



# HTCG Newsletter

## No 3, March 2011

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**Hard at work at a workshop**

*Photograph by Bud Tiskus*

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### What is our mission?

Our mission is to take the mystery out of plant science and enable people of all ages to have fun growing their favorites right in their own homes and classrooms. We want to introduce people around the world to the ease and joys of home plant propagation through tissue culture.

KCET/HTCG is a non-profit organization dependent on memberships, tax-deductible donations, and grants to further this goal. KCET/HTCG supports plant tissue culture with workshops, instructional materials, training and supplies to help the individual grower. We want to make this earth-friendly hobby affordable and enjoyable.

We share ideas, protocols, media recipes, sources and information and supplies. We work closely with teachers, students and individuals to help them learn and understand the benefits of home tissue culture.

The Home Tissue Culture Listserv, another important exchange, was founded by our president, Carol Stiff. The goal is to help people communicate with each other, share ideas, compare methods, exchange seeds, plants and cultures, and find sources of supplies needed for home and classroom tissue culture. You can join this great group by going to <http://tech.groups.yahoo.com/group/hometissueculture>. Or at the website [www.hometissueculture.org](http://www.hometissueculture.org)

All these avenues show our dedication to promoting plant science education to the home-growing individual enthusiast. If you haven't already, come and join us. Membership will get you a 10% discount on products sold by HTCG, a free copy of the important instructional Kitchen Culture Kits DVD or Frank Tromble DVDs, plus discounts with many vendors through HTCG. And this great Newsletter, too.

Grow Happy!

## Editorial — Welcome from the President

*Carol Stiff, WA, USA*

Welcome to the newly revised, newly organized HTCG Newsletter. We tried this once before but did not utilize volunteers sufficiently to keep it going (see the previous newsletters #1 and #2 at <http://www.hometissueculture.org/Newsletters.htm> . Our revised newsletter is being published by a team of volunteers consisting of: Arthur Sale and co-editors/designers; Toni Annable, submission editor; and a team of contributors/hunters, who will write articles or hunt for others in our group to write them (Chris Guppenberger, Frank Tromble, Kent Fenley, Robert Pfohl, Robert Valiquette, Terry Vanderwende). Please give them your support and feedback.

The **Home Tissue Culture Group** has been unofficially in existence for about 13 years since the founding of the Home Tissue Culture Listserv. Over the years it became evident that we needed a more formal presence to unite our group. Thus the new HTCG was organized to:

- promote and support home (hobby) and classroom plant tissue culture using inexpensive equipment and supplies,
- provide education through national, regional and/or community meetings, workshops, and the sale of hobby kits and supplies,
- share ideas, protocols, recipes and sources of information other via a website and/or virtual newsletters,
- work closely with K-14 teachers and students to help them learn and understand the benefits of home tissue culture
- to seek donations and grant money to support our goals.

The original plan was to call our group the 'Home Tissue Culture Association' an independent non-profit corporation which would seek 501(c)(3) status. However, since the new Kitchen Culture Education Technologies Inc. had just received its exempt status from the IRS and our goals fit within KCET's goal to promote plant science education, our lawyers advised HTCG to accept subsidiary status under KCET and thereby enjoy the benefits of the exempt status without further expenses or loss of time.

Having started the Home Tissue Culture Listserv and Kitchen Culture Kits Inc., I was the unifying factor in this process as the founder of KCET, having prepared the paperwork for the IRS 1023 application, and donating funds for legal counsel on the organization of HTCG. The HTCG was granted permission to sell Kitchen Culture Kits, supplies, and use my teaching materials for the HTCG workshops. In addition, my company (KCK) granted KCET/HTCG free use of computer equipment, office, and lab facilities for a period of time. I served as an unpaid full-time employee of KCET/HTCG until late 2009, then becoming the executive director with a nominal wage (paid 2.5 days per week *if it is affordable*). The executive director handles daily business activities of sales, shipping, ordering inventory, advising, webpage maintenance and other duties as needed.

**Kitchen Culture Education Technologies Inc.** has a **Board of Directors** which oversees the operation of KCET/HTCG: finances, legal documents, licensing, pricing, etc.

