



What is Liquid Manure ?



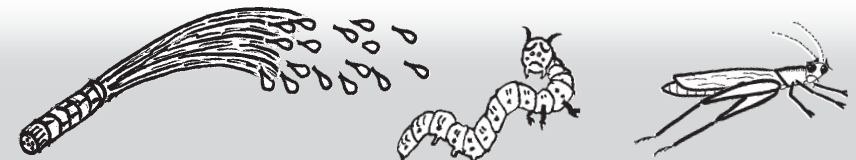
The Farmers' Handbook - "Near The House 1", Chapter 10 - Liquid Manure

Nowadays, the use of poisonous chemicals to control pests and diseases on crops is very common. These chemicals don't only kill pests, they can harm us as well. To protect us and the environment from this harm, we can use locally available herbs for pest control instead. This doesn't cost anything, we just need to learn the method.

In this chapter, liquids made from local herbs are called *liquid manures*. Liquid manure can work as a pest control, and also provides nutrients for the plants.



Janga Bahadur sprays liquid manure



Why make Liquid Manure ?

Why use liquid manure ?

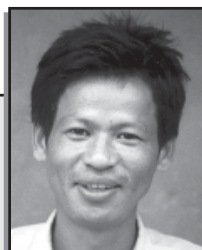
- to protect crops
- to prevent pests and diseases
- to avoid using harmful, manufactured chemicals
- to provide nutrients
- to provide irrigation

The benefits of this

- uses local resources
- saves cost
- protects beneficial insects
- uses local knowledge
- protects the environment
- helps us to be self reliant
- improves the soil
- saves our health by reducing use of harmful chemicals.



This says "Medicine for pests made from local aromatic plants".



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How to make Liquid Manure ?

The elements listed below are all useful for making liquid manure. Out of these, some are good for pest control *and* soil fertility, but some work just to provide fertility and are not pest medicines. You can use many more plants and local substances, according to what's available in your area.



local resource	quality	function
neem	bitter	medicine + nutrients
wormwood	bitter	medicine + nutrients
garlic	smell	medicine + nutrients
<i>Adhatoda vasica</i>	bitter	medicine + nutrients
<i>Wrightia arborea</i>	poisonous	medicine + nutrients
Persian lilac	bitter	medicine + nutrients
<i>Artemisia indica</i>	bitter + smell	medicine + nutrients
marigold	smell	medicine + nutrients
chilli	hot	medicine + nutrients
<i>Xanthoxylum</i>	hot	medicine + nutrients
nettle	fertile	medicine + nutrients
lemon grass	scent	nutrients
morning glory	fertile	nutrients
papaya	fertile	nutrients
comfrey	fertile	nutrients

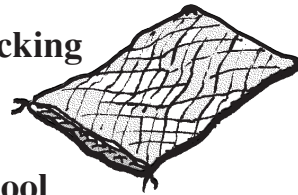
Materials Needed to make Liquid Manure

Various plants, fresh cow dung, ash



For more information on these ingredients see pages 5, 6 & 7

jute sacking



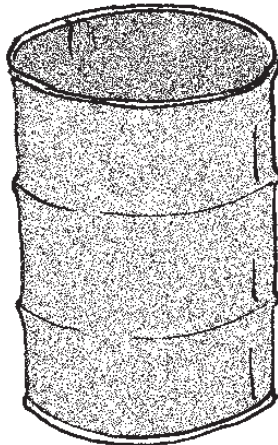
cutting tool



water



large container or drum



How to make it

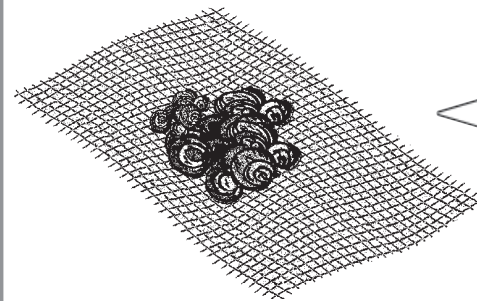
- Collect as many plants as you need, or will fit in the container available.
- Cut the plants into small pieces and fill the container. Add water to fill up to the top.
- Add ash, and the cow dung wrapped in a sack. This helps to produce micro-organisms.

- When the mix starts to smell, it is ready to use
- When the weather is hot, the preparation will be ready in 5 days, or in 2-3 weeks if it is colder.

