adequate sowing date avoiding droughts, pests and diseases

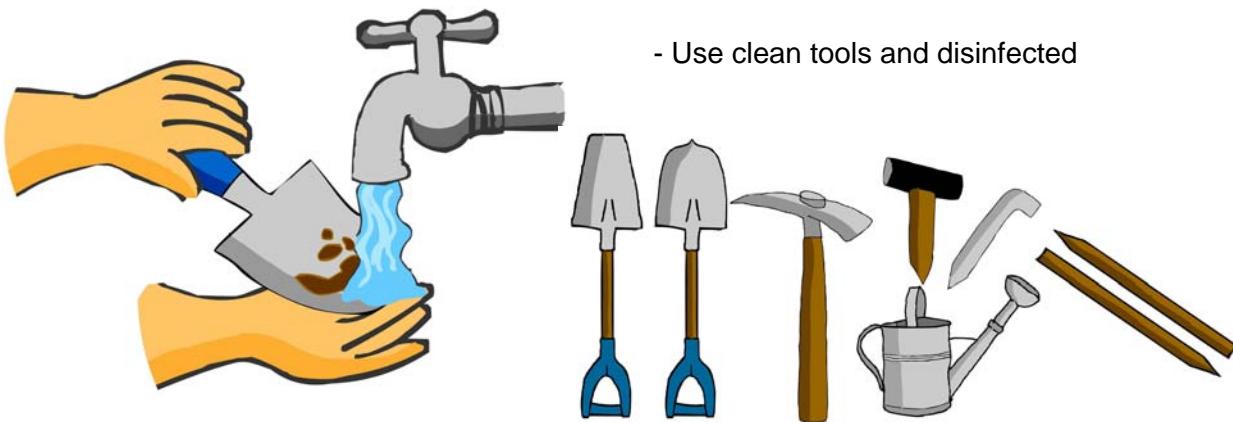
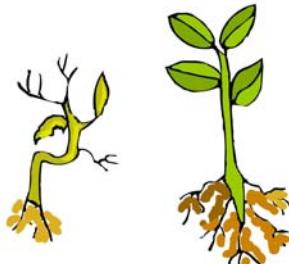


- Wastes: install rubbish bins in strategic zones of the field and throw the rubbish in them once the working day is over



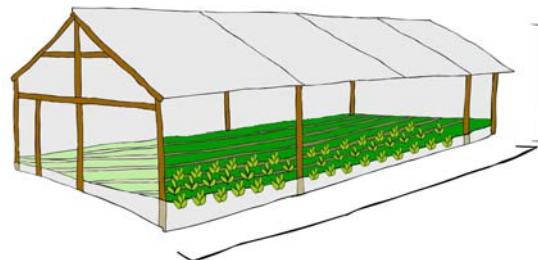
- Density: sow at an adequate distance

- **Transplant:** select healthy seedlings
and discard the feeble ones or with
signs of disease



Protection of crops

- **Seedbeds:** protect them from the sun and heavy rains
- **Greenhouses:** regard measures to obtain a good control of temperature and humidity
- **Ventilation:** control temperatures, humidity and wind considering the season of the year and needs of the crop.



- For all these activities consult with the technician of your trust.