Meet The Board of Directors for 2011:

Carol Stiff.....President  
Frank Tromble and Chris Guppenberger.....Co-Vice Presidents  
Denise Garoutte.....Treasurer  
Toni Annable.....Assistant Treasurer / Member-at-Large  
Michael Horn.....Secretary  
Joseph Dolan, Charles Stiff  
and George Timm.....Members-at-Large

## Preparations to Tissue Culture

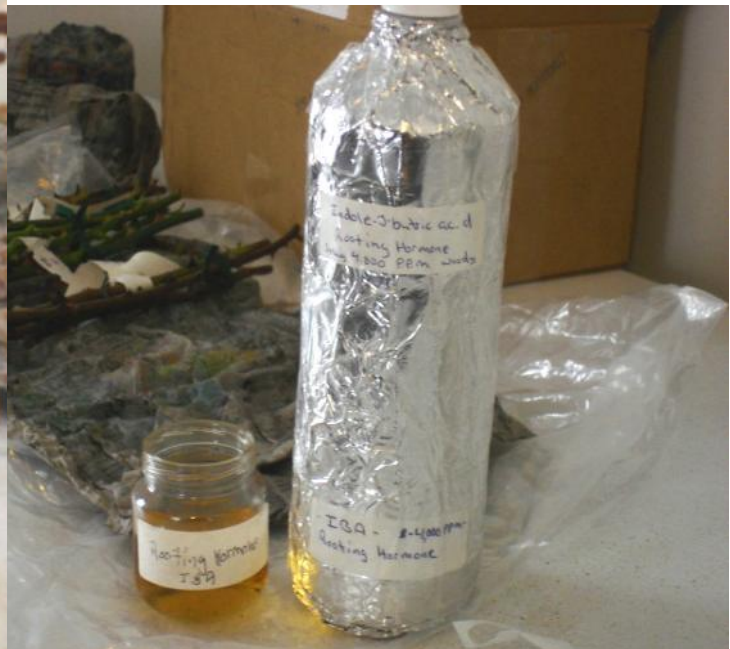
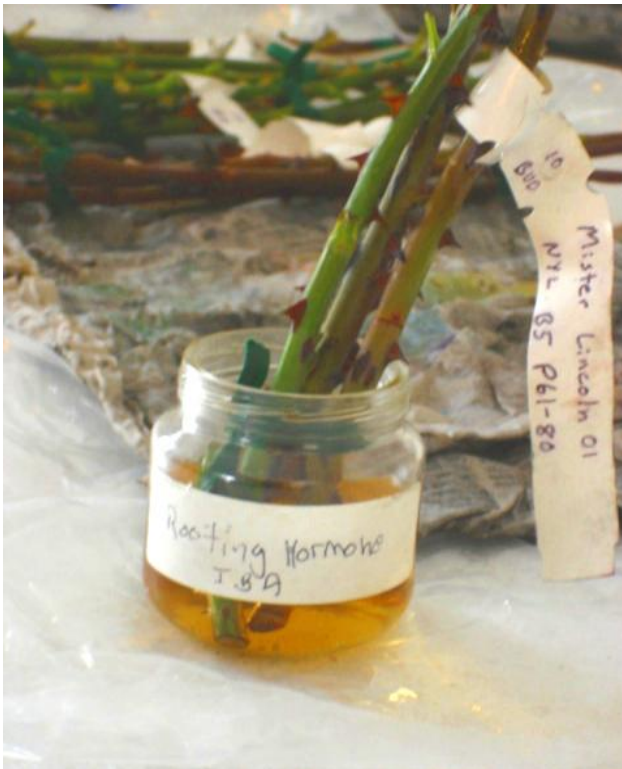
*Kent Fenley, USA*

In 1991 I started a small greenhouse retail business after building a thirty foot by forty five foot double poly greenhouse. This retail business was preceded by several years of preparation with small wood frame greenhouses and several books that included titles by Jules Janick Horticultural Science, Lydiane Kyte Plants from Test Tubes and Plant Propagation Principles and Practices by Hartmann and Kester. Then for the next fifteen years I operated the business until the price of oil increased so much that the profit margin completely disappeared forcing me to close until better times should reappear ( I'm still waiting for those times to return). I became quite good at conventional propagation that included soft wood and hard wood cuttings, I thought tissue culturing required too large of an investment until I saw the YouTube videos Frank Tromble posted about tissue culturing. Over the years I saw a need for tissue culturing to manage and maintain clean stock plants. I have purchased tissue cultured plants for resell from Dr. Lynn Walker in Louisiana who propagated some old garden roses and tropical plants from Agri Starts. I want to tissue culture plants to help me clean up stock plants so that I could expand the market for the plants that I produce.

