

ORIAZ Solar-Dripper

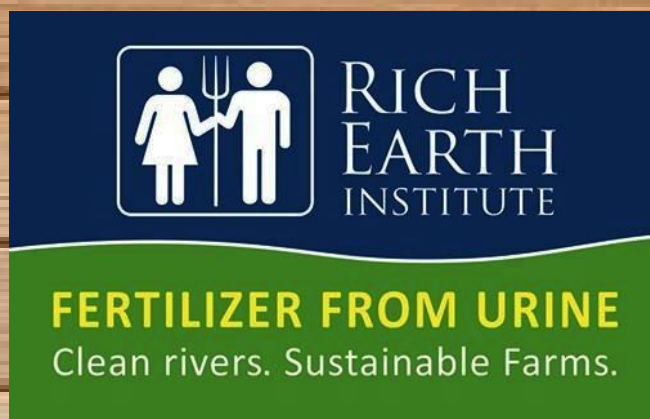
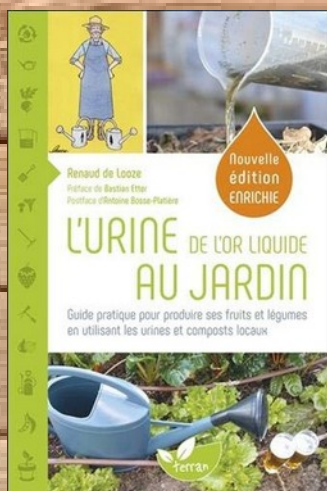
How to use urine in your garden
Presentation for the 2020 Rich Earth Virtual Summit



Good news :-)

Studies shows urine can be a safe and efficient fertilizer.

SEI, WHO, FAO, Renaud De Looze, Rich Earth Institute,
Fabien Esculier, Tristan Martin etc.



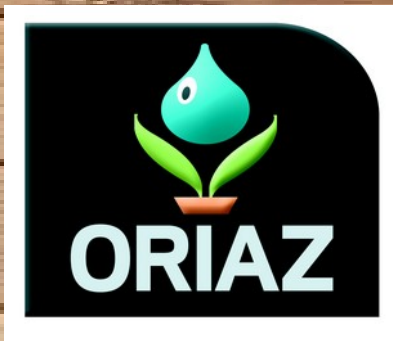
Good news #2



The solar-Dripper is tolerant to particle over 2mm in dia and also tolerant to biofilm

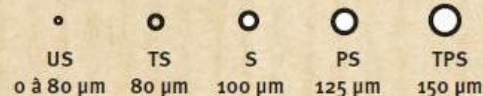
> no filtration is required

Conventional systems require filtration from .08 to .20 mm



Le système goutte-à-goutte breveté ORIAZ définit une nouvelle classe de résistance. UTC : Ultra TOLÉRANT au Colmatage avec une tolérance aux particules de 2 000 micromètres.

Les cercles suivants représentent la taille relative des particules tolérées par les goutteurs conventionnels.



