



# Safe Use of Pesticides

Pesticides help farmers grow more food on less land by protecting crops from pests, diseases, and weeds. This leads to higher yields.

It's important to always practice safe use of pesticides.



Implemented by



# Principles of Passion Fruit Pest & Disease Management

1. Scout for pests and diseases at least once a week.
2. Collect samples of leaves, branches with any unknown problems and seek agronomic advice.
3. Practice the follow pest or disease control measures:
  - Keep your farm clean and free from weeds at all times. Collect and throw away fallen fruits and remove weeds.
  - Use insect traps like the fly traps from Kenya biologics to reduce the population of pests.
  - Use chemicals that are natural and friendly like Neem to control pests.
  - Use the right amounts/quantity of the chemicals to control pests as indicated on the label. This will minimise pollution to the environment.
  - Follow the spray programme given to you.
  - Keep good records of chemicals you use as well as other cultural ways to control pests on your farm.
4. Keep records of the chemicals bought and any other costs. This will help you now if your business is making you a profit or not. Follow the spray programme on the chemicals to be used to control pests from the time of planting to the end of the crop.
5. Make changes to the spray programme as needed based on environmental conditions.
6. When there is heavy rain, cases of fungal diseases are high so be on the lookout and spray fungicides as needed.
7. In hot areas, control of pests such as mites may be more frequent.
8. Spray equipment must be able to develop a pressure of 200 to 300 pounds per square inch at the nozzle.
9. Avoid using the same equipment when spraying different chemicals e.g. for pest control and weed killers (herbicides).

# Selective Use of Pesticides

- Use pesticides as a last option after other control measures.
- Whenever it is possible, choose pesticides that kill the specific pest and not ones that kill many pests.
- Check pesticide labels for information on which pests the chemical will control.

## Safe Use of Pesticides

### *When buying pesticides*

- Buy pesticides from licensed dealers.
- Check that the product has the original label.
- Before buying, check:
  - That the product has not expired.
  - That the packing has not been opened and has everything inside.
  - What you need in order to use the pesticide (e.g., knapsack).
- Keep pesticides separate from other items while transporting. It is best to have them in a locked container or well tied box.

### *Storing Pesticide*

- Keep pesticides separate from other farm tools and equipment.
- Keep all chemicals away from children or household items.
- Have a special room, cabinet or container where you keep all the chemicals.



Ideal pesticide storage cabinet made from steel, lockable, and well labeled

# Spray Equipment and Application

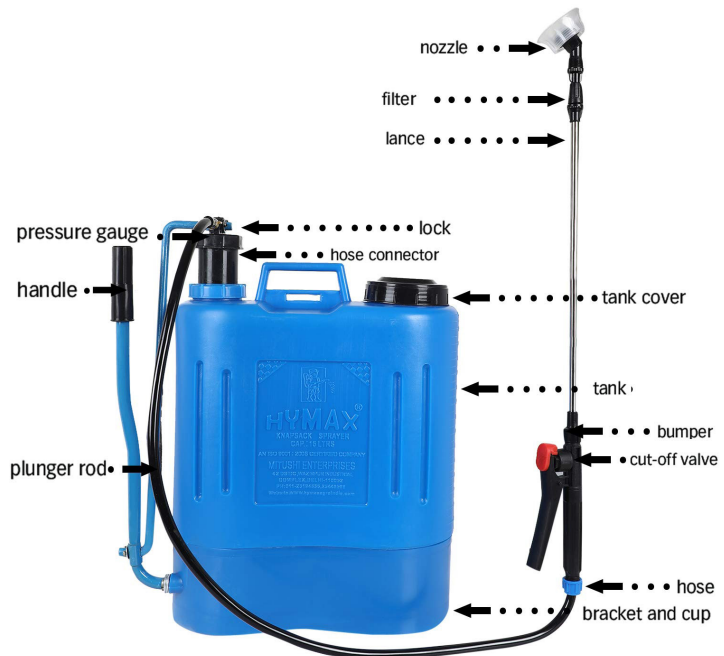
Use and maintain your spray equipment properly.

