

Brews for pest control

The best approach to good vegetable production is to prevent pest and disease attack rather than trying to cure it. For this you need to ensure a healthy soil and stable environment for plants to grow in. The main way in which this is done is to *promote diversity*.

- ♦ Work with nature and copy the natural ways in which plants grow. Insects and "weeds" are a part of nature. We can learn to encourage those insects and plants that help us in the garden. Ladybirds, praying mantis, lacewings, wasps, frogs, lizards and birds all eat the insect pests that harm our gardens. They are called predators. If you leave them in your garden, they will help you!
- ♦ It is also possible to mix vegetables with other plants- strong smelling plants that deter pests and attract predators In the picture below, nasturtiums and peppermint are planted with the vegetables



Figure 5: Strong smelling plants to grow with your vegetables

Pyrethrum and Feverfew: These plants belong to the *Chrysanthemum* family. They have small white flowers, which are also very decorative in the garden and contain

a poison for insects. They can be planted as borders along your beds, or dotted throughout your garden. You can buy seeds for these plants. Write to the following address:

Mahlathini Organics, PO Box 807, Richmond, 3780, KZN, South Africa.



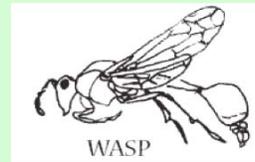
Marigolds (*Tagetes spp*): Can be used in have the added deterring worms that plants)



the same way. They advantage of nematodes (tiny attack the roots of

in the soil.

Fennel : Fennel is a great plant for attracting wasps. Wasps lay their eggs in caterpillars and can kill many of them in one day!



Wormwood (*Artemisia affra*) or Mhlonyane. These plants grow as large bushes and should be placed at the edges of your beds, or given their own space to grow. A tea made from the leaves is also a good medicine for fevers and colds.

Khakibos/senkthane and blackjacks: These weeds are useful to deter pests. Keep a few in the garden!

Herb and plant teas/brews

Many different plant mixtures can be used to control insects and diseases. These remedies should only be used if all the other methods fail. The main advantage of natural remedies is that they are cheap. They can be prepared at home.

General points for making plant sprays

- ♦ Soap (green bar soap only!) can be added to the



mixture to make the spray stick to the plants and insects. Do not use liquid soap or soap powder.

- ♦ The mixtures can be filtered through thin cloth to remove the bits of plant material. They can be applied using a home made brush from grass or twigs.
- ♦ These sprays act as contact poisons. So make sure you cover the insects or disease symptoms well.
- ♦ Some sprays can burn the plants if they are too strong. First test your spray on a few plants.
- ♦ The best time to spray against insects is in the late afternoon.
- ♦ The sprays are washed off in rain and have to be re-applied.

Figure 6: A listing of some plant brews; preparation and uses.

Aloe

Any kind of aloe can be used.

- Crush the leaves in water (1:5). This means use 5 times as much water as you use leaf material. Filter through a fine cloth and use as a spray.
- OR Dry the leaves and grind them into a powder. This can be dusted onto seeds and plants.

CONTROL:

- Insects in general; grasshoppers, aphids, caterpillars;
- Pests in stored grains such as maize, wheat and sorghum;
- Termites and ants.



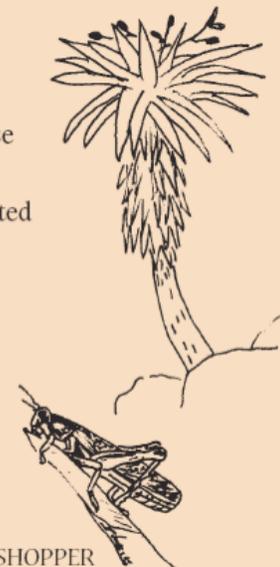
APHIDS



ANTS



TERMITE



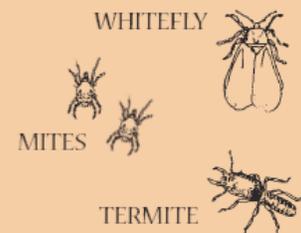
GRASSHOPPER

Blackjack

Cover a cupful of seeds with water and boil for 10 minutes, or let it stand overnight. Add 1 litre of soapy water and spray.

CONTROL:

Insects in general; aphids, ants, beetles, caterpillars, cutworms, mites, termites and whitefly.



WHITEFLY

MITES

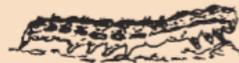
TERMITE

Chilli

- Chop up one cupful of hot red chillies. (Be really careful not to rub your eyes!)
- Add 2 litres of water.
- Either leave this to stand in the water for 2-3 days or boil for 15 minutes.
- Add half a cup of soap shavings and mix until this has dissolved.
- Filter the solution to remove the pieces of chilli.
- During dry weather, apply once a week.



