International Rainwater Harvesting Alliance

Alianza Internacional para la Gestión del Agua de Lluvia *(IRHA)*
Alliance Internationale pour la Gestion de l'Eau de Pluie *(IRHA)*

bRAINstorming

NEWSLETTER N° 38 – MAY 2011

Our newsletter focuses on all activities concerning rainwater harvesting, the International Rainwater Harvesting Alliance (IRHA) and its partners.

This month's topic:
Drinking Rainwater

Editorial

Dear Rainwater Harvesters, Readers, IRHA Members and Friends,

In February of this year, Berkeley Springs held their annual International Water Tasting Awards, the largest water tasting competition in the world. Municipal waters compete for the 'Best Tasting Tap Water' award, along with 'Best Purified Drinking Water', 'Best Bottled Water' and 'Best Packaging'.

2011 was a particularly successful year for rainwater harvesting; with rainwater coming first and fifth in the best purified drinking water category and first in the people's choice packaging competition.

In first place in the 'Best Purified Drinking Water' category was SparkleTap (Texan Independence Water) from the USA, and Rainwater Management Solutions (Virginia Natural Water) from Charlottesville, USA, in fifth.

Tasmanian Rain, an Australian company that produces bottled rainwater, won first prize in the 'Best Packaging' category for its *"elegant tinted glass bottle"*.

The IRHA would like to congratulate the winners of Berkeley Springs Water Tasting Award, and we hope that this will increase awareness of the suitability of rainwater as a source of drinking water.

It is because of this success that we have decided to dedicate this edition of bRAINstorming to use of rainwater as a source of drinking water. 'Drinking Rainwater' is a large topic area, so we have decided to focus specifically on domestic rooftop harvesting and above-ground storage in industrialised countries.

We hope this newsletter encourages you to rethink the uses of rainwater.

Hannah Price
Editor

In this newsletter:

Where is rainwater drunk?

Is rainwater safe to drink?
Study by Monash University into the health affects of untreated rainwater

Checklist for drinking rainwater
How do you maintain the quality of your rainwater?

Berkeley International Water Tasting Awards
Articles from two of the winners of this competition

WATA, an effective solution for making rainwater drinkable
Article by Antenna Technologies

Disinfection of rainwater
An overview of some disinfection methods

Your Views
Feedback from Facebook and Twitter

Article in the Spotlight
Harvesting rainwater to save Bangalore by Marianne De Nazareth

IRHA News and Activities

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Let the rain kiss you.
Let the rain beat upon your head with silver liquid drops.
Let the rain sing you a lullaby.
Langston Hughes, *April Rain Song*

Where is rainwater drunk?

Although the use of rainwater is fairly widespread in industrialised countries, its usage is usually restricted to watering the garden, and in some cases, washing the car or flushing toilets. However, there is growing interest in the use of rainwater as drinking water; the threat of water shortages from increasingly dry summers, the concern in the amount of energy used to treat and pipe mains water, and the belief that rainwater is purer than tap water, are just a few reasons for this.

In industrialised countries, Australia and New Zealand are leaders in the number of households who have their own rainwater harvesting systems and use their collected rainwater as drinking water. In Australia, household rainwater tank usage increased by 40% between 2004 and 2007, and 2.5% of people living in urban Australia drink rainwater (Rodrigo *et al.*, 2010). This stems from a tradition of rainwater collection, but is also helped by government support through rebates and the release of booklets and guidelines.

Is rainwater safe to drink?

There is some debate on the safety of drinking rainwater; can it be drunk untreated or does it need to be treated, what treatment is best, is it suitable for everyone to drink, are just a few of the questions.

Some studies have been carried out to try and answer these questions, Monash University in Melbourne, Australia, were kind enough to provide us with their study into the consumption of untreated rainwater.

What are the health effects from drinking untreated rainwater?

In 2010, researchers from Monash University in Melbourne, Australia, reported on a study of 300 homes that used stored rainwater as their main drinking-water source. Their objective was to see whether drinking untreated rainwater contributed significantly to the incidence of community gastroenteritis.

They carried out a double-blinded, randomised controlled trial in Adelaide, Australia. The households involved already used rainwater as their primary drinking-water source, but were asked to pass the water through a water treatment unit prior to use for one year. Half the houses were given an 'active' water treatment unit which filtered the water and the other half received a 'sham' unit that allowed the water to pass through unfiltered. The participants were asked to record all incidences of illness over a 12 month period. Since participants were unaware whether the unit they'd had installed was active or sham, this would not have influenced their reporting of illness.