Before using your knapsack sprayer:

- Check that it does not leak. Even a small leak can harm you and the environment.
- Make sure your knapsack sprayer is clean. The smallest amount of pesticide that is left (as “carry over”) from an earlier use may damage the next crop you spray.
- Mark your knapsack sprayer before spraying so that you apply the right amount of pesticide in the best way possible.

If you apply too little pesticide, you risk not controlling the pest. If you apply too much pesticide, you increase the risk of harming the environment. It will also be more expensive.

- Never use the same equipment to apply herbicides and other pesticides.
- It is best to use one knapsack sprayer for spraying herbicides only and another sprayer for spraying insecticides and fungicides.



# Reading Pesticide Labels

Pesticide labels tell you how to use your product safely.

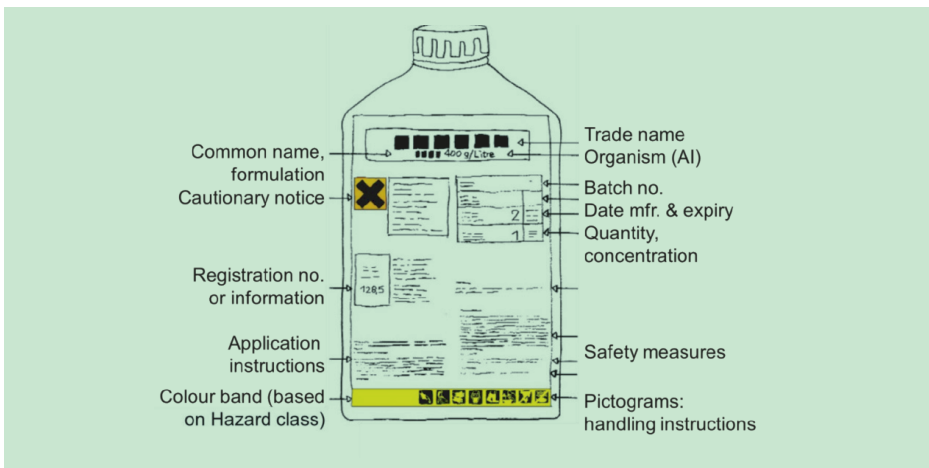
## They advise you on:

- Which pests will be controlled by the specific pesticide.
- Which crops the chemical can be used on.
- The rates to use per 20 litres knapsack or per acre.
- How to mix the chemicals.
- How and when to apply the pesticide safely.
- When you are not supposed to use the chemicals.
- The product itself: where, when and who made it.

Use this information to make sure the product is good and fit for use.

## Your label should also give advice on:

- Product safety.
- What to wear when mixing and spraying the chemical.
- How to store the chemical.
- How to dispose of the remaining chemical.
- How to clean your equipment.
- How to keep safe and some first aid advice.
- Good agricultural practices.



## What to think about before spraying

- Check how much you need to spray and follow it.
- It should not be hot or about to rain when spraying.
- Remove people, animals and put up warning signs that the area is being sprayed.
- Do not spray beyond the target area. Keep the nozzle close enough to the target area.
- Keep records with details of what was sprayed, when you sprayed and when next you will spray.
- In case of any breaks of the chemicals while spraying, shake the spray to mix well in the pump before you continue.
- Do not smoke, eat, or drink while using pesticides.
- Be aware of basic first aid or where to seek help in case of an accident.

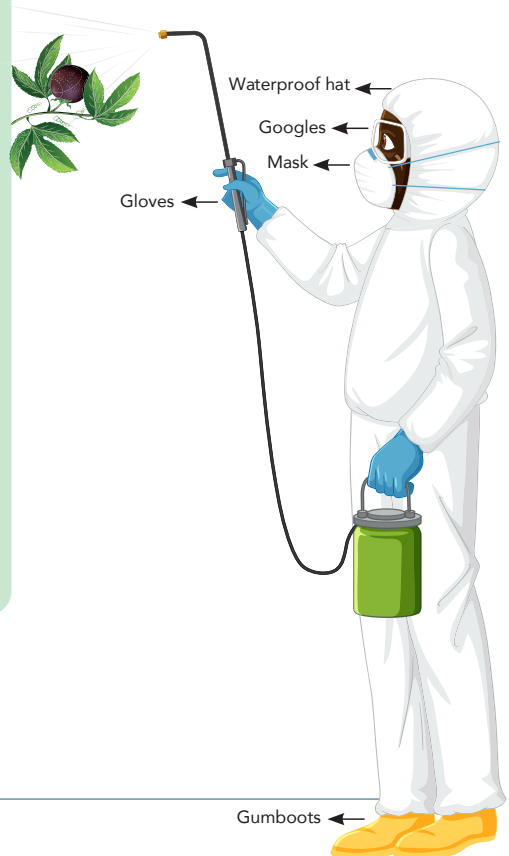
Once you have used the container with pesticide, rinse it three times. Do not bury or burn the container can.