5. How can water be used and managed?

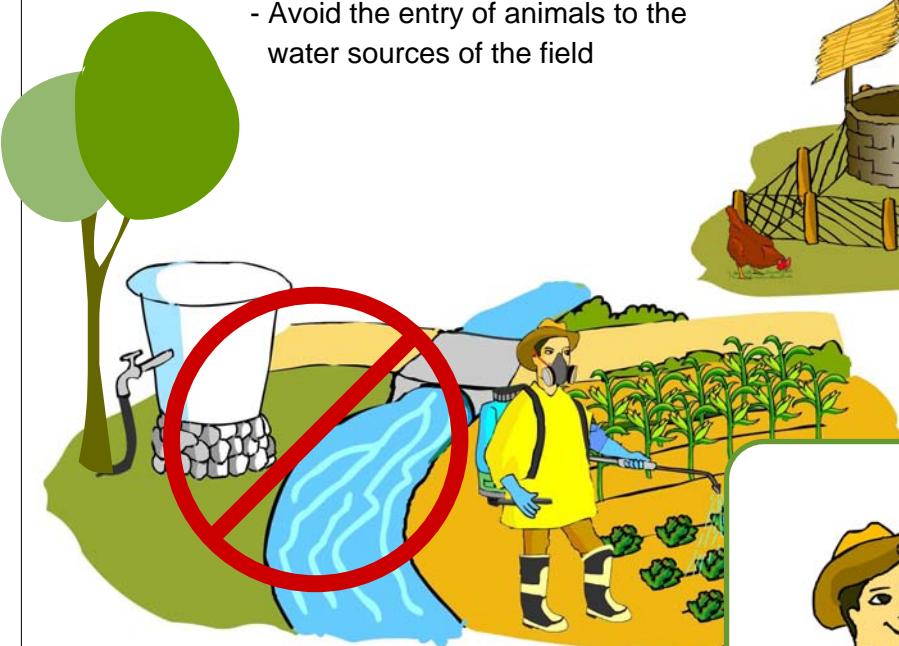
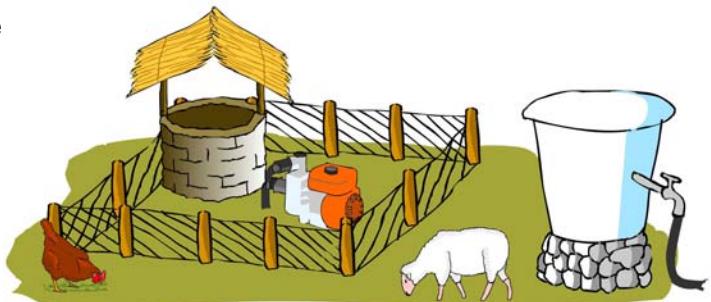
- Analyze the water of the field at least once a year to see if it is contaminated



- Use the required amount of water for savings and care of the crop



- Avoid the entry of animals to the water sources of the field



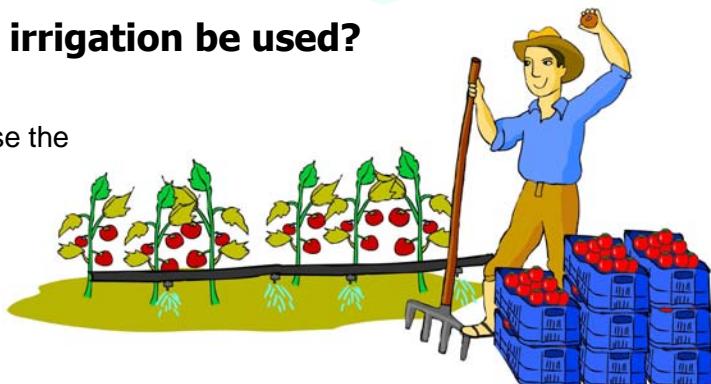
- Do not perform applications and agro-chemical preparations near the water sources



- For all these activities consult the technician of your trust

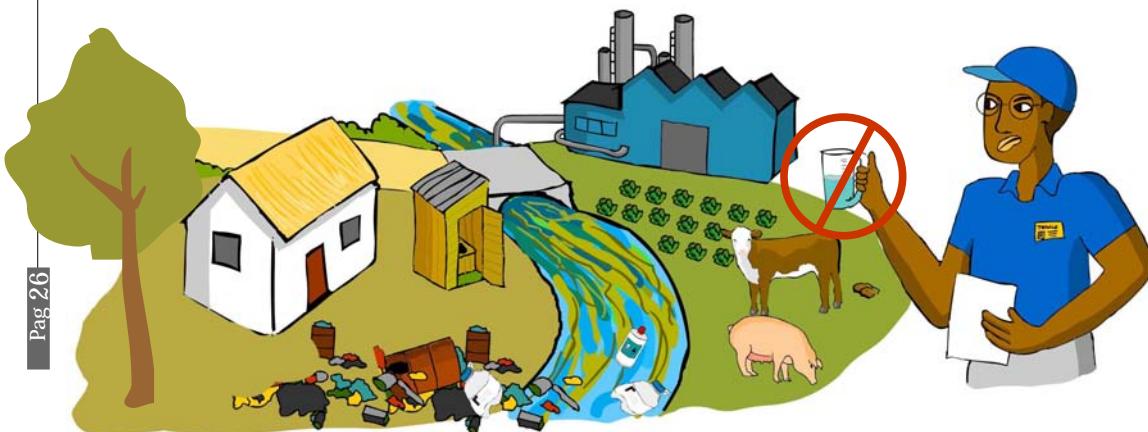
5.1 How must water and irrigation be used?