At the end of the study, participants reported 769 episodes of gastroenteritis; 411 in the group with the active treatment unit and 358 for the sham unit. This works out at 0.77 episodes per person per year; 0.78 for the active group and 0.76 for the sham group. The results show there is no significant difference between the group with an active water treatment unit and those with a sham one.

While these findings suggest that the consumption of untreated rainwater does not contribute appreciably to community gastroenteritis, it may not be possible to generalise the findings to all situations.

Read more…

Checklist for drinking rainwater

There are several important things to remember when you are harvesting rainwater for drinking.

Catchment
The catchment area is very important; it is the first obstacle that the rainwater comes into contact with. To keep the rainwater at the highest quality, the catchment must be cleaned regularly and certain materials are not suitable, such as no lead- or bitumen-based material.

Tank
The tank is also important; like the catchment surface, it must be cleaned regularly and the construction materials chosen carefully. The tank should be covered and the rainwater filtered before entering so no debris etc. enters the tank.

Environment
Air quality must be considered; industrialised and highly urbanised areas may not be suitable as emissions from vehicles, incinerators, etc. can impact the air quality and therefore the rainwater quality.

First flush
The first rains after a dry period should be redirected (e.g. into flower beds), as they carry the debris, such as leaves and bird droppings, that have built up on the roof.

Cleaning
Thorough cleaning of the catchment surface and tank should take place every few years, with regular checks every couple of months. Manual scrubbing is preferred over chemicals. Tanks will also need desludging every 2-3 years.

Read more…

Berkeley Springs International Water Tasting Awards

Rainwater was very successful at the 2011 Berkeley Springs International Water Tasting Awards, winning first place in two of the categories. Following this success, we have invited some of the winners to write an article about their views of the use of rainwater as drinking water. You can read the official Berkeley Springs press release here.

SparkleTap Water Company

SparkleTap Water Company, based in Texas, USA, won the Gold Medal for their rainwater in the purified water category.

Their president, Jack Holmgreen, has written an article about the benefits of drinking rainwater and advice, including the fundamental four step system, on keeping rainwater clean, soft and pure:

"After sailing around the world and spending over thirty-five years in the water treatment business, I have finally found the very best tasting, cleanest drinking water in the world. The incredible part is that every time I reached out in an April shower, there it was in the palm of my hand. While the quality of rainwater is a function of the quality of the air it passes through, there is no younger, less contaminated, more palatable water to drink than properly collected rain.

"One of the keys to solving the world's coming water crisis is the careful collection, storage and treatment of this precious resource…"

Read more…

Tasmanian Rain

TASMANIAN RAIN® was established in 2004, and has gained international acclaim as one of the world's most unique and pure waters. With offices in the USA, Sydney and Tasmania the glass-packaged product can be found in top restaurants and hotels in Australia, 23 American states, across the Middle East and parts of Asia. TASMANIAN RAIN® was awarded 'Best Packaging Design' award for bottled water; but bottling rain water for market has not been without its challenges.

TASMANIAN RAIN® has provided an article explaining their motivation for bottling rainwater but also some of the problems that they have encountered along the way:

"You wouldn't know it from the recent flooding in Australia, but we live in the driest continent on earth. This is a curious fact to many who have visited some very wet corners of the country. The unequal allocation of this most precious resource must be fresh water's most common theme…"

Read more…

WATA, an effective solution for making rainwater drinkable

Antenna Technologies, an IRHA partner, has developed a range of devices that can purify rainwater to ensure that it reaches drinking water quality. Their WATA range produces chlorine using just water, salt and energy; this chlorine can then be added to water as a disinfectant. Their devices also control the degree of chlorination, ensuring the rainwater is not over chlorinated and remains pure. This technology is used in the IRHA Blue Schools projects to treat the rainwater before it is drunk by the children.

Antenna Technologies have kindly provided an article describing how their WATA devices work along with its uses and a case study:

"The collection of rainwater has been practiced throughout the world for thousands of years. Due to the risk of recontamination during storage, rainwater can't be consumed directly. Without any means of disinfection, rainwater recuperation programmes are often incomplete and rainwater is not used for human consumption…"

Read more…

Disinfection of Rainwater

There is much discusion on whether rainwater needs disinfected before use, and if so, what method of treatment is best. The following are the most common methods of disinfection of rainwater.