## Personal Protective Equipment

Always wear personal protective equipment (PPE) to protect yourself while spraying chemicals.

PPEs include overalls, gloves, gumboots, goggles, and face masks.

- Use PPE whenever handling pesticides.
- Check PPE and replace torn parts.
- Do not share PPE; it should be for you alone.
- Do not mix with other clothes to avoid contamination.





Bee on passion fruit flower

## Environment and Pesticides

Protecting wildlife and the environment

- Always check the product label on the pesticide for information on any possible risks it has to the environment.
- Do not spray pesticides on natural or wildlife areas like forests, grassland.
- Keep away all seeds mixed with chemicals and cover well with soil when planting to stop animals from eating them.
- Do not leave any chemical remains like granules and pellets on the soil surface.
- Always check the label on the pesticide for information on environmental risks.

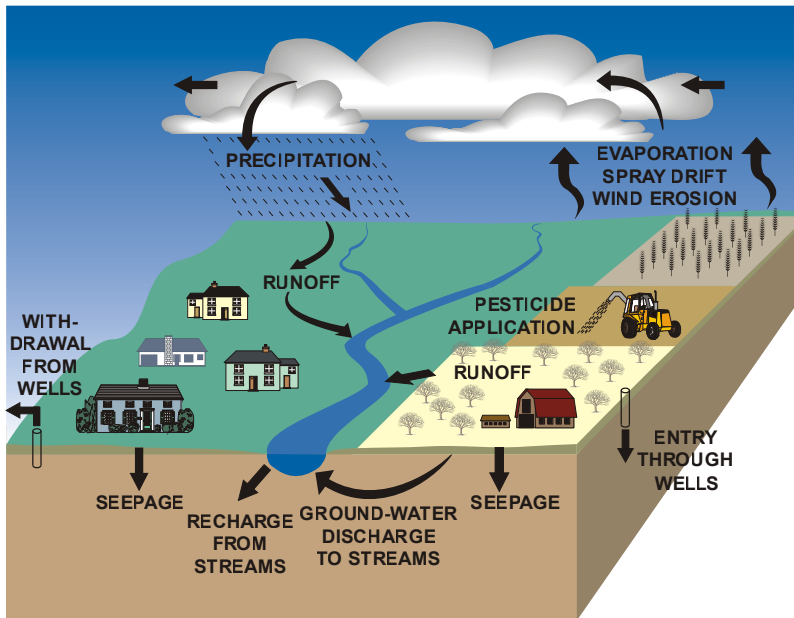
## Preservation of Pollinating Insects like Bees

There are many types of bees that pollinate crops. Pesticides that may harm bees will be labeled as 'harmful', 'dangerous', 'extremely dangerous,' or 'high risk' to bees.

To avoid causing harm to the bees;

- Spray during the morning hours when bees are less active, especially when the plant is flowering.
- Provide nesting places for bees, such as old redwood, cypress posts and sisal logs.
- It is best to place honey bee hives near passion fruit fields, especially in areas where pollinators are few.
- Do not spray into open flowers; passion fruit flowers begin opening at about noon and close at about 6:00 pm in the evening.

# To protect the Environment and Water Sources from Pesticide Pollution



## Practice Integrated Pest Management (IPM)

- IPM is the use of more than one method to stop pests e.g., cultural, chemical among others.
- Only use pesticides when needed and apply at the right time and practice Integrated Pest Management (IPM).

## Select pesticides carefully

- Read labels for instructions about the rate to use, timing and where to spray the pesticide. This will avoid loss of chemicals due to being washed away by water and not able to work well.
- Also note any water advisories or other water protection guidelines on the label.

