



“WHAT CONCOCTION DO I NEED TO STIR UP IN ORDER TO GIVE ME THE BEST RESULTS POSSIBLE?”

YOU’RE DYING TO KNOW, AND WE’RE ABOUT TO BREAK IT TO YOU. ARE YOU READY? HOLD TIGHT. HERE WE GO. INTRODUCING THE MAN WITH THE BIG SECRET ... MR. RICHARD GELLERT! GIVE IT TO US!

Ahem ... thanks Everest ... okay, the ultimate feed formula ... in the United States, Canada, or even the whole world starts with water.

Pretty obvious, right? Why the let-down faces? What, did you think I was going to give you a brand name or something? What do you think I am? On commission? Listen, everyone fills up their watering can, reservoir, tank, jug etc. with water and then adds the other ingredients to help their plants grow and bloom. But have you ever stopped to think about what kind of water you are starting with in the first place? “What?”, you may say, “That bland-tasting clear wet stuff that flows out the tap? That’s just the filler right? Don’t tell me this article is just about water! I’ll die of boredom! Please no! I’m turning the page to look at some nice colorful nutrient ads instead. Water is water is water!”

Wow – that was quite a rant. Glad it was you doing the talking.

Seriously, I bet the vast majority of you are using good old H₂O from your tap. Sure you might let it stand for 24 hours in an attempt to eke out some of the nasty chlorine – but there’s probably a whole host of other contaminants and useless compounds that remain – stuff that won’t evaporate away and stuff that your plants won’t know what to do with! Ewwwww ... water contaminants. You might not be able to see them with the naked eye, but it’s the botanical equivalent of ordering yourself soup of the day and finding a huge hairball floating in there. Not pleasant.

Alternatively, you could start with ... well how about pure H₂O? Water, and nothing else. Water that is free of pollutants, unusable minerals, and other agents that have no place in your garden. THIS kind of water is the key to the “ultimate feed formula.”

You may say, “Oh, B.S. I’ve been growing with tap water for

CUE THE DRUM ROLL. IT’S THE MOMENT YOU’VE ALL BEEN WAITING FOR. WITH ALL THESE NUTRIENTS AND ADDITIVES AVAILABLE ON THE MARKET, ONE QUESTION’S ON EVERYBODY’S LIPS:

WHAT’S THE ULTIMATE FEED FORMULA?

ten years and had great results.” But what are you comparing them to? Have you asked experienced growers, who use reverse osmosis to purify their water, for their opinion? I’d wager they’ll tell you one thing: they would never garden with tap water! They hold their beloved water purification systems in the highest esteem. They’ll also tell you that the pure health and quality of their harvests have improved dramatically. Most importantly, they will insist that their yield went up so much that it quickly paid for their investment in the water filtration equipment!

GIVE THEM JUST WHAT THEY NEED

It makes sense. By starting with a pure base of H₂O you can mix up a feed formula with exactly what your plants want to feed on. No contaminants. (Remember that hairball.) Plants require 13 base mineral nutrients in all which breaks down to 6 macronutrients and 7 micronutrients. This is the basis of what they need to grow. Of course, by adding other stimulants, additives, and biological inputs, the ultimate feed formula can be customized and made more powerful. You add exactly what your particular variety of plants need, give them a good growing environment and they will have every chance of growing to their maximum potential.

Although, if you start with a base of water that is impure and contains an

assortment of contaminants, your plants will be taking these in along with whatever else is in your formula. If you’re lucky and have good clean water then your garden should do fine. But if you are like most people, your tap water is far from good or pure. Tap water does contain some of the elements that your plants need to survive - such as calcium, magnesium, and iron. However these minerals are typically in forms that your plants find impossible to absorb - the molecules are too large and end up accumulating on the outside of the roots causing the classic “lockout” problem. This can be compounded by adding more of these minerals that are in your plant nutrients.

High quality plant food contains these same minerals but in a form that your plants can very easily absorb. The minerals have been combined with other agents and chelated to allow them to be readily available for the plants to use. Your plants can immediately uptake them and convert them to vegetative material and later for fruits and flowers. No more stagnant growth. No more yellow leaves. No more “lockout”. Big fat juicy harvests? Yes!!

FREE UP YOUR MICROBES!

