

ALASKA PIONEER FRUIT GROWERS NEWSLETTER

Winter 2007

Volume 22, Number 1

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Association News

THE FEBRUARY MEETING WILL BE AT THE BP ENERGY CENTER ON FEBRUARY 8, 2007 STARTING AT 6:30 PM.

Directions: If northbound on the New Seward Hwy. turn right into BP's southwest entrance. Turn right at the first stop sign into the BP Energy Center parking lot. Follow the footpath through the woods to the building entrance. If eastbound on Benson Blvd. turn right into BP's main entrance. Turn right and follow the access road to the 4-way stop. Continue through the intersection into the BP Energy Center parking lot.

Elections carried unanimously at the January meeting to retain all board members for another year: Pat Mulligan is President, Dan Elliot is V.P. Alice Brewer is Treasurer. Gary Masog is Web Master, and yours truly, Tami Schlies is Editor. Our success as a club depends upon the membership, and I want to thank everyone who participates, from hosting orchard tours to contributing newsletter ideas to even just attending the meetings regularly. We are a small club – less than 100 members – so every effort counts.

Pat is in need of some fresh ideas for both meeting topics and orchard tour sites this year. Please contact him at 745-2043 with suggestions. Anyone outside the city or the valley willing to give us a

tour? We have members from Homer to Fairbanks and everywhere in between.

One member I spoke to recently has been spending time chasing porcupines out of his orchard. We get all kinds of advise on moose prevention, vole and rabbit prevention, bug prevention ... anyone out there have a good idea for porcupine prevention?

Canadian Cherries and Honeyberries

We still have Cherries and Honeyberries available. If you still want to get some of these you need to contact Kevin at sun-dog@alaska.com or 907-257-6510.

We will open requests to more than the initial 2 per variety limit on the Cherries and 1 per variety of the Honeyberries on 8 February 2007. This is a first come basis for members but we feel it would not be fair to other members should someone want the whole lot, therefore we will limit requests to 5-10 of the Cherries and 5 of the Honeyberries through Mid March. The board will then set a price and open any leftovers for sale to the public as a money making endeavor for the Club and offer them through the Master Gardeners or other Gardening clubs and / or sell them at the Grafting workshop depending on what we have available

No money is required to reserve these as we don't know what the shipping costs will be for sure.

ALASKA PIONEER FRUIT GROWERS ASSOCIATION

Membership Application or Renewal

Name: _____ Date: _____
Address: _____ Phone (hm) _____
City: _____ State: _____ Zip: _____ Phone (wk) _____
E-Mail address: _____
New: _____ Renewal: _____ If renewal, year you first joined, (Approx. OK): _____

Dues are \$16.00 per calendar year (or prorated at \$8.00 for last half of year for new memberships) payable by the 1st of March. Please make your check payable to Alaska Pioneer Fruit Growers Assn. Mail to Alice Brewer, 1201 W. 45th Anchorage, AK. 99503. 907-563-6734, or bring your dues with this form to the next meeting. President Pat Mulligan 745-2043

Please list your primary fruit growing interests (Please specify):

Small fruits: _____

Tree fruits: _____

Bush fruits: _____

Please list your producing trees / bushes: _____
(Please use back of this sheet if you need additional space)

How old are your trees? _____ What is the rootstock? if known _____

What is their physical location: _____
(for historical tracking purposes)

Do you consider yourself a: Hobbyist? _____ Nurseryman? _____ Other? _____

Purpose and Goals: The Alaska Pioneer Fruit Growers Assn. was founded in January 1985. Our purpose is to share in and benefit from the personal experience of successful fruit growing in Alaska and to help educate anyone interested in the fruit growing experience. Our goals include locating, testing and preserving superior or special fruit, berry and nut varieties relevant to Alaska, identifying unique cultural methods / materials, propagation techniques, fruit breeding and grafting procedures, adaptation of species and cultivars and all other aspects of fruit growing. Other goals include evaluating various fruit cultivars for hardiness, instructions to members and educating anyone interested in fruit growing techniques and cultural practices, exchange of information, group ordering of materials, promoting communication and friendship between members, other enthusiasts and encouraging friends and neighbors to establish their own fruit trees, bushes and shrubs. The Association also seeks to help the Cooperative Extension Service to the extent possible. We seek to publish at least a Tri-annual newsletter containing articles on fruit growing in Alaska.