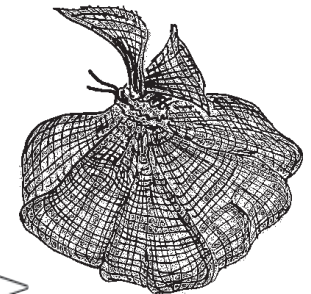
This is how to cut the plants into small pieces



Put the ash and cow dung on a piece of cloth or sack



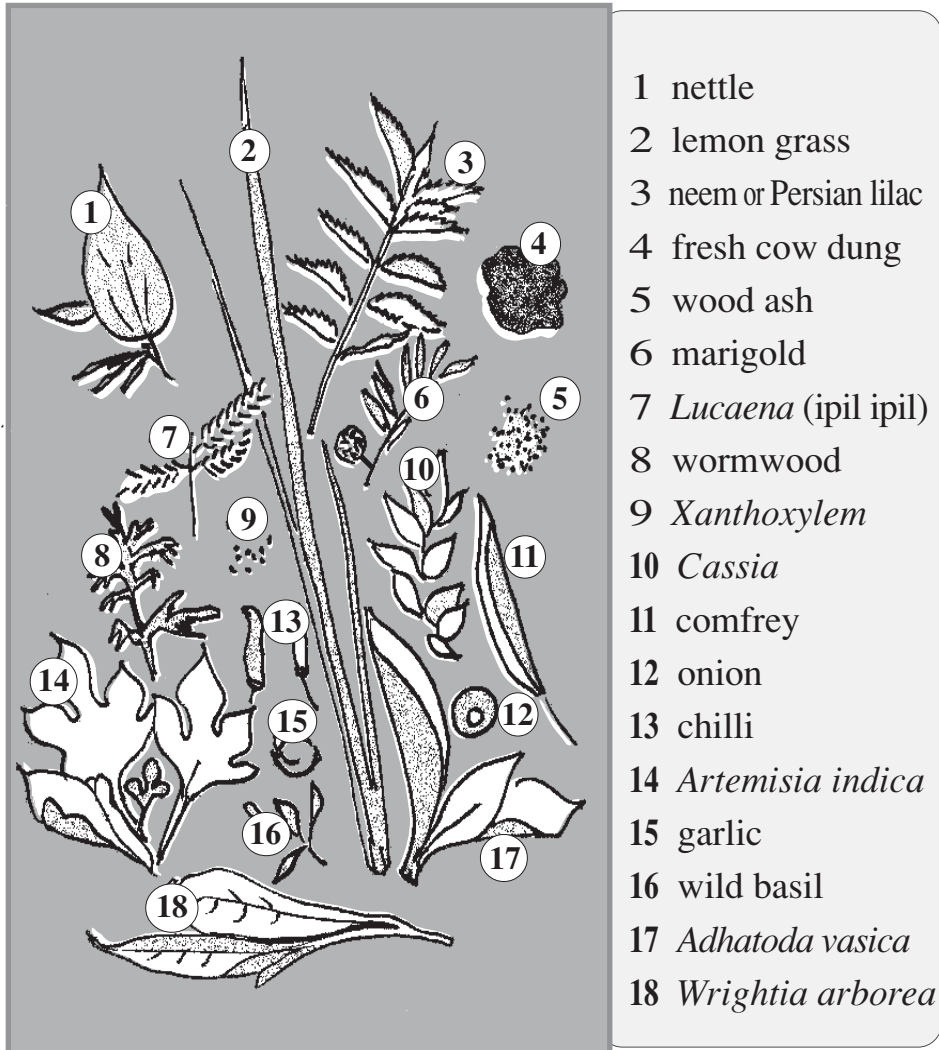
Tie the cloth up with string and suspend in the container with the water and other materials



Ingredients to make Liquid Manure

On the opposite page is a photo of some ingredients which can be used to make liquid manure.

Below is a copy of that photo with numbers to identify the different ingredients



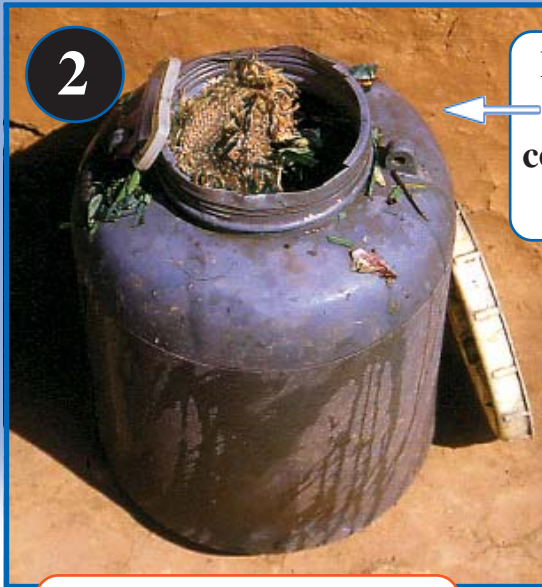
- 1 nettle
- 2 lemon grass
- 3 neem or Persian lilac
- 4 fresh cow dung
- 5 wood ash
- 6 marigold
- 7 *Lucaena* (ipil ipil)
- 8 wormwood
- 9 *Xanthoxylem*
- 10 *Cassia*
- 11 comfrey
- 12 onion
- 13 chilli
- 14 *Artemisia indica*
- 15 garlic
- 16 wild basil
- 17 *Adhatoda vasica*
- 18 *Wrightia arborea*