- The use of irrigation may increase the amount of production



- Identify the water sources used for irrigation and with the assistance of the technician verify that they are not contaminated.

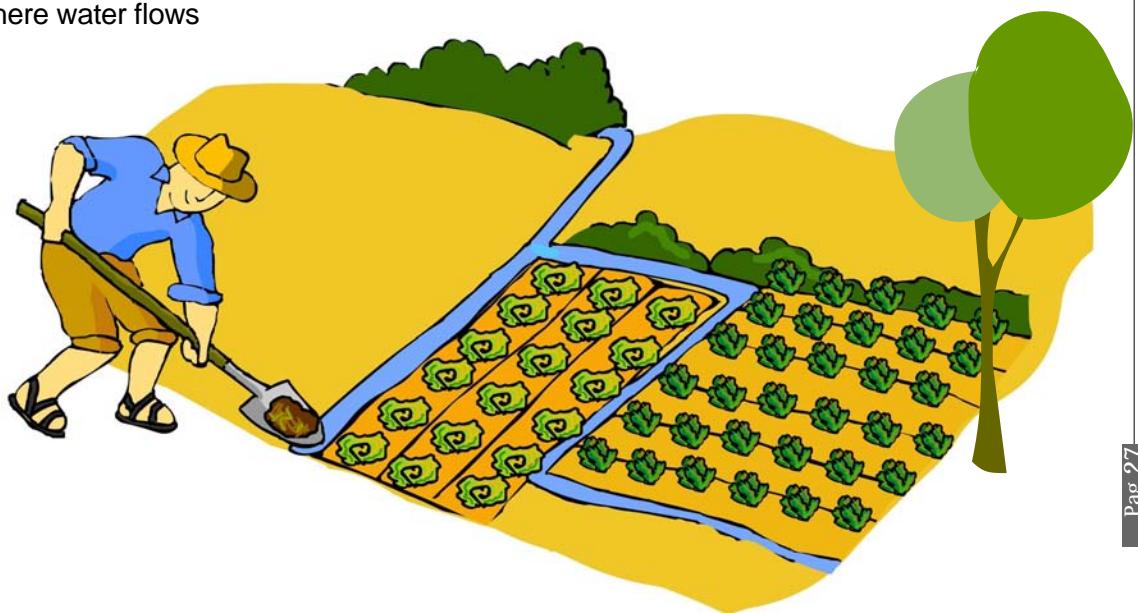
Remember! - Sewage waters must never be used for irrigation, nor be given to drink to the family or animals.





- Protect water tanks and irrigation channels from animals, birds, etc. (If water is contaminated your family and workers may get sick and the food stuff may contaminate making you loose sales).

- Keep channels where water flows free of rubbish



- Use always the irrigation method recommended for your crop
- Regard the water requirements of the crop (do not irrigate in excess)



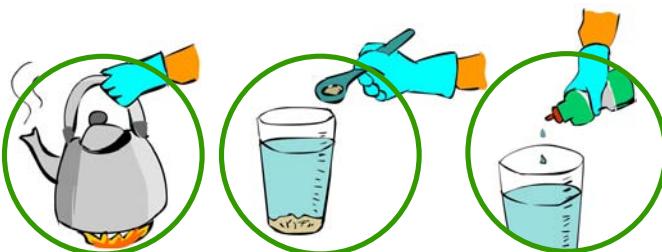
- An incorrect use of water may damage the quality of the crop, hence it is necessary to program the use of irrigation.



- For all these activities consult the technician of your trust

5.2 Water for the family and workers

- The plot should count with potable water for drinking and to wash hands and body
- Avoid still waters in empty containers or old tires
- Still waters are a source of mosquitoes and other animals which affect health



- If there is no potable water then it must be treated
- Consider the following methods:
Boiling, clarification, chlorination