CLASSE ORIAZ
2000 µm

LE RÉGULATEUR
ORIAZ A UNE SURFACE
DE PASSAGE
128 FOIS PLUS GRANDE

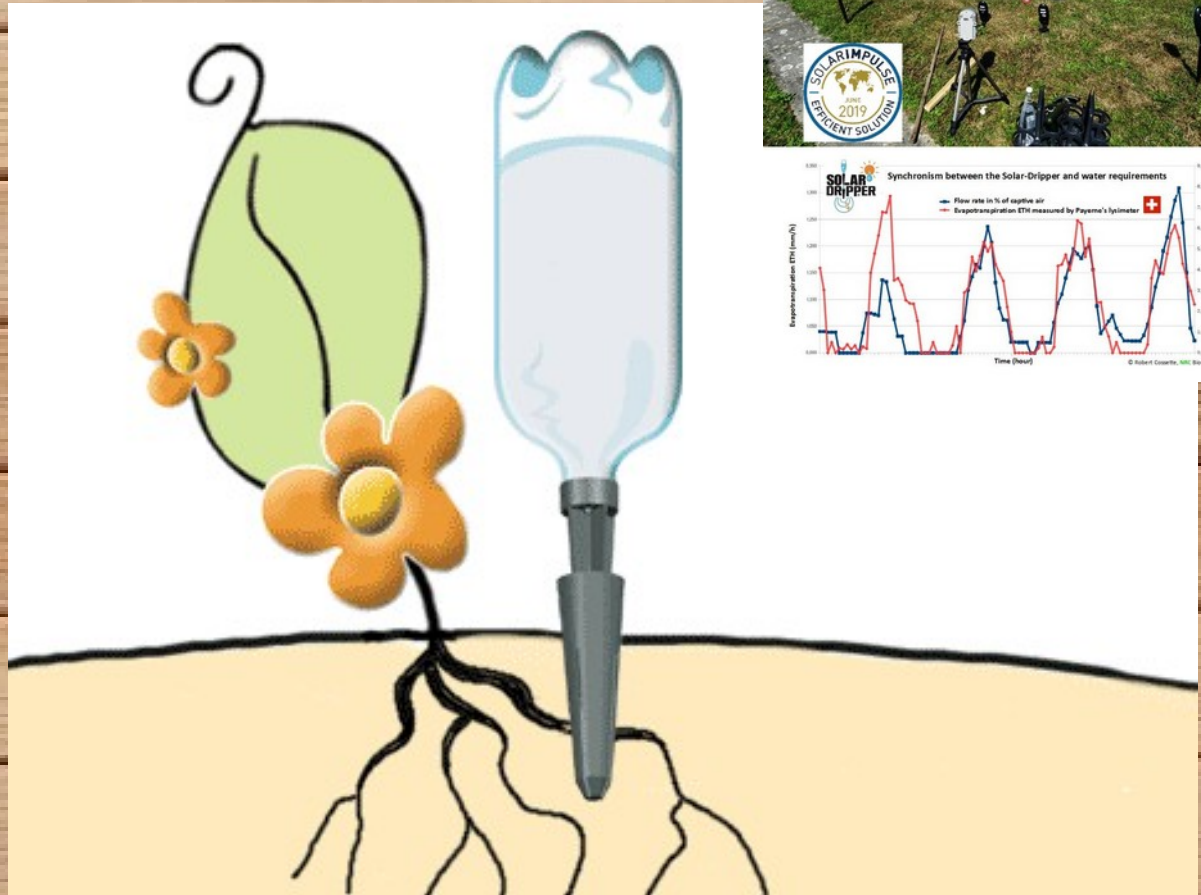
UTC
Ultra Tolérant
au Colmatage

Let's do it with the Solar-Dripper !



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



slow

Installed in less than one minute

Cone

**ORIAZ
Bioclimatic
regulator**



- 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.

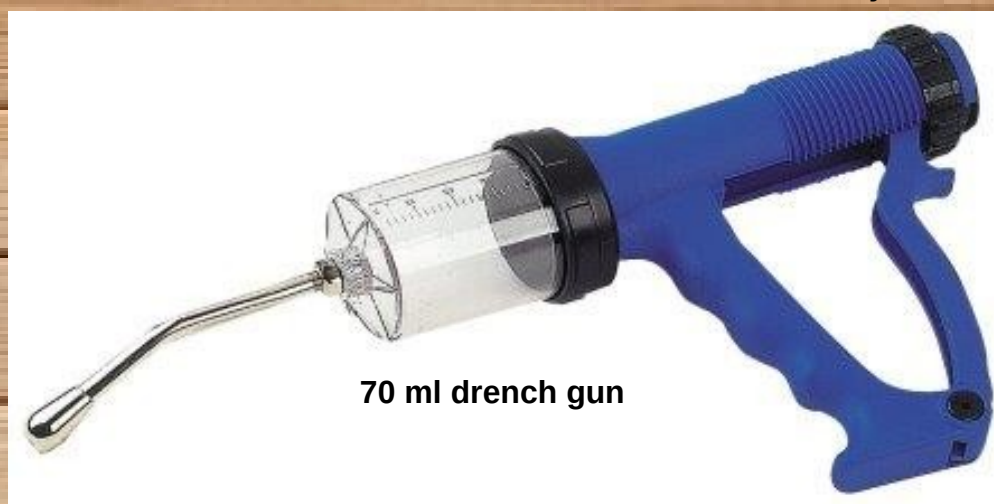
1- Use a scale

2- Use a graduated container

3- Use a adjustable drench gun



Adjustable screw



70 ml 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.*



#solarripperchallenge

Solar-dripper.com





25%



solar-dripper.com



test
25%

#solarripperchallenge

Après 6 jours
After 6 days

Solar-dripper.com

Test 25 % urine



#solarripperchallenge



Test Urine

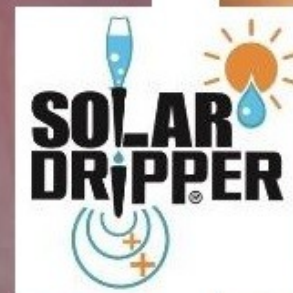
#solardripperchallenge

solar-dripper.com

une semaine après
one week after



Deux semaines
Two weeks



3 semaines
3 Weeks



solar-dripper.com



#solardripperchallenge
Annecy 13/11/2018



3 septembre 2019 solar-dripper.com

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.



