

Garden trials using urine as a plant food
Some practical methods



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The value of urine!

Urine is rich in nitrogen (increases plant growth) and also contains useful quantities of phosphorus (helps root growth) and potassium (helps fruiting). Urine is ideal for speeding up the growth of many useful plants which include: Rape, spinach, covo, cabbage, tomato, and onion. Also maize. And also trees like mulberry, gum and banana.



Urine is a valuable material if you grow your own crops. But people must be convinced of its value

A good start in convincing people is to perform simple trials in the homestead or in the school garden to show the effects. People want to see practical results

That methods can be used to achieved these goals?



Collecting the urine



Urine can be collected in bottles, eco - lilies (container and funnel) for boys and men, potties for girls and women and in urine diverting pedestals or squat plates. Also from the boys school urinal!

Simple plants trials can be performed in:

1. 10 litre basins or buckets



2. Small round gardens (ring beam gardens)



3. Sections of existing or new vegetable gardens



How to make simple trials in basins or buckets

You will need:

- 1. Two 10 litres buckets or basins*
- 2. Plant seedlings*
- 3. Urine and water*
- 4. measuring devices*
- 5. Urine dispenser : small watering can or bucket*



Stage one

Fill each bucket or basin with the selected soil. This can be garden topsoil, or the soil in the backyard which needs more nutrients. Plant the selected type of seedlings in two buckets or basins. About the same in each. Water and let the seedlings establish for a week before applying the urine.



In this case Tsunga have been planted

Stage two – Start urine application

In the case of 10 litre basins or buckets add 400mls of water and urine diluted at 3 parts water to one part urine. That is 100mls urine to 300mls water using the measuring devices. If several basins or buckets are to be treated the 3:1 mix can be made up in a larger volume. This diluted urine can be added three times a week – Mondays, Wednesdays and Fridays.



400mls of urine added to each treated bucket or basin.

Stage three – cropping

After a month or two of treatment a large difference will be noted between the plants treated with diluted urine and those treated with water only as the following photos show.



Cabbage and Spinach after two months treatment.

ONION



Onion at an earlier stage and at cropping.

SPINACH and RAPE

In this photo the combined production of 8 basins of urine treated spinach and 8 basins water treated spinach led to a 3.4 increase in weight. 3 basins of urine treated rape produced 5X the weight of water treated rape.



Spinach and rape respond very well to urine treatment .

MAIZE

Maize is never grown in buckets, but the effect of urine can be well shown in buckets as these photos show.



The amount of growth is proportional to the amount of urine fed to the plant.

*Applying diluted urine to valuable trees
mulberry and gum*

*125mls of diluted urine (1:1) followed by 400mls water
once a week can have a significant effect.*



Experiments in Ring beam gardens

The ring beam garden is a miniature garden surrounded by bricks. The bricks can be laid on existing topsoil, or the soil inside the ring beam can be dug out and replaced with other selected soils. The diameter is about one metre.



The ring beam garden can be planted with a single type of vegetable or a combination of vegetables, as in the right photo where cabbage, tomato and garlic have been planted.

Urine treatment of ring beam garden

The ring beam garden can accept more diluted urine than the 10 litre basin or bucket. A successful dose is about 3 litres of diluted urine (3:1) three times a week. This can be made up by diluting 800mls of urine (2 X 400mls) with 2400mls (6 X 400mls) water in a small watering can or small bucket. This is applied to the soil surrounding the plants after the first week after planting the seedlings. The ring beam can accept at least 3 doses a week interspersed with normal watering.



Spinach planted on poor soil and treated with water (left) and diluted urine (right) over the course of a month. The increase in weight was 7 times.

Urine treatment of Covo in ring beam garden



Covo were planted in poor soil within 2 ring beam gardens. The increase in production of the urine treated covo was five times that of the water fed covo.

Production in ring beam garden



***This single ring beam produced 26 kg of spinach in a year
when fed with diluted urine.***

Using ring beam gardens at the school

After a month the influence of urine treatment was clearly visible. Amount applied XXX. Rape yield increased 7X, and spinach 4 X. Increase in maize size was very obvious.

Upper photos untreated, lower photos urine treated.



Plant, water, apply urine, crop and measure and eat!



Experiments in vegetable beds - RAPE

Most trials will take place in sections of established vegetable garden in practice.



3 litres of diluted urine (3:1) was added with a small watering can to the treated area, three times a week. This led to considerable growth of rape in the established section of vegetable garden. After 4.5 weeks the average weight of plants had increased by over four times.

Experiments in vegetable beds - TSUNGA



***Growth of tsunga in established section of vegetable garden.
After 4.5 weeks the average weight of plants had increased
by 3.6 times.***

Experiments in school vegetable beds - Spinach



Huge effect of urine application on spinach in beds in the school garden . Plants on right treated with commercial fertiliser!

NO NEED TO MEASURE!!!

Experiments in vegetable beds - TSUNGA



***Growth of tsunga in established section of vegetable garden.
After 4.5 weeks the average weight of plants had increased
by 3.6 times.***

What is important is:

- 1. That there is confidence that the recycling method will work in practice.*
- 2. That the increase in production can be seen to be effective*
- 3. That the increase in production is worth the effort.*
- 4. That food grown with the help of urine tastes good and is safe.*

How to begin:

Rape and spinach are good plants to start off with since they respond well to urine and the reaction is quite fast. The effect of urine on the leaves will take about a week in most green vegetables.

The urine nitrogen cannot be used directly by plants and must be converted in the soil by bacteria into a form of nitrogen (nitrate) that can be used by plants.

Where the trials take place on existing vegetable gardens there may be much variation in the type of soil present, even within a single bed. So the result will depend on the nature of the soil as well as the effect of urine.

*Now go
and try!*

The recycling of human excreta in a safe and acceptable way forms part of the Schools Ecological Sanitation Programme.

Excreta in the form of urine or well processed toilet compost can increase the production of valuable food plants considerably.

But there is always reservation about using the method, even if commercial fertilizer is scarce.



*Many valuable food plants can yield
far more with urine treatment*

*What is important is to show people
so they can see with their own eyes!*

In other words:

SEEING IS BELIEVING!!!

Experiments in basins and buckets are ideal to start because it is possible to select the soil and place this into two basins or buckets and then treat one with urine and one without.

Then the effect of urine treatment can be revealed in a few weeks.

This is a good start to convince people.

1. Two 10 litres buckets or basins

(buckets should have holes drilled in the bottom. Basins can be plastic or concrete with holes drilled in the bottom.)

2. Plant seedlings

(These can be rape, covo, spinach, cabbage, tomato, onion and many others)



3. Urine and water

Urine can be collected in bottles (boys and men), potties (girls and women) and in urine diverting pedestals or squat plates.



4. measuring devices

These can be made of pill bottles (100mls) or plastic jam jars (400mls).



5. Urine dispenser

Small watering can or bucket



Tomato

Tomato's require more than extra treatment of urine alone, as this contains far more nitrogen than potassium. Potassium is required for good fruiting. This can be supplied by feeding with comfrey liquid feed.

In this case the young tomato were watered first, then treated with 400mls of 3:1, three times a week. After the first flowers appeared a liquid food made from comfrey was also added to supply extra potassium.