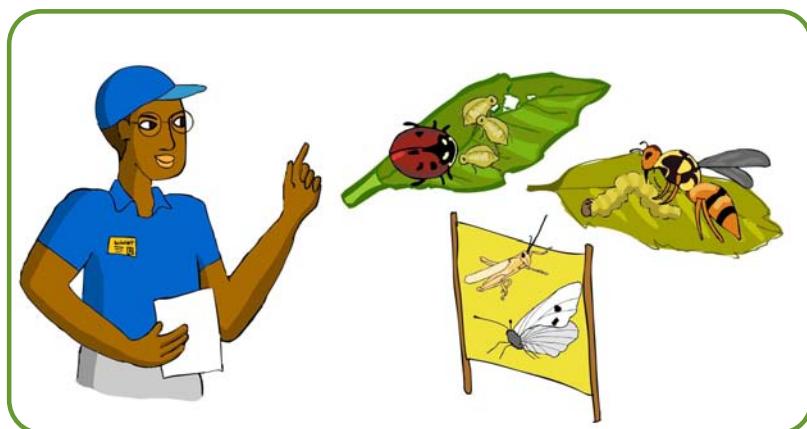
6. How must agro-chemicals be used?

6.1 What agro-chemical should I use?



- Recognize the type of weeds, pests and diseases affecting your crop

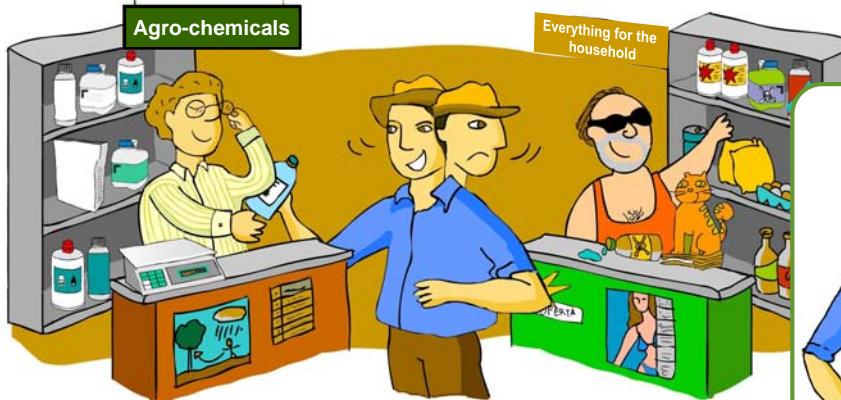
- Analyze if it is possible to apply a biological control instead of a chemical one



- Consult a technician to know what agro-chemicals are recommended to be used in accordance with your crop and the type of weeds and diseases affecting it



- The agro-chemicals you use must be admitted, that is, they must be registered in your country
- Expired agro-chemicals or in bad state should not be used (verify due date)



- For all these activities consult with the technician of your trust

6.2 What elements should I use to protect myself?

- Children, pregnant women and old age people must not be near the area where agro-chemicals are applied



Elements:

Protection lenses



Rubber gloves



Face mask



Rubber boots



Waterproof suit

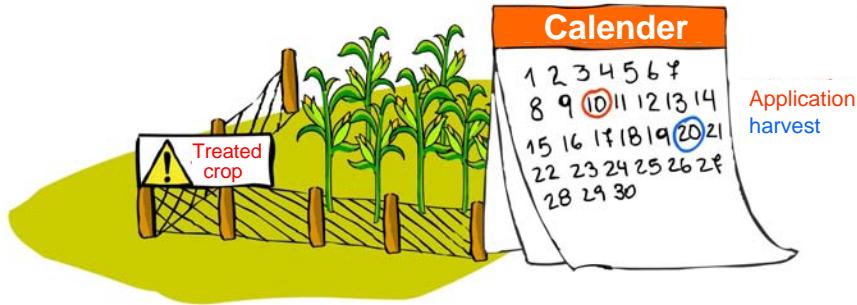
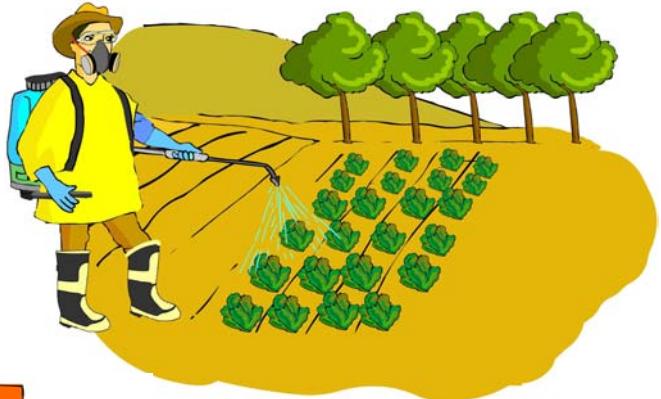


