

What's Happening to Our Water?

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Introduction

Is all water the same?

Filtered Water: Water that is filtered to eliminate harmful materials.

Tap Water: Water that has been treated and partially filtered.

Rainwater: Untreated water that flows through the water cycle.

What is in our water and how does it get there?

C02: Comes from industrial plants emissions and car exhaust.

Calcium: Comes from rainwater seeping into and dissolving rock.

Chlorine: Is put into tap water at water treatment plants to kill bacteria.

Pesticides: Come from farming waste and are soaked up by water.

Water Type	pH	Hardness (calcium in ppm)	Chlorine (in ppm)	Lead	Pesticides	Nitrates (in ppm)	Nitrites (in ppm)	Bacteria
Rain	8.25	85	0	Negative	Positive	1.25	.075	none
Filtered	6.5	25	0	Negative	Negative	0.5	0	none
Tap	8.5	185	2.0	Negative	Negative	0.5	0	none

Methods

Plant growth

Wisconsin Fast Growers were planted in 2X2X4 cm pots, 1 cm deep into standard potting soil and given 1,500 mL of water. Plants were placed in a uniform arrangement equidistant from LED lighting.

Water bath usage

Bird baths were filled with 1,500 ml of each water treatment and placed in the same position relative to the sun.

Predictions

Plant growth

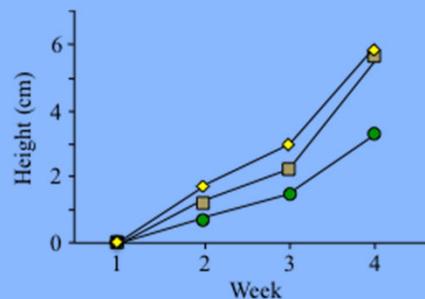
Pesticides are bad for plant growth. The rainwater contains pesticides. So rainwater's plants will not grow as tall in cm as filtered and tap. Since tap and filtered water are both negative for pesticides, they will both grow the same height in cm.

Water bath usage

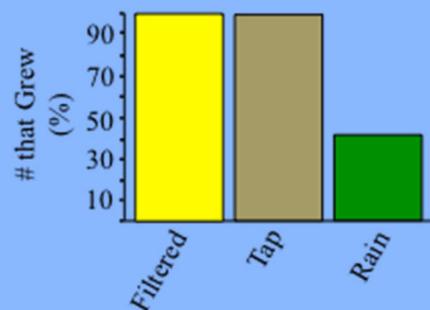
We think the birdbath containing the rain water will have the most water used because the birds are used to rainwater.

Results

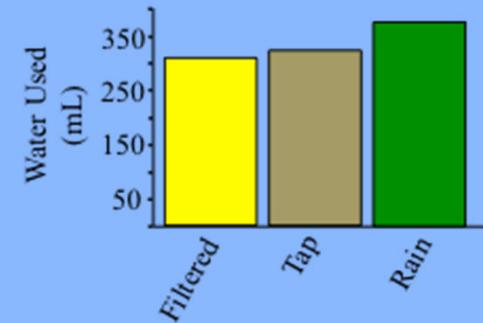
Plants treated with rain water did not grow as tall



Plants treated with rain water did not sprout as often



Water usage was about the same between each bird bath



Conclusions

Plant growth

The chemicals in rain water, especially pesticides, hurt plant growth. Pesticides can help plants grow because they keep pests from eating the plants. However, too much pesticides can negatively affect plant growth (Spiers et al., 2008).

Water bath usage

Birds and other animals can't tell what chemicals are in the water they use. This incorporates these chemicals into the food chain and can negatively affect them.

References

James D. Spiers, Fred T. Davies, Jr., Chuanjiu He, Kevin M Heinz, Carlos E. Bogran, and Terri W. Starman (2008). Do Insecticides Affect Plant Growth And Development? *Greenhouse Grower*.