Ever tried fertilising with pee?

How to use urine to fertilise plants

» *Option 1: when watering plants*

Urine needs to be diluted before use. Some plants like stronger concentrations than others. A dilution rate of 1:8 is good for general use, but 1:3 has been used on plants that really like nitrogen, such as corn, cabbages and rhubarb.

1:8 dilution means topping up the average 300ml pee with 2.4l water, making around 2.7l.

Work the diluted solution into the soil around the roots. This helps soil bacteria break down the urea (the nitrogen-containing part of urine) into a plant-useable form.

» *Option 2: directly to a compost heap*

Urine can be added to a garden waste compost heap without dilution. This helps the woody parts (carbon) decompose more quickly.

Food scraps and green garden waste also add nitrogen to compost heaps, so don't add too much urine to these types of compost heaps, or mix in carbon-rich matter such as straw, ash, cardboard or even sugar.

Plants that probably like pee

» Leafy greens such as spinach, chard, kale, cabbage, sprouts
» Asparagus, fennel, rhubarb, leeks, broccoli
» Corn, grasses and grains
» Squash, cucumbers, tomatoes
» Fruit trees and bushes

Plants that might not like pee

» Carrots, radishes and other root veg (unless you want lots of tops)
» Peas, broad beans (create their own nitrogen)

But some sources say they do well! So try it out.

Tips

» For tender plants, seedlings and containers that don't drain into the ground, pee should be extra-diluted at 1:20-50. Urine can have a higher salt content than commercial fertilisers, and in pots this can build up over time.
» Urine is potent! It contains 9.3g urea per litre, so as a fertiliser that's around 4.3% nitrogen content. By comparison, blood meal is 12% nitrogen and animal manure is 0.6% nitrogen.
» Don't stop using your usual compost. This will provide essential organic matter which helps keeps soil micro-organisms healthy. Think of urine as a nutrient supplement - we still need to eat!
» Think of feeding the soil, not feeding the plants. A healthy soil is great for healthy plants.
» Undiluted urine is usually too strong and can damage plants - use this to your advantage to kill young weeds.
» Avoid splashing leaves if you're going to eat them!

Quick facts

» Pee is particularly rich in nitrogen, which plants need to grow healthy leaves. It also contains phosphorus and potassium.
» Applying urine to growing produce can more than double the yield.
» 'Nightsoil' - human waste - has historically been used as fertiliser by all agricultural societies before the invention of fertiliser in the early 20th century and continues today in many countries (both developing and developed).
» The average person's pee has an acidity 6 but can vary from 4.5 to 9 depending on diet.
» Blood meal fertiliser has an NPK ratio of 13:2:1 and costs £30/25kg
» Urine has an NPK ratio of 11:1:2.5 and costs £0

Why use urine as a fertiliser?

Urine is an abundant natural source of nitrogen that we need to grow crops. However, most industrial fertilisers are made using fossil fuels to produce ammonia.

Some studies estimate that the urine produced by one person in a year could provide 50-100% of the fertiliser requirements for growing another person's food.

Toilets in the UK use between 5-10 litres of drinking water per flush. Given the average person wees 5 times daily, that means in Britain we're using around 2.5 billion litres of water to flush the toilet – about 100 Olympic-sized swimming pools, every single day! In London alone, that number is 300 million litres.

This water then has to be treated and returned to the environment. Sometimes wastewater isn't completely treated on leaving the system, resulting in algal blooms or pollution in waterways.

By contrast, using diluted pee as fertiliser uses a fraction of the water and enriches soils, while integrating our bodies into part of the natural ecosystem.

Let us know how your garden is growing! Please take lots of pics and send them and any questions to: amanda@placesandthings.org.uk

FAQs

How often to fertilise?

Some people use urine fertiliser up to twice a week, others only twice a month. It depends on the plant and on lots of other factors like rainfall and how well your soil drains. It's up to you to try out and see what works.

Signs of nitrogen deficiency include yellow or pale green leaves.

Signs of nitrogen excess can include over-producing leaves (at the expense of fruit and flowers) and curled leaves.

Will it smell?

Fresh, healthy pee doesn't smell. After around a day the urea breaks down into ammonia which can escape as a smelly gas. This is why we work it into the soil, where bacteria will help break down the urea into nitrates rather than ammonia.

Is it dirty?

Fresh urine contains no dangerous microbes (unless you have a urinary tract infection) and we know exactly where it's come from! By comparison, manure is more likely to spread pathogens around the garden. Urine also has a higher nutrient content than manure.

If you have an infection or are taking prescription medications such as antibiotics or cancer treatment, avoid using your urine on edible produce. It can still be used on lawns and ornamental plants. In fact, topsoil micro-organisms are likely to do a better job at breaking drugs down than wastewater treatment plants.

Some sources suggest leaving edible plants for a short period - 2-4 weeks - before consuming, especially root veg or veg that grows on the ground. Otherwise, thorough washing will take care of any unwanted microbes.

In the past, urine was an essential ingredient for all sorts of processes including textile dyeing, curing leather and tobacco, washing laundry, breadmaking and cleaning wounds and insect bites. In various parts of the world, including Britain, it was even drunk during rituals like weddings!

More reading:

Fertilizing with human urine. Meghan Kelly, Growing Green International magazine, Summer 2012 *https://veganorganic.net/fertilizing-with-human-urine*

Liquid Gold: The Lore and Logic of Using Urine to Grow Plants. Carol Steinfield, EcoWaters Project.

A *Trellis* project with UCL

in collaboration with Dr. Tse-Hui Teh (Lecturer in Urban Design and Planning) and Dr. Lena Ciric (Senior Lecturer in Microbiology)

www.placesandthings.org.uk