Let's See

How to make Liquid Manure

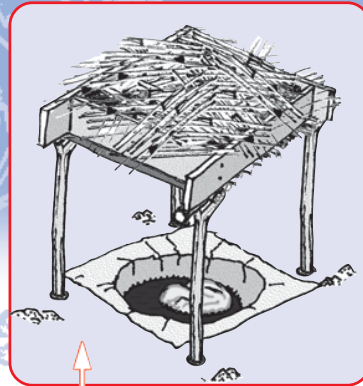


Ingredients to make liquid manure. Are these resources local, or do they need to be purchased from overseas ??



2

Liquid manure made in a plastic drum. The sack containing cow dung can be seen at the top.



An air nursery can also be made above the liquid manure.

An easier way - line a pit with plastic and make the liquid manure in this. A small thatch can be made to give shade.



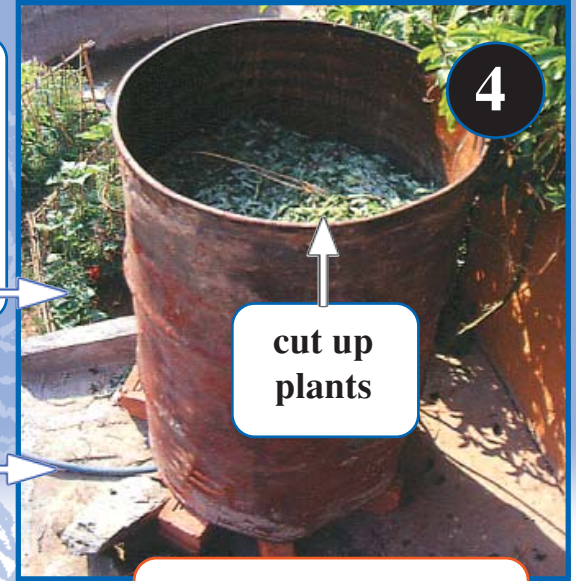
3

Enough liquid manure for 10-15 households can be made in one big drum.

Pipe which drains the liquid from the drum into a bucket below.

Pour one part of prepared liquid manure into a bucket.