Our monthly meetings are held on the second Thursday of the month. Our Spring, Summer and Fall meetings are for our annual grafting workshop, orchard visits and Apple tasting, with time and place varying. We have members scattered from Ketchikan to Fairbanks, Homer to Haines and into Canada and the Pacific Northwest.

The North American Fruit Explorers (NAFEX) is a National organization which publishes a quarterly journal called The Pomona; holds an annual convention and has a library of horticulture reference materials available to members for low rental costs. NAFEX also has a network of head testers for both the major and minor fruits and nuts. To join the national organization write to: NAFEX: Route 1, Box 94; Chapin, IL. 62628.

Raspberry Production in South-Central Alaska

We've been growing raspberries organically for at least 10 years and now have about 600 feet of raspberry row. Here are some lessons learned.

Raspberry basics

Raspberry roots live for many years, but the canes themselves are on a two-year life cycle. During year one, a new cane will sprout from the crown of the mother plant and grow in one year to as tall as 8 feet. This is called the primocane. During year two, last year's primocane becomes this year's floricanes. It produces side branches on which the berries form. Then, in the fall or early winter of year two, the floricanes die.

Raspberries spread (and propagate) by rhizomes, from which new canes will sprout, usually a few feet from the mother plant but occasionally farther out.

Fatter canes tend to have bigger berries. Also, the higher up the plant, the smaller the berry. These facts are behind the recommendations on thinning and topping, below.

In Peters Creek, the first berries are usually ripe in late July to early August. The height of the season comes quickly, about two weeks after the first berries. Fruit production then tapers off, but continues until a succession of killing frosts in late September or October.

Row spacing

We have no shortage of land. So, when we put in the berry patch (behind 8-foot fencing, to keep out moose and llamas) we decided to space the rows a comfortable distance apart—10 feet on centers, or eight feet between trellis wires. This was meant to be wide enough to drive our tractor between the rows so that (1) we could spread an annual dose of composted manure, and (2) cultivate with a disc

harrow. In hindsight, the disc harrow was not the right tool for this job because over time, it gradually moved soil from the walkways into the rows, until after a few years, the discs would no longer even touch the ground in the middles of the walkways. If we were to do it over again, we'd space the rows 7 feet on center. Anything less will be too crowded during picking season, when wet, thickly vegetated canes lean into the walkways.

Plant spacing

Both in Alaska and the lower 48, the standard practice is to grow raspberries as one would a hedge—thickly spaced. To us, it makes more sense to treat them like grape vines in a vineyard: individual, well-spaced plants, which all happen to share the same wire trellis for support.

When we planted our berry patch, we followed instructions from somewhere in the Lower 48, planting our rows 2 feet wide. After a couple of years, the original plants had spread nicely and we were thinning them down to two or three floricanes per foot of row. This turned out to be way too dense. We now think that the optimum spacing is one robust floricanes per two feet of row, so that each floricanes has plenty of elbow room. (For Fallgold, which has a three-foot diameter, use a three-foot spacing.) More about this under "Rain and mold", below. As for the width of the row, two feet is too much. If we were to start over, we'd go with 12 to 16 inches. Two feet is so wide that it gets to be a jungle, and many berries are lost in the middle, falling ripe to the ground or molding before ever being noticed. Also, two feet of row means two feet of weeds.

Pruning and Training

A well-kept Alaskan raspberry patch needs to be pruned several times a year.

Mid to late May. As the snow leaves, there will be two types of canes: last year's dead canes and the current year's floricanes; new primocanes will soon be poking up but are not yet visible. Remove any dead canes that fruited last year. These are pretty easy to spot because there have side branches, often with shriveled berries. Don't remove any of the new year's floricanes except those that are obviously broken beyond healing. Some canes may need to be picked up and tied to the trellis wires. Sometimes it takes longer for some canes to leaf out than others, so the best bet is to wait awhile before deciding what's dead and what's alive. Also, the higher buds on a cane will leaf out later, so don't prune off any "dead" tips prematurely.

Late June to early July. Now is the time to thin the floricanes to 2-foot spacing in the row, and to take out any that turned out to be dead. Also, by now there will be many new entirely green primocanes that might be anywhere from a few inches to a few feet tall. Select a few nice fat ones about a foot apart, and cut the rest out. By now the weeds (especially nettles, lamb's quarters, and various grasses) will be a couple of feet tall and we usually do battle with them at this point. We use long-bladed hand shears for pruning and weeding because they are strong enough for even the toughest canes, and will efficiently handle big handfuls of grass and weeds.