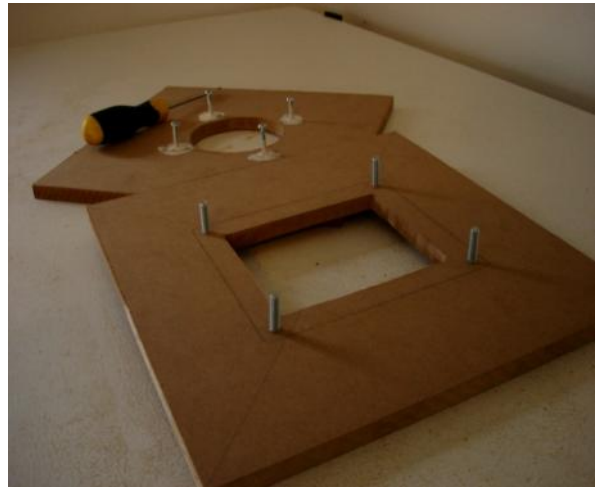
The Pelargonium has been an important plant to my business as are various herb plants and roses. I am focusing on these plants with my tissue culturing preparations. I started several seeds of Maverick Pelargonium pink and red to be used in tissue culture, these plants should not have virus contamination. I selected one pink with one red pelargonium that was free flowering and strong growing from the Maverick seedlings to use in culturing, I then took cuttings to produce smaller plants to work with.



The roses I intend to use have been purchased from Foundation Plant Services with the University of California; these plants arrived to me as hard wood cuttings. I treated the cuttings with homemade rooting hormone 4,000 ppm. of IBA. I used this rooting hormone for the pelargonium cutting after it had been diluted by half with distilled water and pH adjusted with Citric Acid. I want to start tissue culturing roses with virus free plants to reduce the possible problems at the start. Hopefully when my skills develop with tissue culturing I will progress to disease elimination from infected plants. From my experience disease elimination takes about three years to accomplish in a greenhouse using conventional propagation techniques. Tobacco Mosaic virus is a problem with several plants and it is important to eliminate tobacco products from your growing areas and propagation areas. Roses also need to be screened based on their winter hardiness, Dr Lynn Walker propagated several roses many years ago that were not hardy in zones 5 and 4. Tender plants limit sales to the southern states. Unfortunately I lost contact with Dr Walker and am not sure if he is in business at this time.



Preparations to tissue culturing have cost in excess of \$700 to date for this my first year of membership with the Home Tissue Culturing Group. Here are some pictures of my progress with acquiring the tools needed for this hobby. My hope is to complete the basic supplies list in early 2011 and start culturing before spring arrives in 2011. The first two pictures on the next page are the HEPA Filter and blower, the last two pictures are the box unassembled for the HEPA filter to be surrounded by and blower to be attached. The middle two pictures are the aquarium growth chamber transfer box and cart. The aquarium needs a front with sliding glass doors and opening for filtered air to be piped into the box.



*All photographs by Kent Fenley*

## A Mini Tissue Culture Laboratory for Simplifying Plant TC Technology

*Darshanie P Prematilake, Research Officer*

*Horticultural Crops Research & Development Institute, Department of Agriculture, Sri Lanka*

Plant tissue culture provides an efficient technology for producing good quality planting material, especially for vegetatively propagated crops (fruits, ornamentals). Usually this is performed in a fully equipped laboratory and hence beyond the pocket of an ordinary person. Low-cost tissue culture is the use of adapted technology, practices and equipment to reduce the unit cost of a micro propagule and plant production. This should lower only the cost but not the quality of the plant. In order to simplify this technology and use it as a home level or small-scale venture, the suitable simple alternatives and methods need to be researched with respect to plant growth, microbial contaminations and controlling the culture environment without violating the scientific principles of plant tissue culture.

Within this context, we designed and constructed a mini tissue culture laboratory, aiming at experimenting on these aspects in a true simple laboratory environment. This lab is expected to serve the following purposes.

1. An actual simple laboratory to conduct research on low-cost tissue culture, identify practical problems encountered and finding suitable solutions
2. A model lab to educate young farmers, housewives, hobbyists etc. who wish to own a simple TC lab
3. An education unit for school children and teachers to learn the basics of plant tissue culture.

This model lab is ~14m<sup>2</sup> with 3 compartments for media preparation & sterilization, for inoculation and for the growth of cultures. All expensive lab equipment is replaced with simple equipment (pressure cooker, normal balance, glass tank for culturing etc.). The culture room is not fitted with an air conditioner for cooling (despite the outside tropical temperature) and no artificial lights (only sunlight). In fact we have simplified the laboratory to a greater extent and currently we are researching on the success of this system and the limitations. The final target of this program is to develop an efficient, scientific and a simple system for plant tissue culture, mainly for the quality planting material production at home level.