CONTROL:
Caterpillars, aphids
and ants.



CATERPILLAR



APHIDS



ANTS

This
mixture can
burn the leaves
of plants if it is
too strong!



Garlic and onion

Crush 3 big bulbs of garlic (or 1-2 onions) and soak them in 2 spoons of cooking oil or paraffin for 2 days. Filter and mix with 1 litre of soapy water. Dilute this mixture 1:10 with water and use as a spray.

CONTROL:

Insects in general: aphids, mites, wireworms, termites and ants.
Diseases such as leafspot, blight and damping off. Examples are bean rust and tomato blight.



APHIDS



MITES



ANTS



TERMITE



Marigolds

Use the whole plant. Take 2-4 plants and crush the leaves, roots and flowers. Pour on 1 litre of boiling water and soak for one day. Then add 1 litre of cold soapy water and spray this on your plants. The coarse plant materials remaining behind can be used as a mulch around your plants.

CONTROL:

Insects in general: ants, aphids, beetles, stalk borer.
Disease in general: leafspot and blight (early blight and late blight).

Sometimes, when an infestation is really bad, some of the above poisons do not act fast enough, as some of their action is primarily as a deterrent and anti-feedant. It is then possible to use the following remedy. It is not recommended that tobacco is used regularly. It is VERY poisonous, also to people. It also kills all insects, including bees and other garden friends



Tobacco

WARNING: Tobacco is very poisonous to all insects and to people. Be very careful with these preparations.

- Take 2 handfuls of dry leaves or cigarette ends. This is the same as one cup full.
- Add 5 litres of water and boil for 30 minutes. Filter. Then add soap, mix and let your remedy cool. Apply once a week.

CONTROL:
Cutworms, caterpillars, aphids, flies and weevils.



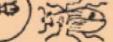
CUTWORM



APHIDS



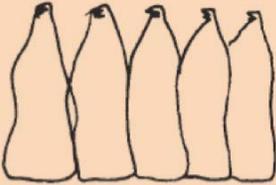
Larva



BEAN AND MAIZE WEAVILS



1 CUP CIGARETTE ENDS



5 LITRES OF WATER



BOIL FOR 30 MINUTES



Poison



Green soap

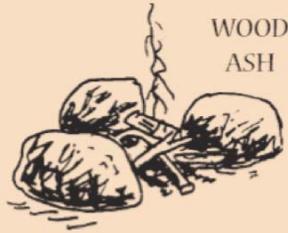
STRAIN AND ADD SOAP

Organic remedies

These remedies are made from organic materials, not from plants. Some examples are given below.

Wood ash

- Mix one heaped spoon of wood ash in 1 litre of soapy water. Leave it overnight. Spray against insects in general
- Mix one heaped spoon of wood ash in 1 litre of soapy water. Mix in one cup of sour milk and add 3 litres of water.



WOOD
ASH

CONTROL: Mildew on plants and most insects.

- Spread the wood ash in a circle around the base of your plants and water it into the soil a bit.

CONTROL: Snails, slugs and cutworms

Greyish-white mould



Yellow spots and dead tissue



POWDERY MILDEW:
Fine, white floury powder
mostly on the upper
surface

Flour

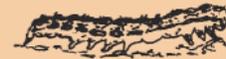
Mix one big spoon of flour into 1 litre of water. Brush this on the underside of leaves where mites and aphids are. Apply in the morning of a sunny day.



APHIDS

MITES

CONTROL:
Spider mites, caterpillars and aphids.



CATERPILLAR

Milk

Spray a mixture of 1 litre of milk and 10 litres of water to control spider mites and diseases such as mildew on pumpkins, blight on tomatoes and potatoes and mosaic virus on peppers. Do this every 10 days.

Advantages and disadvantages of pest and disease control brews

<i>ADVANTAGES</i>	<i>DISADVANTAGES</i>
These brews are easy to prepare at home.	These brews can be ineffective in an environment with a high pest or disease load
They are cheap	Tobacco brews are effective in almost all cases, but are also quite toxic.
They are generally non-toxic to humans and not very toxic in the environment; as they are mostly contact poisons or anti-feedants	You need to know which pests and diseases are attacking your plants. If you do not, we generally recommend the chilli or garlic/onion spray as a general initial remedy.
They can be very effective in controlling outbreaks of pest and diseases.	Preparing and applying the brews takes some time