5

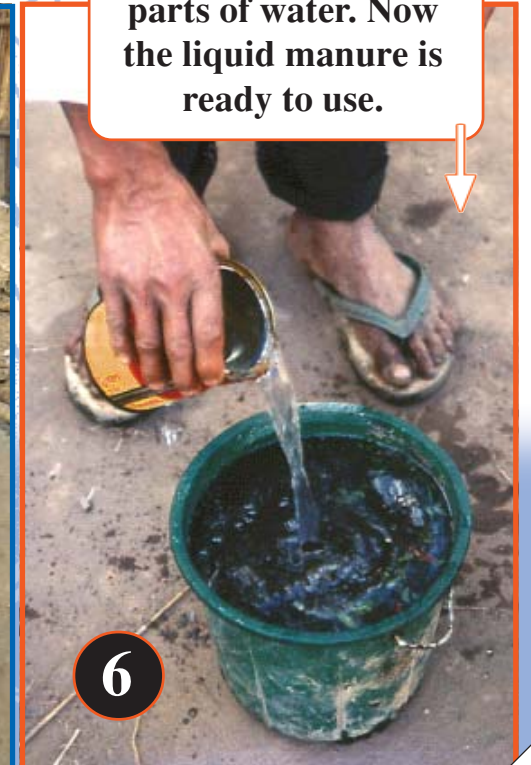


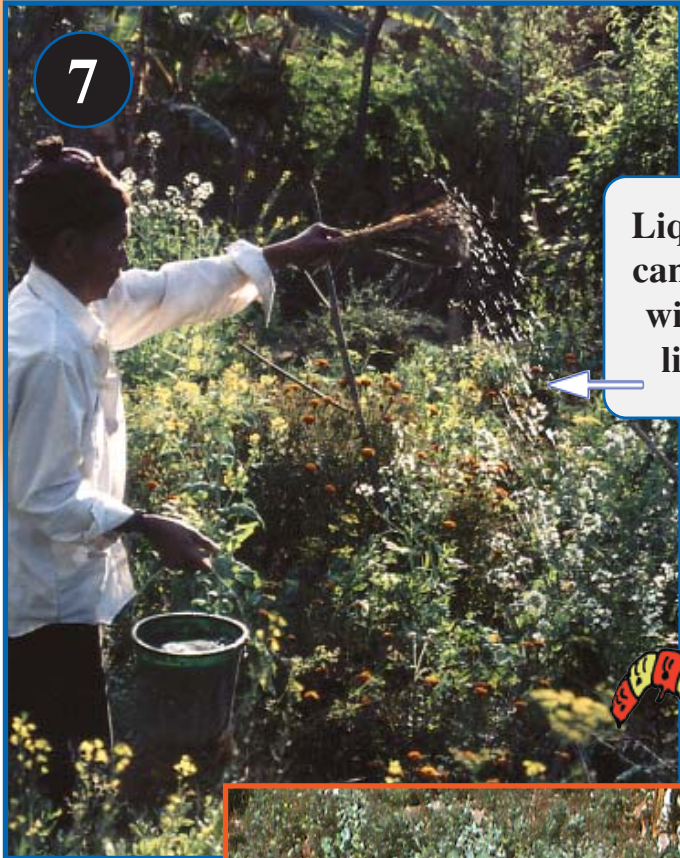
4

cut up plants

Then mix 5 to 12 parts of water. Now the liquid manure is ready to use.

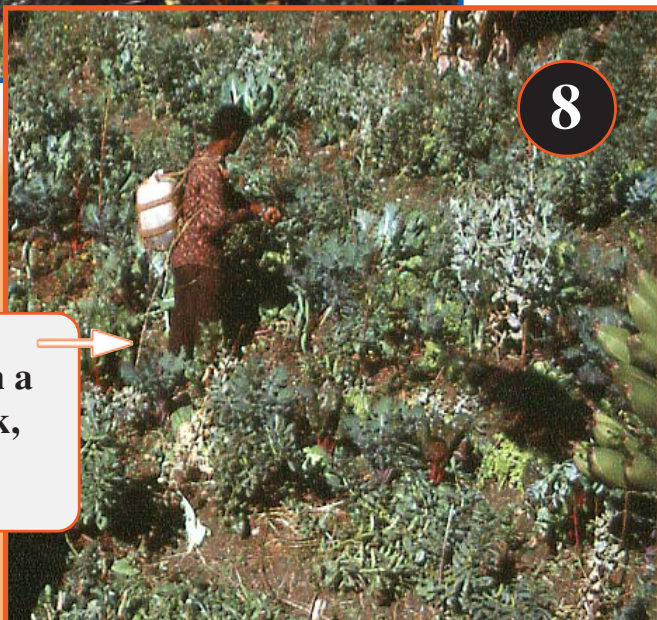
6





7

Liquid manure can be sprayed with a broom like this



8

..... or from a spray tank, like this



Maintenance

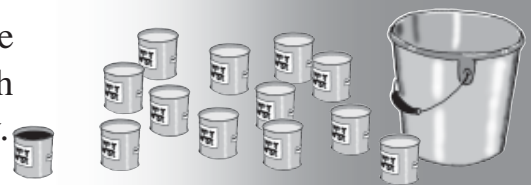
How to use Liquid Manure

Using Liquid Manure

1. How to use on young plants

Newly made liquid manure is very strong so it needs diluting with more water. When the liquid is used up, water is added again to the biomass in the container, which becomes less strong each time water is added.

- The first time, mix one part liquid manure with 12 parts water to spray.



- The second time, mix one part liquid with 8 parts water to spray.



- The third time, mix one part liquid with 4 parts water to spray.



- The fourth time, mix one part liquid with 1 part water to spray.



2. Using liquid manure on older plants

When they are bigger and more mature, plants can stand stronger liquid manure. Insects are often stronger as well. Liquid manure helps to repel these insects. Plants can take in nutrients from liquid manures through their leaves. On the soil, liquid manure also acts as irrigation.

- The first time, mix one part liquid with 8 parts water to spray.