## Consider the vulnerability of the area

- Find out how easy the soil allows the pesticides to get deep into the soil. Spaces between soils and organic matter content affect how pesticides move in the soil.
- Avoid heavy pesticide use on soil that is sandy and the land is next to a water body.



## Consider the location and condition of water wells

- Wells should be properly closed or sealed to prevent pesticides from easily getting in. Make cut-off drains to keep run-off water away from the well.
- When Pesticides spill near water wells they go into the groundwater.
- It is best to mix, store, or dispose of pesticides 100 feet away from the water well.
- Close all wells no longer in use. Do not dispose wastes into water wells not in use.

## Measure accurately

- Calculate to know how much of the pesticide and liters of water you need to mix in a sprayer. This will depend on the size of your sprayer.
- Calculate well and with care so as to use the right spray mix. This will save you money by reducing the amount of pesticide you use and avoid wastage.

## Calibrate equipment accurately

- Mark your sprayers well before you spray to be sure you are using the right amount of pesticides.
- Check the equipment for leaks and ensure it is working well to reduce chances of chemical spilling.

## Mix and load your knapsack carefully

- Handle pesticides carefully to avoid spills. Mix and load pesticides on a concrete/cemented floor to avoid spilling it on the soil.
- Fill the spray tank as far from the water source as possible. Increase the length of the water hose pipe or fill the tank in the field using a different water source.
- Never leave a spray unit not attended when filling.

## Prevent back-siphoning

- To prevent pesticides from draining back into the water source, use devices that stop water from flowing back (anti-backflow device) like a check valve on the fill hose, especially when getting water directly from a pond or stream.

## Consider weather and irrigation

- If you think it is going to rain heavily for a long time, delay spraying until the rain stops. If you apply pesticides just before the rains, there will be high run-off (washing away) and leaching (pesticides moving deep into the soil).



Never dispose of pesticides or pesticide containers near a water source, over shallow water tables, in sink-holes or in wells.

- The amount of irrigation water should be carefully controlled to reduce the chances of pesticides being leached.

### Store pesticides safely

- Buy only what is needed for a season or a specific spray. The storage area should be away from all water sources.
- A concrete floor sealed with Waterproof material will ease clean-up in case of a spill or leak.
- Check containers regularly for leaks and rust.

### Dispose of pesticide wastes carefully

- Follow the label instructions when disposing of pesticides.
- Rinse the containers 3 times or use pressure when rinsing as soon the container is emptied.
- Pour the water used to rinse into the spray tank and use in a later spray mix.

### Never dispose of pesticides or pesticide containers near a water source, over shallow water tables, in sink-holes or in not wells

- Excess pesticide concentrates can be given to another qualified user, safely stored until there is a hazardous waste collection day, or disposed of or through a hazardous waste transporter.

### Prevent spills

- In the event that there is a spill of the chemical, it should be contained and cleaned up immediately.

# Frequently Asked Questions



## ▶ ***What type of pesticides poison bees?***

Pesticides like Arsenicals, Penncap-M, Sevin and Parathion can kill bees including the queen bee within 30 days. Bees are essential for pollination so bee poisoning should be avoided.

## ▶ ***What are the common symptoms of bee poisoning?***

In bee poisoning, you will see large numbers of dead bees in front of hives. Few bees are seen around (if not weather-related). Bees in front of hives that appear sick and not able to fly. In a hive with healthy bees, after poisoning, you may experience a daily die-off of up to approximately 100 dead bees per day in a hive.

## ▶ ***How do I find out what pesticides a local farmer has been spraying?***

Keep records of all the pesticides used for at least 3 years. You can ask the farmer around you about the pesticides they have been using.

## ▶ ***What is the first thing you should do when exposed to Pesticides?***

If pesticide splashes on the skin, wash with a lot of water and remove contaminated clothes. Wash skin and hair thoroughly with soap and water. Later, wash the contaminated clothes thoroughly and separately from others.

## ▶ ***What is the PHI in pesticides?***

PHI (Pre-harvest Interval), is the number of days you have to wait after spraying chemicals before you can harvest the crop. It is also known as the Waiting Period. The PHI is usually indicated on the product labels. You can also seek advice from your local agrovet or input supplier.

Watch



Saturdays 1:30pm (English)

Sundays 1:30pm (Kiswahili)



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