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### Kankakee Workshop

*Bud Tiskus, Chicago, IL, USA*

I wanted to do a short write up, as an overview, if anyone has interest in any of these workshops. This past Saturday I attended a HTCG plant tissue culture workshop in Kankakee IL at the Kankakee community college. I was especially lucky to attend this workshop as besides Dr. Carol as ring leader, it was also hosted by Dr. Scott Stewart, who heads up the ag-horticulture program at the college. Dr. Stewart is also an expert at tissue culture, and specializes in Orchids. Besides the expertise and instruction of these two PhDs, it was also attended by the most well-known of Tissue Culture Hobbyist, Frank Tromble. Not only is Frank very knowledgeable, he is also very generous, giving away 20" banana plants, Rare Orchid Seedlings in culture, and a few handy tools for dispensing media and orchid seeds. Frank is not only is very humble, he is an overall, nice, helpful guy.



**Frank Tromble**

Initially I wasn't sure how much I would pick up from this as I thought it was geared for those just those starting out, I was way wrong as I learned so much, my head was spinning and without a doubt will definitely help advance my Tissue Culturing. A nice bonus was when Dr. Stewart gave us a tour of the Greenhouse, letting us take cuttings of almost anything to try in tissue culture, with tidbits of how different plants would respond. There was a long lecture presented by Dr. Carol, with very active discussion by the participants.

As far as the participants, about half were either horticulture related teachers or using the information for career related purposes, about half were interested hobbyist; most new, some experienced. There were donuts, coffee, and box lunch provided. As a final bonus Carol gave each student some free goodies including a whopping 30ml of PPM. It was informative, a great time, and well worth it if you ever have the opportunity.

Here is an album with some photos in no particular order. All photos by Bud Tiskus.







All Photographs by Bud Tiskus

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## The KCET and HTCG Moving Forward

### Instructors and grant writers needed

Currently Carol Stiff is our only instructor for workshops. Workshops are organized with the cooperation of a *site coordinator* who locates a classroom, spreads the word about the potential workshop and brings in attendees. The advertising is also facilitated via the Listserv. Please see <http://www.hometissueculture.org/HTCGworkshops.htm> for the site coordinator's description/duties and rewards.

Currently the workshops are self-supporting. The fees, usually \$99 per person (with a minimum of 16 persons) covers supplies, travel, food and an instructor honorarium. Once grant money is received, many workshops can be taught around the country (planet?) and we will need more instructors. Those interested in this should contact us at [carol@kitchencultureEducation.org](mailto:carol@kitchencultureEducation.org) Instructors must be experienced in home tissue culture and should attend a KCET/HTCG workshop if possible.

See <http://www.hometissueculture.org/HTCGworkshops.htm> for full list of criteria. We need people willing to be trained as instructors, and site coordinators to make workshops happen.

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**African violets**  
(*Saintpaulia* hybrids and chimeras)  
Photo by Arthur Sale





Presents

## Hands-On Workshop for Plant Propagation

### ***Plant Tissue Culture for the Home and Classroom***

*A workshop for hobbyists, teachers, students, Master Gardeners,  
Nurserymen and anyone else who loves or collects plants*

<b>City, State</b>	<b>Blaine, Minnesota</b> <i>(16 miles north of Minneapolis)</i>
<b>Date/Time</b>	<b>May 21, 2010 – Saturday – 9am to 4pm</b>
<b>Place</b>	<b>Minnesota School of Business</b> <b>3680 Pheasant Ridge Dr., Blaine, MN 55449</b>
<b>Guest</b>	<b>Jason Koch – Carnivorous Plant Expert</b>

Have a favorite plant that you would like to mass produce?  
Love to watch plants grow? Are you a collector? A plant scavenger?  
Need something interesting to do for science fair or a school project?  
Want to learn a "biotechnology" technique to teach your students in science class or at home school?

Plant tissue culture is a method of plant propagation that involves growing plant parts in a sterile environment and controlling the production of roots or shoots with growth regulators. Using this method, small plant parts can be induced to produce hundreds of small "plantlets" which can be further developed and grown to maturity in greenhouses or as houseplants.

This kitchen culture approach has proven to be useful for science fair projects, teaching plant growth concepts, and providing a laboratory experience for homeschoolers. Hobbyists can mass produce their favorite plants as well as exotic plants.