Early August. A third pruning is called for about when the first berries are getting ripe. Some floricanes will tend to lean out into the walkways or parallel to the trellis wires, and these need to be set upright and tied (with a bag-tie or flagging tape) to the trellis wires. Use the long-bladed hand shears on any tall weeds and any new primocanes that are more closely spaced than one foot. This is important, as a lush wall of primocanes will completely block air circulation and this is key to mold

control (see below). Also, top all primocanes 4 to 5 feet off the ground. This will make them put more energy into thickening and less into growing taller. Tall canes are more likely to be badly bent or broken by the snow.

Late September to early October. After the killing frost, cut out all spent floricanes. If any were missed in August, top primocanes at 4-5 feet. Burn, chip, or compost all prunings.

Mid October or later. In early winter, there is a real danger of early snow or ice storms that will destroy what are due to be floricanes next year. The best defense is to make sure that all the green leaves are off, so that the canes won't be so badly weighed down. Leaves come off best when they're frozen, below 20°F or so.

Throughout the growing season, another thing that is always an issue is encroachment into the walkways. New primocanes will constantly be sprouting in the walkways. Usually there will be really nice thick ones that come up just outside the trellis wire. Be ruthless and keep the walkways mowed and clear of all primocanes, even the big ones that just miss being in the rows. The one exception is that if you foresee a need for some new plants, you can leave some in the walkways that will be dug up next spring.

Trellising

We use a trellising system resembling a line of short telephone poles, with two cross boards on each pole, and two wires on each side. Six-foot treated fence posts (5-6" diameter) are buried 2 feet. The end posts need to be braced to prevent tipping, which will happen over the years from the tug of the wires. The posts are spaced about every 20' in the row. Two feet and four feet off the ground, 2" by 4" cross boards are spiked into each fence post. Steel cable (about 1/8") is tightly strung along the ends of these cross boards. The

length of each cross board will dictate the width of the raspberry row. As mentioned above, our rows are 24 inches wide and this is too much: 12 to 16 inches would be better.

Cultivation

We gave up cultivating years ago after the problem with disking. Now the walkways are in grass which is kept down to the extent possible with mulch of straw, wood chips, and chipped raspberry canes. The ground is level and smooth enough to mow but the grass does get pretty tall sometimes, being low on our priority list. We weed by hand among the canes in July, but never very thoroughly. Also, we have a mower-style weed whacker.

Fertilization

One shovelful of composted horse manure per foot of row, every spring. If we had more time to do the work, we'd double the dose. Raspberries love nitrogen. In fact, the reason they send out rhizomes is because they quickly deplete the soil near the mother plant. To keep the plants happy in their rows, they need annual feeding.

Picking

We pick into green plastic one-pint mesh containers that we bought in a batch of 1000 from a supplier in the Lower 48. At the height of the season, rows need picking every two days. During the peak, a person can pick a pint of Canbys in a couple of minutes. This year we picked 60 pints in a single weekend.

Rain and mold

Every year, around the start of picking season, the rains begin and the temperature drops into the 60s and then 50s. Perfect weather for the mold *Botrytis*. The mold attacks ripe berries, unripe berries, flower buds, leaves and twigs. Some berries (for example Canby and Fallgold) will taste horrible when first infected, before they show any outward

sign beyond a certain damp softness that one quickly learns to recognize by feel.

There are two common-sense remedies. The first is to pick off any moldy berries. In this it pays to be assiduous, because one moldy berry high up will shed millions of spores that can and will land on anything nearby or below.

The second remedy involves very thorough pruning to ensure that lots of air can flow all around each plant. This is the main reason behind the drastic pruning recommendations given above. Rain and mold can be a real problem at picking time. The rain makes it unpleasant to pick, so ripe berries sit there and then get moldy. The moldy berries make it even more unpleasant to pick, so they sit there and shed millions of spores that infect more berries.

Cultivars

Red raspberries:

Canby. This is by far the best. Big, thornless, sweet, tasty, good keeper, productive, vigorous, hardy. In 2006 it was still yielding a few sweet, reasonably large berries as late as Oct. 10, a couple of weeks after a killing frost.