- Once the application is over, the worker should have a shower and wash the protection elements



6.3 How should I apply agro-chemicals?

- Apply the needed proportion of agro-chemicals according to the recommendation of the technician
- Periodical observation of the crops for timely detection of any problem



- Respect waiting time for each application
- Do not enter into the plantation immediately after the application

- Write down the applications of agro-chemicals that are being done

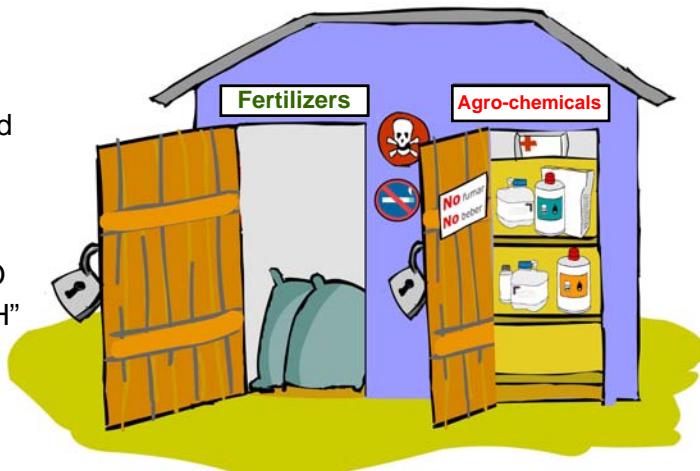
Date:.....
Name of producer:.....
Worker:.....
Crop:.....
Variety:.....
Pest or disease:.....
Name of agro-chemical:.....
Active principle:.....
Number of doses:.....
Application equipment:.....
Waiting time:.....

6.4 How and where should I keep agro-chemicals?



- A special construction should be made at the field to store agro-chemicals
- When small amounts are stored, use a sealed box away from the house
- The place should be out of reach for the children and animals

- This place should be locked, secure, fresh and ventilated
- Highlight the place with the following posters “WARNING”, “POISON”, “NO SMOKING”, “NO DRINKING”, “NO EATING”, “DO NOT TOUCH”



- Agro-chemicals must be duly separated and isolated from the seeds, forage, harvested products, and fertilizers

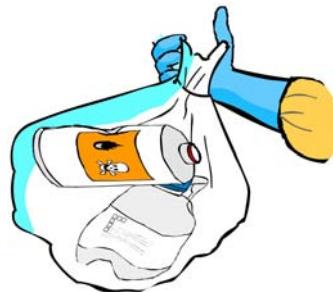
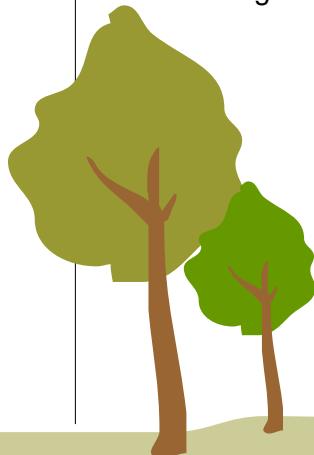
6.5 What must I do with the empty containers?



1- Give them a triple wash. Do not mix wash waters with drinking and working waters



2- Break them or perforate them so as not to use them again



3- Keep them in close bags to deliver them to the reception centers of containers

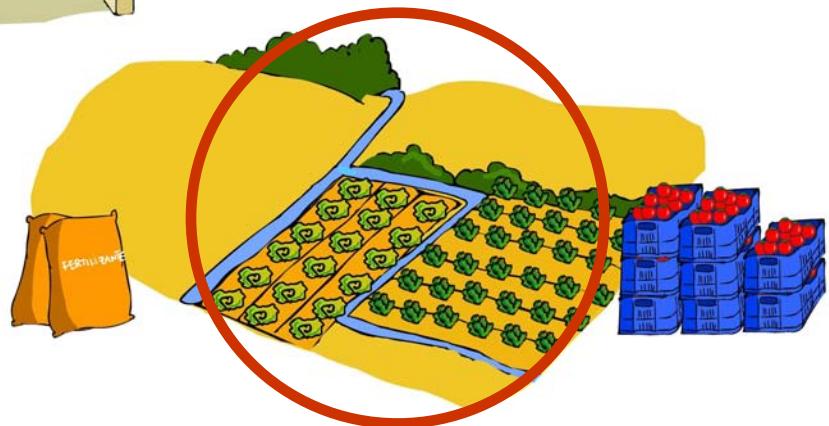


7. What fertilizer should I use and in what quantity?



- Consult with the technician to know what fertilizer and what quantity is recommended for your crop