*In this workshop you will make your own media, disinfect and culture plant leaves, axillary buds and orchid seeds, and discuss trouble shooting and internet resources. You will take home 6 - 10 cultures that you create in class plus a handout with basic instructions and FREE samples of PPM, agar and MS plant medium. **All media and materials for the workshop will be provided.** No prior knowledge required – only an interest in plants! Jason Koch will do a presentation on carnivorous plant culture.*

**Registration is \$99.** Registration can be paid via PayPal at our website at: <http://www.hometissueculture.org/htcgworkshops.htm> Contact Jason Koch for further local information [jkochuni@hotmail.com](mailto:jkochuni@hotmail.com) and contact Carol for specifics on the workshop content: 608-302-2750 or [carol@kitchencultureEducation.org](mailto:carol@kitchencultureEducation.org) There will be an optional tour of a greenhouse/lab after the workshop in nearby Wyoming, MN. Driving directions will be sent to participants.

Photographs by Jason Koch — Terrifying Carnivorous Plants



## **Gardening in a Test Tube** **(Or How Your Favorite Plant Can Become a Ground Cover)**

*Barbara Converse, RPMGA, USA*

Although I knew that plants could be mass propagated in sterile containers, I just thought that was way beyond me. This was laboratory stuff; lots of expensive equipment and chemicals, then those scientific procedures and months of training. This would be much too much trouble for my brain to absorb, or my hands to learn. NOT TRUE!

Then came an enlightening event. Because of my being a MGV, I was invited to a tissue culture workshop in Milton WI given by Carol Stiff. Carol, an educator, scientist and plant lover, has a business devoted to teaching "common-folk" plant tissue culture techniques. Her business also provides kits and supplies needed in smaller amounts for home or classroom use. Carol certainly does not present herself as a hardcore businessperson. As it goes with gardeners everywhere, her sharing of knowledge, plants and experiences are a natural part of life. She generously supplies information about products from other vendors as well as what you might be able to use from around the house.

Attendees at the workshop were a diverse group from a broad area. Some brought plants and successful tissue cultures that they had started at home. Plants available for us to culture were: Orchids (seed pods too), bamboo, bananas, African violets, flytraps, sundews, pitcher plants, hostas and begonias. The atmosphere was laid back and relaxed, with participants trailing in as the weather took a toll on punctuality (sound familiar?) 6 inches of snow fell before, during and after the event. In spite of this, 12 participants watched Carol's slide show orienting them to the world of tissue culture. We then mixed culture media and sterilized supplies in a microwave. Workstations were set up, disinfected, and stocked. Participants chose their plant tissue, and got to work.

The small, enclosed work places were built to achieve an area free of air movement and contamination. All items that came in contact with the plant tissue, as well as the plant tissue itself were disinfected. Hands were sprayed down with alcohol prior to each procedure in the work area. Fungus and bacteria are the enemy of tissue culture, aseptic technique is the skill needed. Not hard, just thoughtful and careful. My hands as well as my head were full as I headed home with 8 tissue cultures! They are now residing under my basement grow lights, a full month prior to my usual plant starting time. Gardening with clean fingernails! I think I've found a new winter sport. Yippee! Spring is here!

Carol offers workshops frequently, and her enthusiasm is catching. Her business is called Kitchen Culture Educational Technologies inc., websites are <http://www.hometissueculture.org> and <http://www.kitchencultureeducation.org>.



***Sarcochilus* Elizabeth 'On Forever'**

Much magnified, orchid flower 1 cm across  
Photo by Arthur Sale

## A Fun Way to Grow Your Favorite Plants

*Toni Annable, Texas, USA*

Grow those baby plants you love right in your own kitchen. You can do it! Easy! Fun! Year round!

“Plant tissue culture is not just for scientists,” says Carol Stiff, Executive Director of Kitchen Culture Education Technologies (KCET). “Any plant lover can do it. It’s easy, fun and rewarding. And not expensive, either.”

KCET with its sister organization, Home Tissue Culture Group (HTCG), a division of KCET, is a 501(c)(3) non-profit dedicated to teaching hobbyist, nurserymen, Master Gardeners and students how to tissue culture their favorite plants, endangered plants, wild and rare plants for fun or profit.

At home, in the classroom, in the greenhouse, anyone can learn how to grow hundreds of plants from leaves, stems, roots and seeds. Think orchids are too hard to grow? Think again. How about your favorite African violet? Bromeliad? Begonia? Almost any plant you want to try can be done and you can do it.

“Most people think of tissue culture as a massive undertaking with huge, expensive laminar flow hoods, hemostats, Petri dishes, PhDs and such. In fact a baby food jar, a plastic bag, some cheap media and a light bulb are just about all you need,” says Stiff.