Killarney and Boyne. Good commercial types for the Lower 48 but not as good here as Canby. In Peters Creek, they tend to be more tart than Canby, and not quite as prolific. Both are hardy. Killarney bears well into the fall, while Boyne plays out a bit sooner. Killarney once won us a Grand Champion ribbon at the Alaska State Fair.

Purple raspberries:

Royalty. A cross between red raspberry and black raspberry, though not as good as either. I appear to be the only Bradley who cares much for the taste. Prolific and much loved by yellow jackets, who will mar each berry. Supposedly not too hardy

but ours have been thriving for six years or so.

Yellow raspberries:

Fallgold. Vigorous, heavy bearing. The fruiting season doesn't end until winter sets in. Some people (myself included) like them quite a lot, though most prefer red varieties. The fruit forms on long side branches, so the fruiting bush has a 3-foot "footprint". (The red varieties have diameters closer to 2 feet.

Propagation

As noted above, raspberries spread by sending up new canes from rhizomes that spread underground from the mother plant. Raspberry plants are easily propagated in the spring when the soil has thawed, but before much new growth has started. It is far better to dig up a floricanne that started the previous summer than a new, tender green primocane.

Raspberries also propagate by seed but they cannot be relied on to come true to seed, so this technique is only used in breeding new varieties.

Homemade EarthBoxes™

At the January meeting I showed members how to construct a self watering planter similar to those sold under the name EarthBox™. Here is the information from the website I learned the technique from, as well as photos from the January meeting. (Edited from www.josho.com/Earthbox.htm)

Here's how to make a homemade EarthBox™ in about 15 minutes, and for about \$12 (instead of the \$35.00-plus-shipping that the genuine article costs).

MATERIALS:

- 2 18-gallon (or similar) tote boxes with lids, such as Rubbermaid. Dark colors are preferable. Also, a box that is somewhat wider is preferable to one that's deeper. (You can also use larger totes, but note that once you fill them with soil, they'll be very hard to move.) The more straight-sided the box, the better.
- 1 5" pond basket (these are plastic planters with perforated sides to allow the free flow of water)
- 1 2-foot length of 1-1/2" plastic pipe or tubing (1-1/2" should be the outside diameter) with one end cut at an angle.
- 1 3 X 3 piece of dark plastic sheeting – I used red tomato mulch, but IRT mulch or black plastic should work just as well.

EQUIPMENT:

- a pencil or pen
- a drill with a 1/4" or larger bit and a 1-1/2" bit
- a saw or dremel (handsaw will work, but a jigsaw makes it much easier)

STEP 1

Take one of the totes, the pen/pencil, and the pond basket. Mark the HEIGHT of the basket all around the outside of the bottom of the tote.