Animation au magasin Migros Do-IT + Garden à Genève

20 juillet 2019

Les tomates cerises sont délicieuses !
... merci Migros !



Last year on October 7th one tomato plant reached 4,42 meters
(over 13 feet) outdoor.

4.42 m

7 octobre 2019
solar-dripper.com



World Water Week at Stockholm 2019

They tried tomatoes fertilized with urine and applied with the Solar-Dripper
solar-dripper.com



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

stand **RAE**

L'urine utilisée directement a été collectée à Annecy. Durant deux mois nous avons aussi utilisé le concentré AURIN fabriqué à Zurich



solar-dripper.com



A new Lasagna garden was made in April (Patricia Lanza method)
I used a layer of decomposed leafs (just 10 cm), no powing, 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



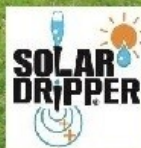
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Application of fertilizing urine May 30th

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 Looze) 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.

Lasagna garden, June 14th
two weeks after Symbiotic fertilizing





Jardin de Permaculture ORIAZ

Article dans le magazine Regain, Journal de Campagne
Numéro 9, été 2020 page 76 - 77

An article was published in a French newspaper with Renaud De Looze



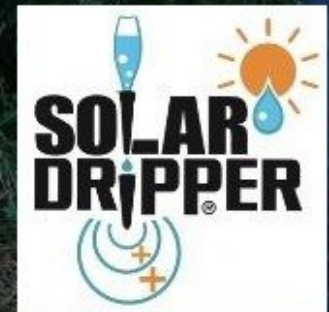
As a winter solution : use $> 100 \text{ m}^2$ of trees surface per person for a daily spreading.

<https://solar-dripper.com/comment-utiliser-urine-sous-les-arbres/> (French)



**Put some V.I. Pee
under the tree.**

Solar-Dripper.com



The result was magnificent ... in full confinement (March 22 th) it made some red flowers.

Floraison

Fertilisé avec de l'urine
depuis 6 mois

Photo 22 mars 2020



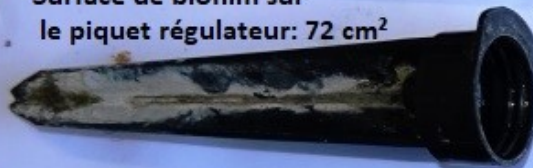
© R. Cossette NRB bio innovation



Future R&D on Biofilm : how usefull are they ? Can we control them ?



Surface de biofilm sur
le piquet régulateur: 72 cm²



Surface de biofilm sur le cône: 80 cm²



Grille de protection



Ajout possible de tubes de filtreurs

Surface de base 700 + 72 + 80 = 852 cm² pour les biofilms nitrifiants

Surface de biofilm dans la bouteille: 700 cm²



The **Symbio** Collector ©

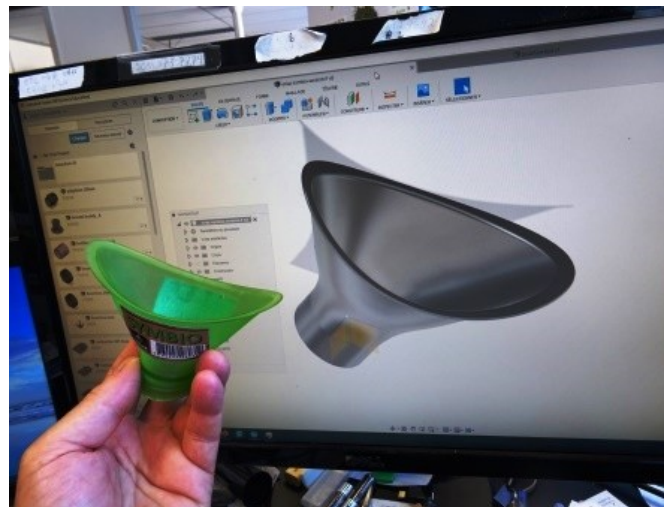
Compatible with soft drink bottle
(and Aurin 500 ml bottle)

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 16 th 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

17 Juin 2020 - oriaz.com



Solar-dripper.com

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 mixt.
- 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.



Solar-dripper.com

A squash arm in the garden is 8,7 meter long (> 26 feet).





A squash leaf reaches 36 cm



Solar-dripper.com