- Consult with the technician to see if it is necessary to apply chemical fertilizers or if it is possible to use only organic manure



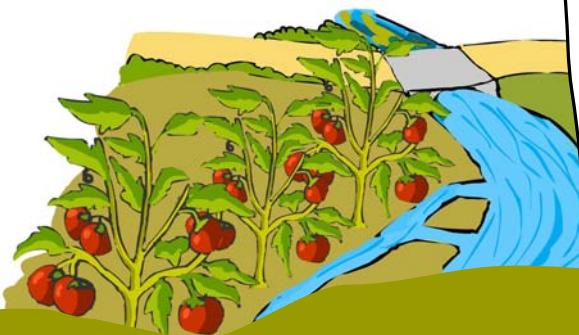
7.1 How must I apply fertilizers?



- Apply only the dose required as per recommendations of the technician
- Do not apply more than is necessary to avoid contamination of waters and soils

- Write down the applications of fertilizers being done

date:.....
name of the producer:...
worker:.....
crop:.....
variety:.....
pest or disease:.....
name of fertilizer:.....
number of doses:.....
equipment of application:..

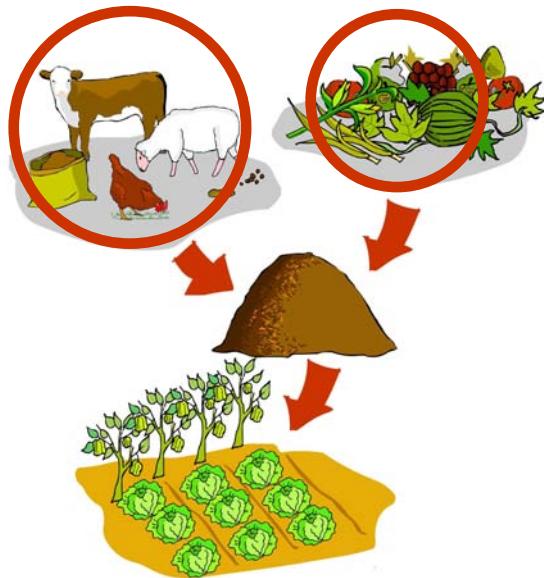


7.2 How and where should I keep fertilizers?

- A special place should be constructed at the field to store fertilizers
- Fertilizers should be duly separated and isolated from seeds, forage, harvested products, and agro-chemicals
- This place must be: locked, secure, cool, and ventilated
- Signpost the place with the following posters: "RISK", "POISON", "NO SMOKING", "NO DRINKING", "NO EATING", "DO NOT TOUCH"
- The place must be out of reach for children and animals



8. How should organic manure be used?



- Analyze if it is possible to use manure of animal or plant origin in your field
- Remember that the wrong use of manure is one of the main sources of contamination

8.1 What type of manure should I apply and how should I do it?

- Use only stabilized manure
- Use only manure with a previous composting treatment





- Always apply organic manure before planting the crops



- Write down the applications being done

Date:.....
Name of producer:.....
Worker:.....
Origin:.....
Type of treatment:.....
Place of application:.....
Amount of applications:.....



8.2 Where should I prepare organic manure?

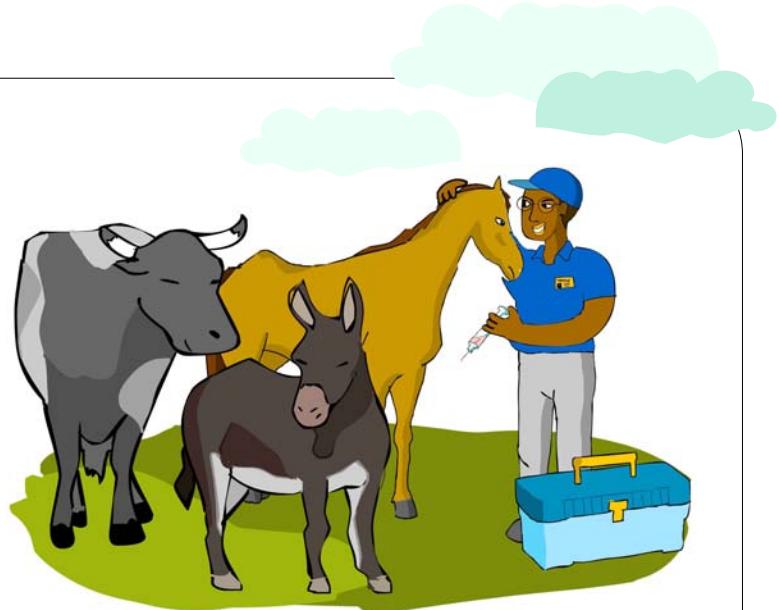
- Manure should be prepared in places far away from the crop area
- Manure should be prepared in places far away from water sources and lands subject to floods