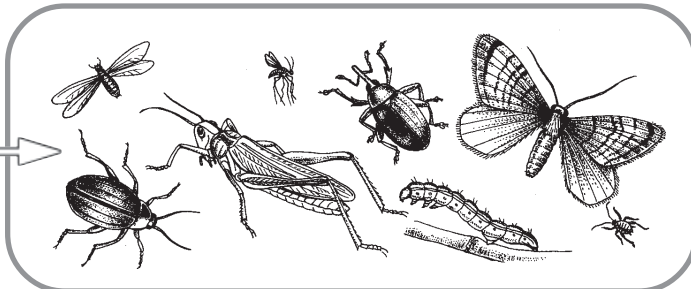
- The second time, mix one part liquid with 4 parts water to spray.



- The third time, mix one part liquid with 1 part water to spray.



Harmful insects

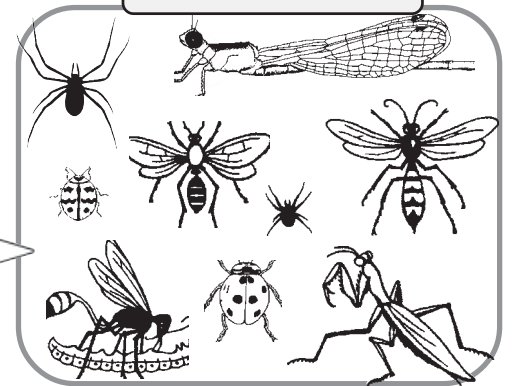


When to spray liquid manure

Mix in a suitable container according to 1. and 2. above and spray the liquid manure. Spray whenever pests are present, or before they are expected to arrive. Our objective is to repel, not to kill. The pests may come again, so liquid manure needs to be re-applied from time to time. Pests are repelled because of the various smells and tastes. And the plants get some food as well as water.

Don't use liquid manure when there are useful insects present otherwise they may be harmed.

Beneficial insects



Time to eat

Vegetables, fruits, etc. can be eaten at any time, but you need to wash them well in water.

Do your own research

There are many plants which are useful for making liquid manure. Farmers can experiment and find out by trying themselves. Plants that are soft and rot quickly, and make good mulch can be good for making liquid manure. Plants which are bitter and aromatic or smell, or are not eaten by livestock may be good to make liquid manure for repelling pests.

Farmers' Experience

Mrs Durgi Gharti

From Nepal, Surkhet district, Gumi - 5, Ratadada village, and a member of "Protect the Forest" women's group, Mrs Durgi Gharti has made and used liquid manure. Now let's hear about her experience.



Mrs Durgi Gharti

“ I learned how to make liquid manure from the homestead programme (JPP). It's been very useful for me. Various types of local species are used, such as wormwood, neem, *Adhatoda vasica*, etc., which are cut up small and put in a container with cow dung and water. After 5 days it's diluted with water and sprayed on the plants with a broom. You can use it on greens in the kitchen garden. We had a greenfly attack, so I sprayed the plants, and they never came back ! Liquid manure is easy to use, making it is light work, and it doesn't cost anything. It's easy to learn about, and also easy to teach others. I made it last year, and again this year, and I'll continue to make it and show others how. ”



Read On !



Subjects Related to Liquid Manure

Good benefits can be had from the information in this book about making and using liquid manure. However, this information is also linked to other methods. For extra benefits let's read, learn and practice from other related chapters.

Integrated Pest Management chapter



Liquid Manure chapter



Five chapters on how to make various Nurseries



Kitchen Garden and Mixed Vegetable Growing chapters



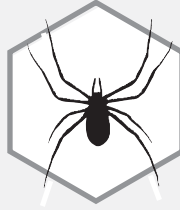
Compost chapter





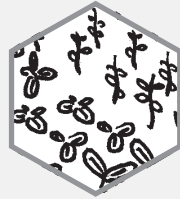
Integrated Pest Management chapter

There are many types of pest and disease which affect farm crops. In this chapter information is given about preventing these problems using local resources.



Five chapters on how to make various Nurseries

Different types of plants need different types of management to grow them, but all will benefit from using liquid manures . Information on how to build and manage the home nursery, fruit nursery, air nursery, hot bed and leaf pots is given in these chapters.



Kitchen Garden and Mixed Vegetable Growing chapters

How to make and manage a home vegetable garden for permanence, ease and simplicity ? Information on doing less work for more production while also being able to produce a wide range of fresh vegetables is given in these chapters.



Compost chapter

As well as liquid manure, animal compost is also useful for plant food, but needs to be produced in a well-managed way. Information is given in this chapter about fast and good quality compost production.