KCET and HTCG offer online information, DVDs, start-up kits, media and supplies at excellent prices. And members get special discounts, too. Supplies can be purchased at [www.hometissueculture.org](http://www.hometissueculture.org) You can join at [www.kitchencultureEducation.org](http://www.kitchencultureEducation.org)

Members will learn how to use inexpensive equipment and media, such as baby food jars, plastic containers and liquid fertilizer, to tissue culture plants. Don't believe it? Try it! With the easy instructions, explicit DVD demonstrations and manual you will soon be watching those little green shoots popping up by the hundreds.

Are you a teacher or a member of a local community group? Learn how to do this from the experts and how to hold workshops in your own classroom or meeting room. The HTCG specializes in “teaching the teachers” as well as the student. Regional workshops

are being scheduled in 2009 in the U.S. and overseas: [www.hometissueculture.org](http://www.hometissueculture.org) . Contact us if you would like one near you.

Teaching workshops is one of the biggest outreach programs of KCET/HTCG, which is supported by memberships, sales, grants and tax-deductible donations. They specialize in teaching the teachers, who then go out and teach others.

**You can join this important organization easily at [www.hometissueculture.org](http://www.hometissueculture.org) Become a member. Join now.**



## Acclimating Plants in the Home or School

*Ernie Barker, USA*

Let me start by introducing myself. I'm Ernie Barker and I've been growing plants since I was 13. I've also been doing tissue culture in the home environment since age 19. I graduated in 1989 with 2 years of Horticulture from the local JVC. I've been growing plants it seems all of my life as we gardened (food crops) since I was a small boy. I've worked in local green houses and owned a small but profitable landscape greenhouse operation. It went under in 2007 due to the economy.

What I'm going to discuss in this article is a means to acclimate plants grown *in vitro* to the real world environment. Acclimation can be one of the more difficult parts of the tissue culture process. Two things are the key factors. One is keeping the humidity high after removal from the culture media. The second is keeping the plants moist but not dripping wet. In the home or class room the temperature is usually within 60°F to 70°F (15–21°C) so there should not be a problem there. I will explain two different methods as I know budgets can be tight.

### **Method 1 materials list**

- 10 to 20 gallon fish tank
- 10 to 20 gallon fish tank under gravel filter
- Large bag of play sand used for children's sand boxes
- Box of fish tank charcoal
- Fish tank air pump
- 20' (feet) of fish tank air hose / tubing (=6m)
- 3-4 bricks
- Air hose splitter (ask at the pet shop)
- Two under water air diffuser cartridges (air stones)
- Small roll of cotton quilt batting. (Wal-Mart, Jo-Anne Fabrics)
- Piece of plastic or Plexiglas cut to fit the tank

To assemble place the bricks in the bottom of the fish tank evenly spaced. If you are using a 20 gallon tank you will need 4 bricks to balance the under gravel filter.

Place the assembly under gravel filter, then place it on the bricks and check to make sure it is balanced. It will shift later if it isn't.

Assemble the air hose/ tubing to the air pump. Cut it about 6' (=1.8m) in length. Attach to the end of the splitter. Cut the other piece of tubing in half and assemble to the splitter. Attach the air stones and push into the bottom of the tank. About 1/3 of the tank length is good. This keeps the water aerated, fresh and circulating.

Place the quilt batting as evenly layered as you can across the filter. If you buy the roll instead of the bag it will be easier. Make sure to push the quilt batting down into the gaps between the walls of the tank and the under gravel filter. This will keep the sand and charcoal in place and out of the water. The quilt batting acts as a wick, pulling up moisture, plant food and hormones if you have added them.

Place the fish tank charcoal evenly over the quilt batting. You will need half of the box for a 10 gallon tank. Add the entire box for a 20 gallon tank. Charcoal helps to keep the sand and water sweet and not acidic from the plant food/hormones in the water. It will also help filter out toxins from tap water.

Place about 4" inches of sand on the char coal and even out. Fill the tank with water and 1/4 strength fertilizer just to the bottom of the filter. Place the plastic or Plexiglas on top of the tank and plug in the air pump.

Let this stand for 24 hours before adding plants. If you use tap water and not distilled, this step lets the chlorine in the water dissipate. You will need to top up the water about every 30 days once the plastic or Plexiglas is removed.

When adding plants make sure all of the gelling agent and nutrients are rinsed thoroughly from them. Once the plants are added to the tank you can open a gap about 1" (inch) every 3 to 5 days. Once the top is opened about 3/4's you can place the plants in 4" pots and stand them on the sand in the tank after watering them in. Leave them for a week and then place in the home or send them home with the students if you are teaching.

