

BIO



Self-irrigating vase

Practical and efficient,
vase that does not need
watering every day

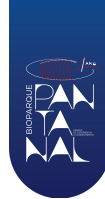
Spices that cure

Taste and health
to cultivate at
home

What are the agro-toxics?

Risks to the health
and environment





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SPICES THAT CURE

Medicinal plants to cultivate at home

Medicinal plants are sources of natural substances, which play an important role in the treatment of several diseases. They are used as medicines through teas, syrups, creams, etc. Some of them can be used as spices, and are easily cultivated in vegetable gardens or vases.

Rosemary

Used part: leaves.

Recommendations headache, blood poor circulation, memory impairment, respiratory disturbances, flu, fever, bruises, and arthritis.

Cautions: high doses can cause gastrointestinal irritation. Avoid consumption at night, because can impair sleep. It is contraindicated for pregnancy, seizure history, and gastroenteritis.



Turmeric or saffron

Used part: rhizome (underground stem).

Recommendations: digestion action, antibacterial, anti-microbiome, and anti-inflammatory.

Cautions: Not recommended to consumers with gallstones, obstruction of the bile ducts, gastrointestinal ulcers, and under anticoagulant treatment.

Mint

Used part: leaves.

Recommendations: improve digestion, treatment of intestinal parasites, and diarrhea caused by amoeba and giardia.

Cautions: Remember that there are many species popularly known as mint.



WHY PLANT FOODSTUFF IN SELF- IRRIGATING VASES?

They are practices, easy utilization and maintaining. Can be used in ornamentation of homes and offices.

They are excellent for people with busy routine and do not have time to take care their plants.

They are great for cultivating plants like spices and teas in small spaces on apartment balconies.

They can be used on shelves, sinks, hanging by a rope inside and outside areas, or in vertical gardens.

They prevent insect and mosquito proliferation as dengue disease transmitters, as the water is not exposed.

They are transparent and easy to see the water level and completing when needed.

HAND-ON

Let's make your self-irrigating vase?

You will need:

- plastic bottle 2 litres
- scissor
- rope
- nail
- hammer
- stones
- fertile soil
- seeds

01



Cut the bottle 12 cm from the base.

02



Ask for the help of an adult to hole the bottle lid.

03



Cut four (4) pieces of the rope 30 cm and join each one the 5 cm of the tip.

04



Pass the rope through the hole of the bottle lid and let the node inside the lid as in the image.

05



Put stones in the bottom of bottle and fill with soil. Be attention: arrange the rope according the image.

06



Put water in the second part of the bottle and fit in with your vase as suggested.

07



Now, you can sow the seeds and care the level of water in the bottom to not dry.

Always have a preference for foodstuffs produced without agro-toxics. Here is the tip.



How can water rise up by the rope?

Looks like magic but is the Science!

Water rises up by the rope due to the physical properties of cohesion and adhesion.

The water molecule is attracted by the molecules that form the rope, consequently, water moves rising up. this attraction between water molecules and molecules of other material is denominated **adhesion**.



The attraction between water molecules is called **cohesion**. In the self-irrigating vase, water present in the bottom of the bottle is attracted by cohesion.



The cohesion of the water molecules causes to form a thin "film" on the surface of the water, in which some animals "walk on water" or droplets of water remain stationary on leaves and other surfaces. This film is called surface tension (see photos).

VIVA for the Science.

Shall we test these properties?

Using two glasses and make a bridge with a paper towel. Put water in one of the glasses and wait to see what will happen.



AGRO-TOXICS

**Danger to the environment
and human health**



Agro-toxics are chemical substances used in farming to control or kill insects, mites, mollusks, rodents, fungi, weeds, and bacteria. The consumption of food contaminated with agro-toxic is hazardous to human health.



Agro-toxic application in agricultural areas is correlated with these substances circulation to other environments through the air, soil, and water (lakes, rivers, seas) not only restrict to applied local.



Agro-toxics become hazardous to human health because can bioaccumulate in plants and animals used in food and popular medicine, causing inflammatory and cancer diseases.

