

the bottom momentarily touches the air on its way back down to the bottom. The water surface is like the side of one big bubble. In this way water picks up oxygen much like a stream does running through a forest.

3. When you water, use a fine spray. As the water or nutrient sprays through the air it picks up oxygen. This in turn re-oxygenates the soil for the roots and bio-organisms. Have you ever wondered how outdoor plants can live when it rains day in and day out, month after month? It's the same principle. The rain picks up atmosphere as it passes through the sky and delivers it to the roots zone.

Generally speaking, plants can only be over watered if the soil lacks air. One of the major keys to hydroponics is air in the nutrient. Without it the plant roots will rot.

Most gardeners let their plant soil dry out a little before watering or fertilizing without knowing why. Here's why. As the surface of the soil dries small air passages are formed allowing atmosphere to enter the root zone. Soil that is kept constantly moist won't have these small air passages. Without the benefit of additional oxygen, air loving roots and needed bio-organisms can't survive. Roots begin to turn brown when rot sets in. Remember, roots love to have our atmosphere around them because it contains oxygen.

Vita Grow Water Conditioner is a great product to help protect against toxic shock besides helping them to grow strong. Give it a try!



All water sources can benefit from Vita Grow Water Conditioner. Natural compounds help keep plant foods soluble.



Vita Grow plant food is simply a superior product. It is a complete professional formula for hydroponics and soil. You consistently get great results! Easy to use!



Vita Grow Thunder Bloom Foliar Spray!

Enjoy lovely and colorful blooms. Natural elements enter the plant through the leaves. Easy to Use!



Vita Grow pH Up and pH Down offer great quality at a fair price. Strong and effective but gentle to plant roots. Dilute 3 parts water to 1 part concentrate for best results.



CWP Instruments calibration solutions for pH and EC equipment is laboratory tested to insure quality control in every batch made. You can pay more but you won't get more! Good Stuff!



Presents

Simple Tips for Successful

Indoor Gardening

Fertilizing Plants  
Growing in

Soil

It is our belief that if the following simple rules are observed and integrated into feeding programs, 50% of the plant growth problems, including insect infestation, could be averted. Remember, sick plants attract bad insects. Bad insects eat sick plants. Sick plants without help could die a grizzly death.

For the great majority of Vita Grow users life is wonderful. That's because Vita Grow plant foods, bloom sprays, rooting compounds and water conditioners are simply the best in the world. They work in both hydroponic and soil without flaw.

But for many years we have listened patiently to a few of our customer's plant health problems and their descriptions of plant symptoms. We always help as much as we can but we are pitted against books that describe symptoms of possible deficiencies or toxicities of an element in the plant's feeding program. It is interesting to note they are identical for half a dozen elements.

Also, there are other common problems with lighting the books don't list that can look like fertilizer problems.

However, in this short leaflet we will stick to plant food and watering methods that are known to help all gardeners. It's ironic that while many gardeners are successfully dealing with society's complex issues, they overlook the simpler concepts of growing plants in containers that could be considered a "No Brainer". The ideas and concepts herein are simple in nature and essential to indoor plant health, both short and long term, vegetative and bloom growth. We suggest that you read it and pass it along to a fellow gardener. Good Luck!

\*This leaflet assumes you have read the plant food instructions before feeding your plants!

## Toxic Shock

**1. Never let your plant and container sit in plant food.** This will cause the nutrient to become concentrated and soak back up into the container. This will eventually make the soil toxic. Drip trays catch drips; they are not reservoirs. Dump excess plant food out of the drip trays. Fertilize your plants in an area where runoff will not be a problem. Example: When you were in school your teacher showed you how to make crystals by pouring in salted water into a cup and letting it dry out before adding another application. Some teachers used a string suspended over and into a cup of salt solution. The crystals grew and grew. This is what happens in the soil when you let the nutrient go back into the containers soil. This toxic shock or reverse osmosis may occur at any time with over feeding but some growers say that the plants do just fine until they go into bloom. With the accumulation of fertilizer salts in the soil, the plants can no longer feed and will show elemental deficiencies such as: leaf curling, wilting, leaf crumble, purple stems, vein yellowing, leaf yellowing, spotting, tip burn and death.

**2. Never feed the plant just enough plant food so that it barely runs out of the container.** Many gardeners don't want to overfill the drip tray when they feed. Wrong idea! The plant should be fed enough food so that the soil is soaked and rivers of nutrients run out of the pot holes. To be safe, 10% of what you feed the plant should come out of the bottom holes of the pot, taking with it the old plant food, pathogens and toxicities given off by the plant. Plant food is inexpensive compared to plant death or insect infestation. If you're going to feed a plant, feed it good. Here again, if you are not careful the soil will build up with plant food and toxic shock or reverse osmosis will occur.

The symptoms of overfeeding are stated in

the previous section. Drip trays catch drips; they are not reservoirs. Dump excess fertilizer runoff out of drip trays

## Never Underwater or Underfeed Your Plant

When you water or fertilize the plant make sure that the soil is soaking up the water or fertilizer. Sometimes the soil will become hard if you have forgotten to water it or waited too long between watering. It will shed water from its surface like water runs off the back of a duck. You will notice that the water runs to the side of the container and out of the bottom of the pot before it had a chance to penetrate the surface. If this happens, break up the soil on the surface and patiently water it back into condition. In time, after reconditioning from adding back the right amount of moisture, the soil will expand back to its normal consistency. You can allow the surface soil to dry but not harden.

## Always Add Extra Oxygen to the Soil.

Master Gardeners use the old trick of oxygenating the water before feeding it to the plant. It can be done several ways but listed here are the most widely used methods.

1. Air can be forced into a body of water or reservoir via an air pump, tube and air stone. Place the stone on the bottom of the reservoir. The more bubbles the better.

2. Place a water pump at the bottom of a reservoir and point it straight up toward the surface. The water looks like it is boiling but is in fact re-circulating the water or nutrient from the bottom to the top. The water from