#### Method 2 materials list

- 2 liter bottle/plant
- 4" plant pot/plant
- Small bag of sterile seedling mix (amounts will vary per bag size)
- Saucer, plate or 9" (20 cm) square baking pan
- Bag of fish tank gravel or sand (amounts will vary per bag size)

Fill the plant pot to 1/2" of the rim and water in. Plant your rooted plantlet in to the seedling mix. Water in and set to the side.

Fill the saucer with gravel and place the plant pot on the gravel. Water in the gravel but don't let the pot stand in the water. If you are using the 9" square baking pan, level about 1" of gravel in the bottom and place the plant pot on this and water in the gravel. Keep water just below the top of the gravel.

Cut the bottoms off of the 2 liter bottles and discard them, or use them in place of the saucers. Place the 2 liter bottle over the plant pot with the lid tightened. In 3-5 days remove the lid. Wait 3-5 days and cut 2 "V" grooves in the bottom of the bottle. Repeat every 3-5 days. In 3 weeks you can remove the bottle. Remember to keep water in the saucer or the baking pan even after you remove the bottle. Wait for one week and move the plant to its new home.

While method 2 may appear easier, you will need to top off the water more frequently. Don't let the plants dry out. Keep them evenly moist and don't let them stand in water. These 2 methods work the best in the home or class room. They are very in-expensive and easily implemented. Both of these methods are good for just rooting cuttings also. Whichever method you use..... Happy Culturing ..... I wish you the best.

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#### ***Strelitzia reginae***

Bird of Paradise flower

Photo by Arthur Sale



## Vinoxide-HTC

Arthur Sale, Tasmania, Australia

Vinoxide-HTC is a home-brew disinfectant invented by Gregorio Placeres, on the Home Tissue Culture Group (HTCG) Yahoo list. There is a more extensive description of Vinoxide-HTC in the files section of the HTCG, or publicly at the open access URL <http://ahjs.biz/pdfs/Vinoxide-HTC.pdf>. This covers how to make it, what its active components are, and basic use, safety and disposal issues. If you are interested in a more powerful disinfectant than bleach, retrieve this file and read it carefully.

In earlier posts to the *hometissueculture* list, Vinoxide-HTC was called AAHPPAA (Acetic Acid, Hydrogen Peroxide, and Peracetic Acid). This name is now obsolete, but can still be found in old posts and on the Web. The disinfectant should not be called *vinoxide* (by itself) since this is used for an unrelated chemical radical, and also a company.

Vinoxide-HTC is a replacement for bleach-based disinfectants or hydrogen peroxide, but care needs to be exercised in its use. It may be too strong in its original formulation and may damage the explant's cells or seeds. To date its main use has been in rescuing contaminated explants or seeds, but it should have wider uses if diluted.



**Gregorio Placeres**

To explain the situation, an analogy might be useful. A 10% bleach solution may be likened to an army in which each soldier is armed with a shotgun or a handgun. Such an army can do a lot of damage, but some things will be beyond it, like reducing a defensive trench or a castle. Hydrogen peroxide is a stronger oxidant, and at 3% you can imagine it as a smaller army, but armed with accurate rifles. HP can kill bacterial and fungal cells by destroying their walls and by slipping inside to attack the interior (since hydrogen peroxide has just one more oxygen atom than water, its molecules aren't very big). Vinoxide-HTC contains a small amount of peracetic acid (0.15%) which is an even stronger oxidant. Think of this as the smaller rifle-equipped army, but with a few pieces of field artillery capable of breaking strong walls. Once the walls are down, the rest of the army can get in and clean up. The analogy shouldn't be taken too far, though peracetic acid does successfully attack the strong defenses of bacterial and fungal spores.

It would be highly desirable for researchers to do comparative tests between hydrogen peroxide and Vinoxide-HTC. Both work by general oxidation attack. The present evidence strongly suggests Vinoxide-HTC is effective, but there is no peer-reviewed research to back up the anecdotal evidence.

# Information for Contributors

Arthur Sale, co-editor HTCG Newsletter, © Copyright 2011 HTCG

## **All contributions welcome**

The HTCG Newsletter welcomes all contributions related to plant tissue culture. These may be in the form of a text article (with or without images), an image with caption, a block of images with captions perhaps illustrating a workshop, a link to a video with brief content description, etc. Article length should be limited to 2,000 word or less. Larger articles may be serialized. Short contributions that we can use to fill gaps in the pages are very welcome.

The subject matter may be a protocol for home plant TC, illustrations of TC, instructions for building equipment, technical information about active chemicals, plant propagation, workshop activities, teaching at school level or even up to university level, sources of difficult-to-find items, syllabuses involving plant TC, etc. Letters to the Editor and responses are welcome too. Basically the contribution should interest a number of members and be less ephemeral than a post on the listserv.