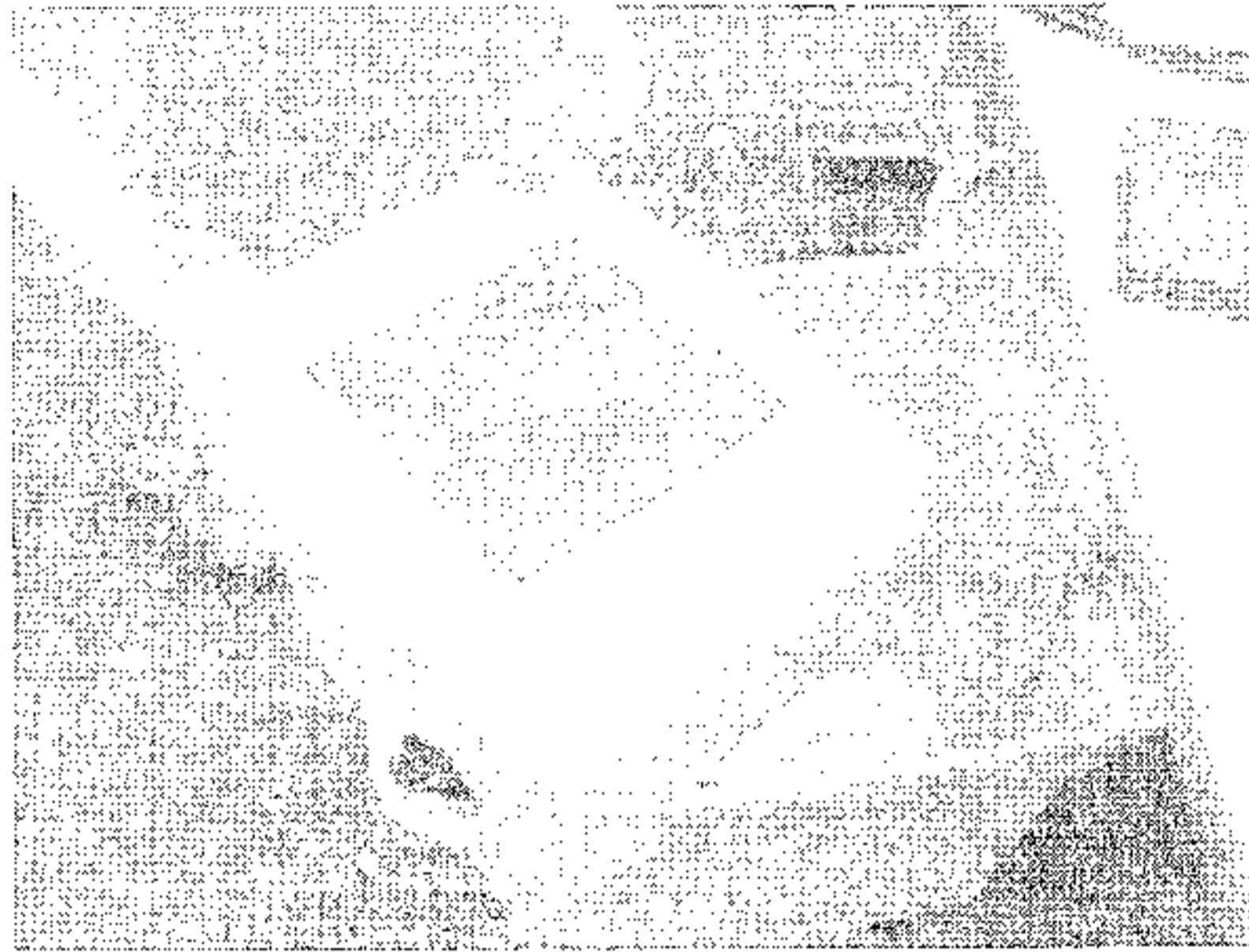
STEP 2

Cut along this line. When you've cut the entire box, discard the top (open) half; you won't need it (unless you

are thrifty... You could bury it to contain wandering plants in the garden).

STEP 3

Turn the bottom portion upside down. Take the pond basket, put it upside-down on top of the bottom portion of the tote, and trace it. Cut the shape out. *but you're going to cut about a half-inch or more INSIDE* the line (so that this hole is about an inch smaller in diameter than the top of the pond basket). After you've done this, drill a 1-1/2" hole in the corner of the tote bottom, and a lot of small (1/4" or so) holes all over it. We'll call this piece the "base."



STEP 4

Take the pond basket and put it up-side down inside the base directly under the big hole. I use zip ties to secure it over the hole.

STEP 5

Put the base in the tote box (drilled side up, pond basket down), wedging it down as far as it will go. Because the big hole in the base is smaller in diameter than the top of the pond basket, the pond basket will help support the weight of the base once the soil is on top. And because the pond basket will be filled with soil, it will act as a wick for the moisture (much like the square wicks in opposing corners in the authentic EarthBox(TM)).



