Tree Line

New Hampshire-Vermont Christmas Tree Association — September 2007

Special points of interest:

- **Winter Meeting:**
The winter meeting of the NHVTCTA will be held in Barre, Vt., on January 29, in conjunction with the Vermont Farm Show. More details to come in the next issue of *Tree Line*.

- **Trees for Troops:**
The NHVTCTA will once again be participating in the NCTA's Trees for Troops programs. To pledge trees and for further details, contact Nigel Manley, (603) 444-6228 or e-mail info@therocks.org.

- **Canaan Fir Group Buying:**
The NHVTCTA is arranging a group buy of Canaan Fir from Reliable Source, Morgantown, W.Va. Trees must be ordered in units of 200. Absolute deadline for orders is September 25. For details, contact Jim Horst at (802) 447-1900.

Inside this issue:

Fall Meeting Preview: Asack & Son Tree Farm

The fall meeting of the NHVTCTA will take place Saturday, September 22, at Asack & Son Tree Farm in Barton, Vt.

Bill Asack runs the farm—which is now primarily a nursery operation offering seedlings and tranplants, along with a choose-and-cut component—with his son, Andrew.

He's been at the Christmas tree improvement game for more than 25 years now, but Asack still recalls the day when he was first introduced to the business. "When I first started farming in Plainfield, Vermont, I bumped into a forester named Norm Hudson," he recalls. "I told him I was interested in the Christmas tree business. So he took me over to the Wolcott experimental station and he showed me the different seed sources that they had brought in from all over the country and Canada. He explained it all to me, but that first day I didn't really understand the 'improvement' work they were doing."

On the drive back, Hudson brought Asack to John Young's tree farm. "John was an early member of the Association and he collaborated a lot with Max McCormack with different tree experiments, and he had a seed orchard there–mountain trees, Cook strain, some hybrid trees," Asack recalls. "He was probably what today would be called an 'exotic' grower."

Asack became friends with Young and, taken by the idea of

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Update: National Christmas Tree Association

The National Christmas Tree Association used the occasion of its annual meeting in Bangor, Maine, Aug. 15-18, to emphasize the value of real Christmas trees.

Christmas tree growers from Canada and the U.S. attending the event considered ways to fill potential higher demand for farm-raised Christmas trees should the current recall of hazardous Chinese products spill over to include the millions of factory-made Christmas trees imported from China.

"The U.S. imports more than 9 million plastic Christmas trees from China annually," said NCTA President Beth Walterscheidt, a grower from Elgin, Texas. "These manufactured trees are made partially from oil and PVC, and earlier research uncovered potentially harmful levels of lead dust coming off some of the older artificial trees. We don't know that artificial trees will be recalled along with numerous other products found to be unsafe recently, but those of us growing natural Christmas Trees need to be prepared to provide fresh, farm-raised trees to families looking for a safe Christmas tree this holiday season."

According to Harris Interactive, U.S. consumers reported purchasing about 9 million new artificial trees annually for the past three years. About 85 percent of them are manufactured in China.

President's Message

Hello again everyone.

Shearing at our farm is pretty much over and although, I am very happy to give my arm a rest, part of me already misses it. One reason I enjoy shearing so much is the interaction I get with the young people I employ from our local community.

Our conversation usually centers around movies, mostly movies and actors as well as what we can do to make improvements during our retail selling season (Star Wars theme day anyone...) ...and on occasion what our association is up to. Our association does a great job helping others from time to time. This is not too much unlike when farmers pitched in for a good cause back in the day.

One of my high school workers, while we were shearing, told me a story he learned in school about an industry that spent considerable money helping a good cause then turned around and spent more resources making sure everyone knew about it. Despite not taking their advice on every movie they want me to see they can sometimes be very insightful. His example reminded me of a quote I read not too long ago and made me go back to read again. "A person's true character is revealed by what he does when no one is watching."

Another young person who worked for me two years back was the son of an equipment operator who I have used from time to time over the last 12 years.

This father owns his own dump truck and designs and installs septic systems. The dump truck he drives looks like its seen better decades and the parts he used to leave in my yard from the tattered trailer he pulled was a lawnmower's worst nightmare. His humble and honest demeanor and yet laid back approach was just the top layer to this multifaceted person revealed by a proud son. The father passed the bar exam in two states with ease, is one of only 5 scientists nation wide qualified by the army Corp of Engineers for special projects relating to soils and geology as well as many more accomplishments.

I filled in the part about being ahead of his time dealing with issues pertaining to the State College in our community in the legislature a few years back. Had the son not worked for me I would never have known the full story about this incredible modest man.

Word of mouth made his accomplishments that more impressive. A model for most of us to live up to and a peer to a few in our membership.

So what can we as an association take from this; enjoy the shearing time and don't concede that Christian Bale is a better actor than Nicolas Cage.

Mike Ahern, president

New Hampshire-Vermont Christmas Tree Association

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2007 Tree Line Publication Schedule

Issue	Ad/Submission Deadline	Mailing Date
January	December 22, 2006	January 15
June	May 18	June 15
September	August 24	September 17

Research Report: Trunk Splitting Explained

Article by Jeffrey H. Owen, Area Extension Specialist, N.C. State University

The Symptom

Under certain climatic conditions, a small percentage of Fraser fir Christmas trees will develop cracks vertically along their trunks. These cracks usually begin at the cut base and extend up one side of the trunk. In rare cases, the split extends through the base of the trunk, dissecting it in two pieces. Splits have also been reported higher up on one side of the trunk without extending down to the base. All of these cracks develop in the wood. The bark may remain intact with small cracks, but will split with larger cracks. Split trunks can develop in the field after the trees are cut, in storage on the farm, during transportation, in the retail lot, or in a consumer's home.