9. Animals in the field.

9.1 Work animals

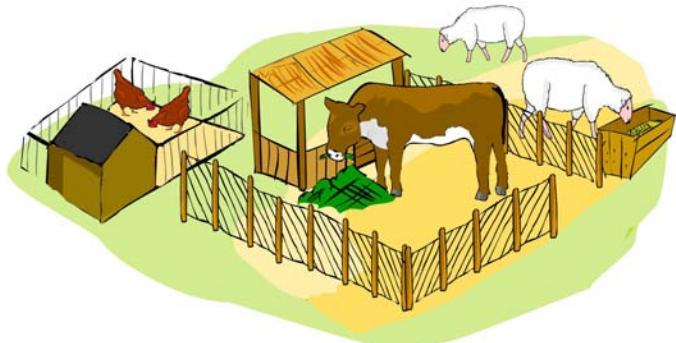
- Verify with the technician that the animals for work are healthy



- When they are not working, animals should be out of the crop area

9.2 Production animals

- Promote animal welfare: adequate space, healthy animals, adequate feeding, fresh water



9.3 Domestic animals (dogs, cats, others)

- Domestic animals (dogs, cats) must be far away from the crop area and from the places where agro-chemicals and fertilizers are stored
- All workers should be informed that they are not allowed to enter animals into the crop area. The field must signposted.



10. Which is the best way of harvesting?

- This stage is very important because food stuff may be contaminated!!

10.1 In what conditions should the workers doing the harvesting be?



- The harvesting staff must have clean hands, short nails, tied hair and no smoking nor drinking during the harvest



- At the fruit trees no fruits should be collected from the ground

- Carefully collect the products avoiding knocks
- The fruits and vegetables harvested should be placed in clean containers (washed and new) without touching the ground
- Do not use chemical and fertilizer containers to collect the harvest



- The fruits and vegetables harvested must be placed under shadow and away from animals and the storage of chemicals and fertilizers

11. How must the transport of food be done?



- Transport food stuff in a clean transport vehicle, in good conditions and in compliance with transit regulations
- Take care while loading food stuff
- In case of using an open transport medium, the load must be covered to avoid the sun, dust and rain

- Do not transport together with animals, fertilizers, or agro-chemicals



- The staff participating in loading and unloading must keep hygiene and cleanliness the same as the rest of the workers



- Register the type and amount of product loaded, the date, name of the worker or family member that made it and the name of the person driving the transport

Date:.....

Name of worker:.....

Driver:.....

Origin:.....

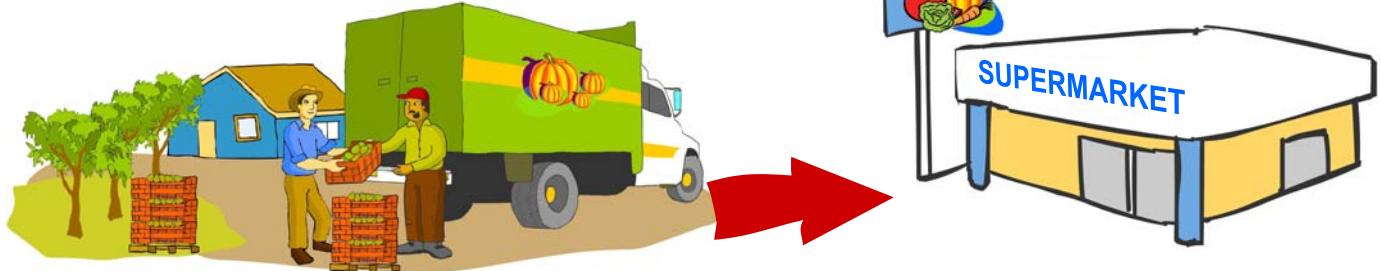
12. What must be taken into account at the moment of selling the product?