STEP 6

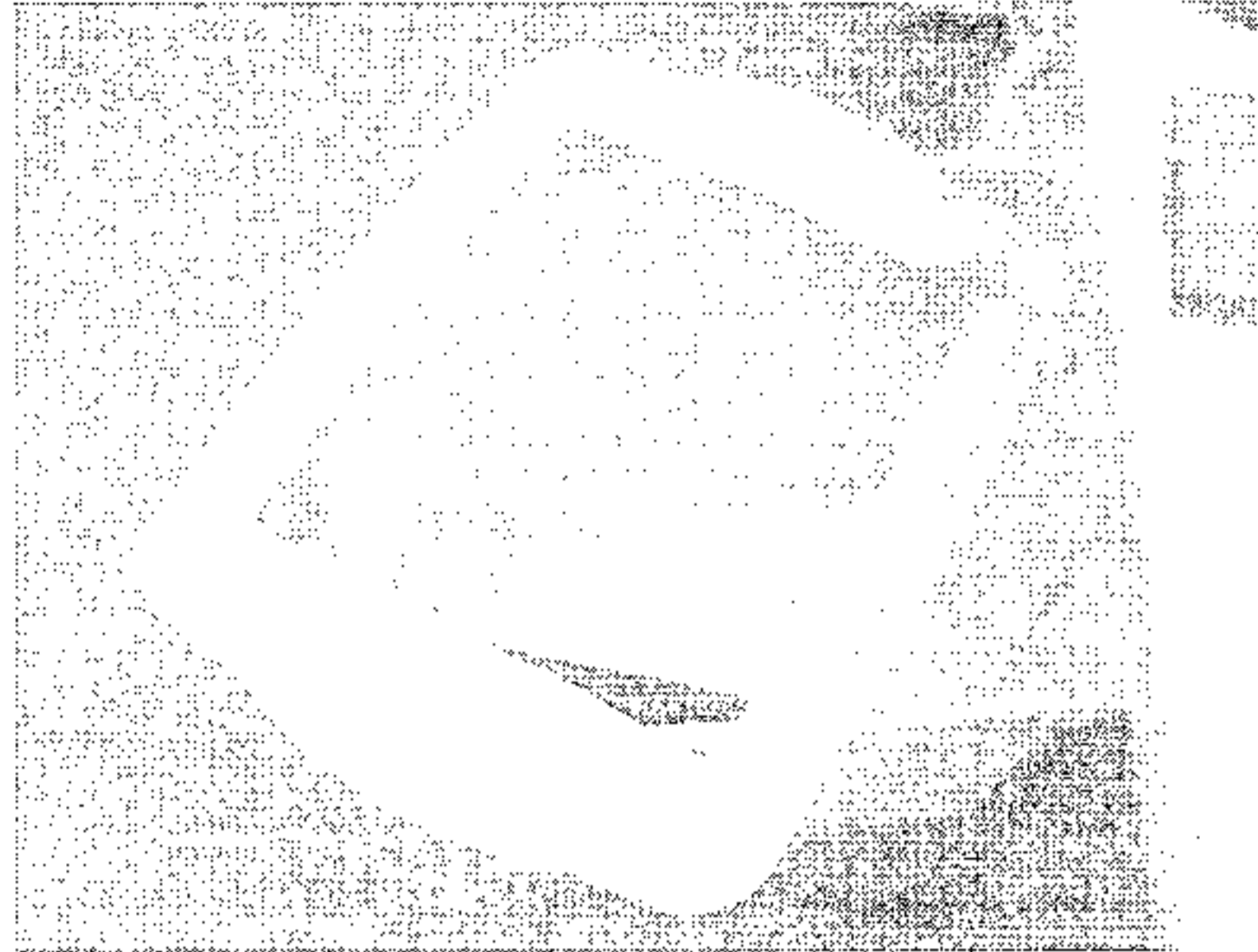
Drill a 1/4" (or slightly larger) hole straight through the outer box *AND* the base just below the level of the base. This is the drainage hole.

STEP 7

Cut the end of the 2-foot length of 1-1/2" pipe at an angle (if you haven't done so already) and feed this angled end into the 1-1/2" hole in the base. This is the pipe you'll use to fill the box with water.

STEP 8

Take the lid that fits onto the box. Cut out the center of the lid, leaving just a rim (about 2" worth), enough to snap back onto the box. (You can discard the center piece, we won't be using it.) I cut a circular area in one corner for the pipe. This is not strictly necessary. I do it so that I can have the pipe all the way in the corner, leaving more room for plants.



STEP 9

Now cut a piece of plastic sheeting so that it is at least a couple of inches bigger around than the top of your faux EarthBox(TM). Cut a hole in it for the pipe to fit through. Snap the rim onto the box. When you're ready to plant, cut "X"s in the tarp where the plants will go. (This is very much like how the real EarthBox(TM) tops work.)



The honeyberries and cherry stock Kevin ordered from DNA gardens have been virus indexed, meaning certified virus free, for shipment into the U.S.A. In order to be virus indexed, plants are propagated via plant tissue culture, which is a very expensive process. I thought some of you might be interested to know exactly what plant tissue culture entails:

Micropropagation / Plant Tissue Culture

From Wikipedia, the free encyclopedia

In vitro culture of plants in a controlled, sterile environment, micropropagation is the practice of rapidly multiplying stock plant material to produce a large number of progeny plants, using modern plant tissue culture methods.