Boiling

The simplest method of treating rainwater before you drink it is to boil it. Water can be disinfected by bringing it to a rolling boil; once cooled it can be drunk immediately or stored in a sealed container.

Ultraviolet light (UV)

This is a common form of water disinfection which kills most micro-organisms. It is used continuously, usually at the point of use. The rainwater must be filtered before passing through a UV disinfection unit, as it won't work in dirty or cloudy water.

UV disinfection systems must be installed by a water treatment professional and they require careful and regular maintenance.

Chlorination

This technique should only be used if you suspect the rainwater in your tank to be contaminated. This can be done using powdered swimming pool chlorine (calcium hypochlorite, 65% available chlorine) or liquid chlorine (sodium hypochlorite, 12.5% available chlorine). It takes about 5 milligrams of chlorine per litre to disinfect a tank.

The chlorine should be mixed with water in a plastic bucket in the open air before being added to the tank. Always add chlorine to water and never pour water into chlorine. When added the chlorine to the tank, make sure it is well mixed in.

Your Views

Some opinions from our Facebook and Twitter community

If you have anything to say on the topics of our newsletters, or about rainwater harvesting in general, you can share it with us on Facebook and Twitter:

"I prefer naturally soft, pure, un-chlorinated, un-floridated rainwater, cheers!!"
Ben Padraza

"UV treatment and a carbon filter only....no CHLORINE please!!!"
Nora Motter Stark

"I have been drinking rainwater for 17 years!"
Vishwanath Srikantaiah

Article in the Spotlight

Harvesting Rainwater to Save Bangalore by Marianne De Nazareth

Water is the elixir of life, and without water none of us can live. Attending UNFCCC Climate Change Conferences for the last two years, I can see that the world is heading towards Water Wars if immediate solutions are not found.

The reality cannot be more stark than right here in India. Look no further than Bangalore city, touted to be the silicon valley of India, and drive to the outskirts to witness how real this threat is. "With the population literally bursting out of the cities' seams and water getting scarce, the need of the hour is to employ rainwater harvesting on a war footing," states Jeff D'Lemos who is a rainwater harvesting specialist.

Read more…

IRHA Activities and News

New IRHA Organisation Members

We are happy to welcome two new members: **Global Vision International Fiji** and **Fantsuam Foundation**, Nigeria.

GVI are working to set up rainwater tanks in villages in the Yasawa Islands of Fiji, to provide water during long dry season, as well working with teachers in local schools for holistic community support. Fantsuam Foundation's mission is to eliminate poverty and disadvantage through integrated development programmes, building tailored programmes to address areas of need.

The IRHA Blue Schools Programme on Facebook

We have created a new Facebook page dedicated to the Blue Schools programme. This page will have regular updates on the progress of our various Blue Schools projects, including photographs, and also gives a background to the programme itself.

Raindrops Geneva Award 2011

Best Photographs on the Advantages of the use of Rainwater Harvesting

We have extended the deadline for our Raindrops Geneva Award 2011, in collaboration with Photojournale. The date for the final submission of photographs is the 31st October 2011 at 12 midnight GMT, with the top three photographs awarded CHF 1000, 600 and 400.

- Please visit our **website** for important information and read the **Rules of the Competition** before you enter your photographs.
- We ask competitors to focus on the topic, and **only enter photographs that show the uses and benefits of rainwater harvesting**; entries straying from this theme will not win.

Once you have read the Rules of the Competition, send your photographs to: **raindropsaward@irha-h2o.org**

References

This newsletter was written with help from papers and information booklets that can be found here.

IRHA Video Corner

The IRHA Video Corner showcases interesting and informative short films on several different aspects of rainwater harvesting.

Join us online and get involved!

If you have any ideas, examples or questions about rainwater harvesting, please feel free to share them with us on our **Facebook** and **Twitter** pages.

Upcoming Newsletter

The next edition of bRAINstorming will look at our Blue Schools programme. If you have any ideas, articles or pictures that you would like to contribute, please send them to us at:

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Subscribe to the Newsletter

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Become a Member

The IRHA Members benefit from our extensive network and contribute to increasing the global use of rainwater harvesting. Visit our website for more information.

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