- Study the market and seek information about prices

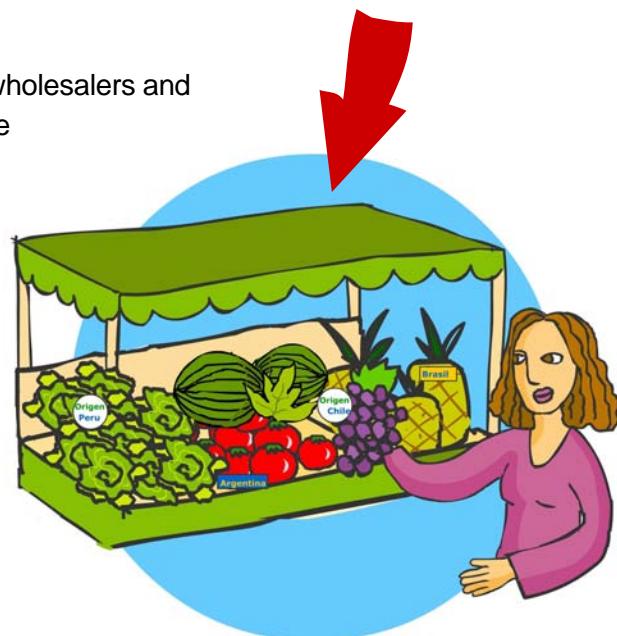


- Have a meeting with the neighbors to know about prices and to whom they sell
- Associate with the rest of the producers to obtain a better price

- Sell to someone you trust



- Make contracts with cooperatives, wholesalers and supermarkets to safeguard the sale



- Point out the better quality of the product

13. What information must I register to have a better control of production?

Advantages of the registry

- Get a better knowledge of your field and crop
- Save money in production
- Identify where the problems, pests and diseases are located
- Improve the quality of the product

- Registry must be done every day once the work is over (date of sowing, harvest, application of agro-chemicals, etc.)
- Registries serve to keep track of the history of the product; hence they must be filed for at least three years.





- Registry of Income and Expenses:

Price and expenses in the purchase of the seed
Prices and expenses in the purchase of agro-chemicals and fertilizers
Expenses in equipment
Expenses in salaries for workers
Total expenses in planting
Total expenses in harvesting
Expenses in health for the family and workers
Other expenses (food, dressing, transport, etc.)
Income by the sale of the product
Income for work done outside the plot
Other income
Selling price of the product

- Registry of the field

Name of the plot
Location
Owner of the plot
Name of the technician or administrator
Planted area
Type
Variety used
Year of application



- Registry for keeping track or traceability:

Sowing and pre-harvesting

Amount of seed sown

Amount of dose of agro-chemicals, fertilizers and/or manure applied by crop

Date of application of agro-chemicals, fertilizers and/or manure

Name of the agro-chemical/fertilizer and of who applied it

Origin of the manure

Name of the workers of the field

Pest and disease being combated

Harvest

Date of the harvest

Amount of product harvested

Total amount of applications (agro-chemicals, fertilizers) up to the harvest

Number of workers involved in the harvest

Delivery

Date of delivery

Amount of product delivered

Name of the plot (origin)

Name of the buyer (destiny)

Number of waybill

Name of the carrier



14. How does the buyer know that my product was processed with GAPs?



- The product will count with recognition at packing that will differentiate it

- You can also sell in other markets obtaining better selling conditions



- The consumer may recognize your product at the store or supermarket and by means of a label may be informed how it was produced

**“GOOD AGRICULTURAL PRACTICES ARE THE
RESPONSIBILITY OF EVERYBODY”**



Food and Agriculture Organization of the United Nations
FAO Regional Office for Latin America and the Caribbean

Avda. Dag Hammarskjöld 3241 – Vitacura
Phone: (562) 337-2100
Santiago, Chile
<http://www.rlc.fao.org>

This manual was prepared in the framework of the Food Security
Departmental Plan (MANA). Antioquia, Colombia. Project
TCP/3101/COL and UTF/COL/027/COL



ISBN 978-92-6-105757-5

A standard linear barcode located at the bottom right of the page. It consists of vertical black lines of varying widths on a white background.

9 789251 057576
TC/MIA1193C/ /07 07/POD

Notes

Notes