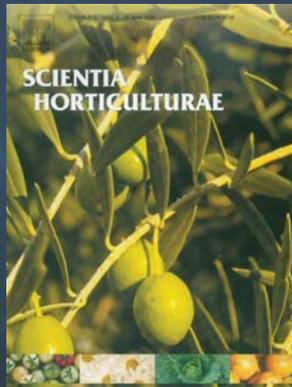
Of course some types of beneficial microbiology will help break down these larger molecules of minerals in tap water and allow the plants to use them. But, the whole point when gardening

indoors (or outdoors for that matter) is to minimize the time and maximize the harvest. Would you prefer to wait around while helpful microbes digest the unusable minerals for your plants to feed on..... or would you prefer that the microbes help speed the delivery of absorbable minerals and then watch your plants suck up the goodies immediately and start to thrive? It’s a no brainer. If your little microbe buddies don’t have unusable nutrients to digest, they make themselves far more useful by converting your nutrients, in the presence of pure water, into super charged plant food. That’s right, by using pure water, your favorite nutrients, and microbiology, you can kick your garden into high gear and be amazed at the growth rate and end results. The microbes will help break down and deliver the nutrients directly to where they are needed. Your plants will have all the components necessary for your best harvests ever.

Obtaining pure water is easy. Gone are the days of hauling water from the store in five gallon jugs. Today the home gardener has a variety of water filters available that can produce the same quality of water as the stores, if not better. Reverse osmosis is the technology used by water stores and grocery store vending machines. This same technology is shrunken down to a size that can fit in anyone’s garden. Pure, amazing water can be produced for pennies a gallon at home or in the greenhouse.

WHAT IS CHLORAMINE?

Chloramine (monochloramine) is being increasingly used in low concentrations as a disinfectant in municipal water systems as an alternative to chlorination. A combination of chlorine and ammonia, it is currently considered the best technology for controlling the formation of certain regulated organic disinfection byproducts. Chlorine (sometimes referred to as free chlorine) is being displaced by chloramine, which is much more stable and does not dissipate from the water before it reaches consumers. Chloramine also has a lower tendency to convert organic materials into chlorocarbons such as chloroform and carbon tetrachloride. Water treated with chloramine lacks the distinct chlorine odor of the gaseous treatment and so has improved taste, however it has been proven to significantly inhibit plant growth and the development of beneficial microbes.



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GETTING TECHNICAL: THE WORKING BENEFITS OF WATER PURITY

More advanced growers will find this additional, more in-depth info, very useful:

Purified water (reverse osmosis water) provides three major benefits to its users:

1. Lower overall ppms (TDS/ EC) – which in turn allows for greater “headroom” for adding nutrients and additives. A given solution should only have 33-37% (slightly more than a third) of its overall ppms used up for additives

and enhancers. Let's look into this in a little more detail:

Say a given reservoir's overall ppms are to be set at 1200ppms (for accuracy's sake on a 700 conversion scale) only 450 ppms should be used for additives and enhancers. The remaining 750 ppms should be used for base nutrient. So how does all of this apply to purified water? Well, if the ppms coming out of the tap are at 450ppms, you really have no room for additives at all. At least, no additives that are going to effect the conductivity of your solution (raise the ppms). Otherwise, you will not have enough overall "headroom" for your nutrient in solution. Many people add additives in regardless (even if their tap water has high ppms to begin with) and then when nutrient deficiencies arrive they try and correct by either flushing which creates even more deficiencies, or by adding more nutrients which raises their overall ppms and causes nutrient lockout and ultimately necrotic burn. All of this can be avoided by just purifying your base water!

2. Reverse osmosis removes both Chlorine and Chloramines from the solution. This, in turn, removes the ability for the tap water to damage precious beneficial microbes that can be inoculated into a nutrient reservoir. These beneficials can provide enormous benefits to your plants roots by growing out new roots, enhancing micro root hair development, aiding and facilitating with nutrient absorption, increasing nutrient availability within the plant's cells, and manufacturing hormones and enzymes providing for more rapid growth and fruit / flower size, as well as providing a strong layer of defense. Most people think that the chlorine in tap evaporates out of solution by just letting it sit overnight or better still by cooling it and allowing it to run with an air pump / stone for a few days. Well, most people are wrong about this. The Chloramines do NOT evaporate out and are still toxic to microbes.

3. It removes other pollutants and contaminants from the water supply too. Some city water is relatively free of contaminants. Most is

not. The municipal supply in most cities is not worried about removing trace contaminants. They are most concerned with annihilating harmful microbes (hence the high levels of chlorine and chloramines.) Water supplies in industrial or just heavily populated areas usually contain pesticide run-off, a medicine cabinet full of pharmaceuticals, bio-chemical residual run-off, etc. The list goes on and on. Most people are not happy drinking tap water these days ... so why inflict it on your plants either?

If you're serious about your plants, start getting serious about the water you're feeding them.

Big respect to Richard Gellert from Hydro-Logic and Jordan Weiss from Green Coast Hydroponics for their help in putting this article together! If you've got something to say on the subject of your tap water or reverse-osmosis purified water then speak up - we want to hear from you too! Let us have it at: rant@urbangardenmagazine.com

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