ORIAZ Solar-Dripper

How to use urine in your garden
Presentation for the 2020 Rich Earth Virtual Summit

solar-dripper.com                         Robert Cossette, engineer, NRC Bio innovation, Annecy
Good news :-) 

Studies show urine can be a safe and efficient fertilizer.

SEI, WHO, FAO, Renaud De Looze, Rich Earth Institute, Fabien Esculier, Tristan Martin etc.
The solar-Dripper is tolerant to particle over 2mm in dia and also tolerant to biofilm

> no filtration is required

Conventional systems require filtration from .08 to .20 mm
Let’s do it with the Solar-Drippper!

Compared Watering zone with 400 ml

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© Robert Cossette, NRC bio innovation
Humid and oxygenated area.

The slow modulated watering rate varies from 0 to 200 ml/h = ultra low flow
intense flow rate according to the size of the bottle

3 L  2 L  1.5 L  1 L  1 L  500 mL  250 mL  200 mL

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Robert Cossette, engineer, NRC Bio innovation, Annecy
Installed in less than one minute

- Fill the bottle 3/4 with water.
- Screw the bioclimatic regulator
- Insert the cone next to the plant.
How to measure the urine dosage?

For example:
- 5% urine every 15 days
- 1% to 3% in continuous use
  recommended by Renaud De Looze
  up to 25% urine for occasionnal fertilisation.

1- Use a scale
2- Use a graduated container
3- Use a adjustable drench gun
Fair trade definition: Give to the plant the water, nitrogen and minerals it needs and it nourishes you with fruits and vegetables full of vitamins.

#solardripperchallenge
Test 25 % urine

#solardrippercalldoge
Mesures de températures

Test Urine
#solardripperrchallenge
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Deux semaines
Two weeks

3 semaines
3 Weeks

une semaine après
one week after
Video on French TV FR3 2019:
https://youtu.be/Lih-YCKqvcY
I presented this method with my cherry tomatoes to clients in Geneva and Lausanne in summer 2019. Many consumers were thrilled to taste them.
Last year on October 7th one tomato plant reached 4.42 meters (over 13 feet) outdoor.
World Water Week at Stockholm 2019

They tried tomatoes fertilized with urine and applied with the Solar-Dripper

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Des experts de l'eau gouttent à des tomates cerises fertilisées avec de l'urine humaine à Dijon.
Rencontres Nationales des acteurs de l'Assainissement non collectif.

Top Secret  Même pas peur !  Mission Possible

L'urine utilisée directement a été collectée à Annecy. Durant deux mois nous avons aussi utilisé le concentré AURIN fabriqué à Zurich.
A new Lasagna garden was made in April (Patricia Lanza method)
I used a layer of decomposed leaves (just 10 cm), no plowing, no weedkiller,
3 Sisters Milpa culture combining corn + bean + squash
https://solar-dripper.com/comment-cultiver-le-mais/

Création du jardin en lasagne le 29 avril

Semis 5 mai
**Application of fertilizing urine  May 30th**

120 ml of urine per bottle diluted in 800 ml of solution, i.e. 15% urine.

The irrigated area is 40 cm x 60 cm per bottle, i.e. 0.24 m². With an estimated nitrogen rate of 0.6% (ref: Renaud De Loose) this application represents approximately 3 grams of nitrogen equivalent per m². This operation can be carried out 6 times in the season not to exceed 20 g/m².
An article was published in a French newspaper with Renaud De Looze.
As a winter solution: use > 100 m² of trees surface per person for a daily spreading.


Put some V.I. Pee under the tree.

Solar-Dripper.com
The result was magnificent ... in full confinement (March 22th) it made some red flowers.
Future R&D on Biofilm: how useful are they? Can we control them?
The Symbio Collector ©

Compatible with soft drink bottle (and Aurin 500 ml bottle)

Low cost adaptor to collect pee. No contamination from feces.

Portable and individual.

Dishwasher safe.

Ongoing tests for optimisation.

Our current R&D on female collector
Conclusions:

- The Solar-Dripper is a tool to promote urine usage now.

- Open the public to future urine collection for food production or ornamental plants.

- This solution is available for home usage at low cost (2 – 7 $ per unit).

- Collection of clean urine is easy with a simple bottle for men and a simple SYMBIO adaptor for women.

- Tomato taste and growth are outstanding :-)
come visit us on solar-dripper.com

The Solar-Dripper can be shipped to USA and Canada from Annecy.
10 – 15 days average delivery.
Welcome to reseller inquiry
R&D specialist Welcome.
Bonus content: Pictures of the day
September 16th 2020 in Annecy, France
Small picture : June 17 Th
Large picture : September 16 Th

The Squash reaches 3 meter in this new lasagna garden
8.7 meter in the older garden with better soil preparation
Organise your Solar-Dripper watering zone
- 210 L water tank with a flexible tube (30 $)
- Adjustable Drench Gun for precise urine dosing (about 35 $)
  Example: 40ml in a 1L bottle filled to 800 ml to have a 5% urine mix.
- Simple buckets for transporting 1L urine bottles (free reused juice bottle)
- Two 6 bottles basket to transport 12 solar-dripper bottles at a time

With a well organized watering point, you can collect, fill and replace 12 bottles in 6 minutes.

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A squash arm in the garden is 8.7 meter long (> 26 feet).
A squash leaf reaches 36 cm
Test du Goutte-à-goutte solaire au Madagascar 2019