## **Where do I send it?**

Send the file or group of files [htcgsubmissions@hometissueculture.org](mailto:htcgsubmissions@hometissueculture.org) . You will receive an acknowledgment from the submissions editor (Toni Annable) and be asked to complete and return a simple copyright license to publish (for legal reasons). The contribution may appear in the next issue of the Newsletter or be held over to a subsequent issue. Rarely, a contribution might be declined if it does not fit our aims or might be considered offensive.

You may be asked to make changes to the contribution, such as shortening it or giving more data. The editors may also make some changes to the English of the contribution for consistency, legibility or to fit in an available space; or resize or omit an image.

## **How should I prepare my contribution?**

We can probably handle almost anything you produce, but the easiest is to prepare and send a text article using *MS Word* or *OpenOffice*. We can edit these easily, and they show your layout intent. Use a single column and insert images where you want them. The Newsletter uses a 10-point sans-serif font (like this sheet) so it is a good idea for you to prepare the article the same way (so you can see what it looks like). Arial, Helvetica and Calibri are suitable fonts.

Images can be sent in almost any format, but those used on the Web are preferred: JPG (or JPEG) and PNG. Bit-mapped images such as TIF and BMP tend to be huge and will have to be converted. If you reduced an image to put in an article, please send us the unreduced version as well. Images should be captioned and credited.

It is a good idea to use a consistent naming scheme for your files, using your name or initials, for example SmithPalmArticle.doc, SmithPalmFig1.png, etc. The submissions editor has to handle a lot of files!

## **Other matters**

The Newsletter is intended to be read online, not printed. Please feel free to include hyperlinks in your article, for example [Newsletter #1](#), or 'Newsletter #2 at <http://www.hometissueculture.org/Newsletters.htm> ' if the link is really, really important and must be visible (and not too long). Hyperlinks might point to references or MSDSs, or images or videos elsewhere.

Images cost us nothing except disk space and download time, so give some thought as to whether your contribution could use a couple of good images. You might be interested in the history of a common phrase: <http://www.phrases.org.uk/meanings/a-picture-is-worth-a-thousand-words.html>.

Because some people do want to print the Newsletter and read it off-screen, we will be producing it in a paginated form using the *pdf* format rather than producing an *html* (web) document. Anyone can read the *pdf* format using the free Adobe Reader. Off-line readers won't have access to underlying hyperlinks, of course.

We discourage printing unless necessary, because it consumes trees and adds to the CO<sub>2</sub> load of the planet. However we recognize that some people prefer printed text. All the newsletters will also be archived on the HTCG web site, so nobody need keep a folder of the old newsletters printed. They will be available to consult for as long as the HTCG exists.

Please be courteous and kind to all our volunteers who produce the Newsletter. They are giving their time and effort for free. Above all, please give us your contribution, if not now, then in the future when your project comes to the right point. Anyone's contribution is valuable, newbies included lest we forget. With best wishes from all the HTCG Newsletter team.

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## **Disclaimer**

The staff has made every effort to assure that credit is given in each article. If the reader has noted any omissions, kindly notify us and we will make appropriate correction. Copyrights belong to the authors of all articles and they should be contacted individually for any reprints, permissions or rights. The views expressed in the articles do not necessarily reflect the views of the Newsletter, nor of the Home Tissue Culture Group and Kitchen Culture Education Technologies.

## **Editorial Board**

The Editorial Board consists of Carol M Stiff (chief editor), Arthur Sale (co-editor and designer) and Toni Annable (submissions editor). The following people are roving editors recruiting articles and consulted on major decisions: Kent Fenley, Chris Guppenberger, Robert Pfohl, Frank Tromble, Robert Valiquette, and Terry Vanderwende. The editors welcome any articles for publication whether short or long, even just interesting pictures or Letters to the Editor.

Submissions should be emailed to [htcgsubmissions@hometissueculture.org](mailto:htcgsubmissions@hometissueculture.org).

## **Publication Information**

The **Home Tissue Culture Group** is a subsidiary of **Kitchen Culture Education Technologies Inc.**, Web [www.KitchenCultureEducation.org](http://www.KitchenCultureEducation.org), contactable at Email [carol@KitchenCultureEducation.org](mailto:carol@KitchenCultureEducation.org), 608-302-2750, Fax 360-882-2089, EIN 26-0617532. 501(c)(3) Tax Exempt—Public Charity 170(b)(1)(A)(vi).