Micropropagation is used to multiply novel plants, such as those that have been genetically modified or bred through conventional plant breeding methods. It is also used to provide a sufficient number of plantlets for planting from a stock plant which does not produce seeds, or does not respond well to vegetative propagation.

Establishment

Micropropagation begins with the collection of a sterile explant(s). This small portion of plant tissue, which may be as small as a cell, is placed on a growth medium, typically a medium containing sucrose as an energy source and one or more plant growth regulators (plant hormones). Usually the medium is thickened with Agar to create a gel which supports the explant during growth.

The plant tissue should now begin to grow and differentiate into new tissues. For example, media containing cytokinin are used to create branched shoots from plant buds.

Multiplication

Following the successful growth of plant tissue, the

establishment stage may be repeated, by taking tissue samples from the plantlets produced in the first stage. Through repeated cycles of this process, a single cell sample may be magnified to hundreds or thousands of plants.

Pre-transplant

This stage involves treating the plantlets/shoots produced to encourage root growth and "hardening". It is performed *in vitro*, or in a sterile "test tube" environment.

Root growth does not always occur in the earlier stages in plant cell culture, and is of course a requirement for successful plant growth after the micropropagation procedure. It is performed *in vitro* by transferring the plantlets to a growth medium containing auxin(s).

"Hardening" refers to the preparation of the plants for a natural growth environment. Until this stage, the plantlets have been grown in "ideal" conditions, designed to encourage rapid growth. Due to lack of necessity, the plants are likely to be highly susceptible to disease and will be inefficient in their use of water and energy.

Hardening typically involves slowly weaning the plantlets from a high-humidity, low light, warm environment to what would be considered a normal

growth environment for the species in question.

This stage (pre-transplant) is not always performed, instead being incorporated into the last stage by encouraging root growth and hardening *ex vitro*, or in non-sterile plant media.

Transfer from Culture

In the final stage of plant micropropagation, the plantlets are removed from the plant media and transferred to soil or (more commonly) potting compost for continued growth by conventional methods.

This stage is often combined with the "Pre-transplant" stage.

Advantages of Micropropagation

Micropropagation has a number of advantages over traditional plant propagation techniques:

- ♣ Micropropagation produces disease-free plants
- ♣ Micropropagation produces rooted plantlets ready for growth, rather than seeds or cuttings
- ♣ It has an extraordinarily high fecundity, producing thousands of propagules in the same time it would take a conventional technique to produce tens or hundreds
- ♣ It is the only viable method of regenerating genetically modified cells or cells after protoplast fusion

- ♣ It is a good way of multiplying plants which produce seeds in uneconomical amounts (if at all)
- ♣ Micropropagation often produces more robust plants, leading to accelerated growth compared to similar plants produced by conventional methods

Disadvantages of Micropropagation

Micropropagation may appear to be the perfect means of multiplying plants, but it has associated problems:

- ♣ It is *very* expensive, and can have a labor cost of more than 70%
- ♣ An infected plant sample can produce infected progeny. This is uncommon, as stocks are usually carefully vetted to prevent this

The greatest limitation is the cost. Most plants will naturally produce seeds, which are normally disease free and will readily grow under good conditions. The number of seeds varies, but is normally acceptable for multiplication and is free. For this reason, many plant breeders will never resort to micropropagation because of the prohibitive cost. Mechanization of the process would eliminate most of the labor cost associated, but this has proven difficult so far, despite active attempts to develop this technology.

Grammy Nedra's Carrot Cake

This is a really great cake made with our sweet Alaskan carrots. The recipe was requested by several people at one of our fall meetings after sampling some mini-cupcakes.

CAKE

Grease a large bundt pan & preheat oven to 325 F.

In a large mixing bowl cream:

2 c. of sugar

1 ½ c. canola oil

4 eggs.

In another bowl mix together:

2 c. flour

2 t. baking powder

2 t. baking soda

1 t. salt

2 t. cinnamon

Add dry ingredients to sugar mixture. Fold in:

3 c. grated carrots

½ c. pecans or walnuts

1 small can crushed pineapple, drained

Bake at 325 F for 40-45 mins.

(Or grease mini muffin cups and bake for 10 mins.)

ICING

Beat with mixer:

8 oz. cream cheese, softened

1 stick butter, softened

2 t. vanilla

about 4 c. powdered sugar