Is it a Problem?

A crack in the trunk of a Christmas tree may raise concerns regarding product quality or perhaps even fire safety. Most concerns related to trunk splitting can be put to rest. This is a problem of fresh trees that lose part of their moisture too rapidly. Given a fresh cut off the base of the trunk and placed in water, trees with cracks will take up water normally for the entire holiday season. In many cases, the cracks will close up as trees are re-hydrated. Cracks are not directly related to foliage freshness, a tree's ability to take up water, or fire safety.

A crack can be a tree stand problem, however. In some cases the pre-drilled pin tree stand may not work and a different style be needed. Where the rare tree is split across the base, no stand may hold it firmly. Some retailers have clamped or screwed cracks closed quite effectively. Since wood and not the bark of the tree take up water, such techniques should not reduce a tree's ability to absorb water. While trunk splitting can clearly be a customer relations concern, it seldom is a functional problem for effected trees.

The Mechanism

Split trunks occur in fresh trees that lose moisture rapidly over a relatively short period of time. While the development of cracks is related to the shrinkage of drying wood, the concept of shrinkage fails to capture the occurrence of cracks in fresh trees with high moisture content.

The primary force involved in split trunks is the capillary tension of the water in the cell walls of the wood. Capillary tension is the force that holds liquid in small tubes such as a glass

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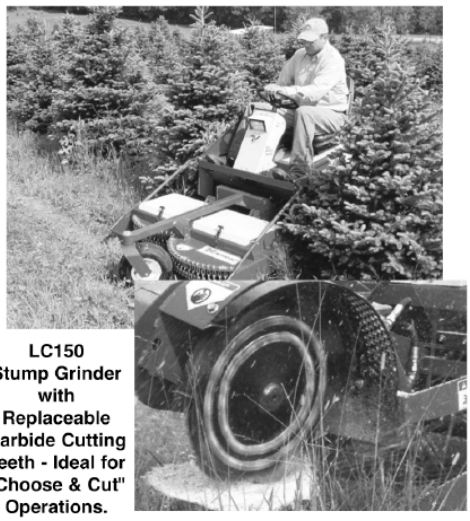

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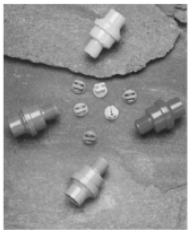

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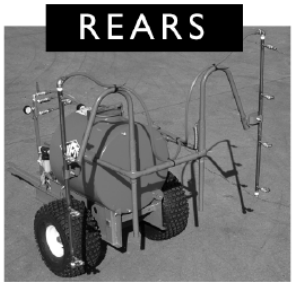

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Christmas tree extinguisher wins on ABC 'Inventor' show

Excerpted from an Aug. 31 article in The Beacon News.

Greg Chavez, the season two winner of ABC's reality show American Inventor (and a $1 million prize) is working with First Alert to launch a product that can extinguish Christmas tree fires and save lives.

The 45-year-old firefighter from Ventura County, Calif., met with engineers and designers from the home-safety product manufacturer this week to fine-tune his invention, the Guardian Angel.

No deal has been finalized yet, but the inventor's goal is to put Guardian Angel on retail shelves everywhere so it can save lives. It's the least he can do, he says, as a firefighter who has seen one too many young lives lost to house fires.

First Alert CEO and President Tom Russo said Thursday he has not yet seen a product like it on the market.

"We're constantly being forwarded ideas, and very seldom do those make it into product," Russo said.

The partnership between First Alert and the firefighter-turned-inventor started in March when the company was contacted by producers of American Inventor to hear his pitch. Russo then appeared on the show's season finale in which he offered

Ventura County Star

George Chavez with his invention.

Chavez the opportunity to work with First Alert. The show reached about 10 million viewers a week.

First Alert is one of the nation's leading manufacturers of residential smoke alarms, carbon monoxide detectors and fire extinguishers. "I was hoping for First Alert," Chavez said in the final episode that aired in July. "Imagine that. I was in my garage for a lot of years and now this. It's just great."

The Chavez product involves a tank of water that is disguised as a present and sits underneath a Christmas tree. A hidden hose then runs from the tank to an angel tree topper, hence the name Guardian Angel. A plug attached to the angel can then unleash two gallons of water over the tree, Chavez said.

According to statistics from the National Fire Protection Association, about 14 deaths, 21 injuries and $16.8 million in property damage a year are caused by Christmas tree fires from both real and artificial trees.

The Guardian Angel falls in line with other consumer-friendly products created by First Alert. The company has introduced the Tundra Fire Extinguishing Spray, a hand-held spray can that covers three times the surface area of a typical actuator.

Chavez has spent about 15 years working on the invention from idea to implementation. And yet, it's all just beginning for him.

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3 yr. seedlings	*3-0*	*7-14"*	*28.75*	*46.00*	*230.00*
*4 yr. seedlings**	*4-0*	*12-20"*	*36.25*	*58.00*	*290.00*
*• 5 yr. transplants**	*2-3*	*12-20"*	*106.25*	*170.00*	*850.00*
*6 yr. transplants**	*3-3*	*14-28"*	*125.00*	*200.00*	*1000.00*
*7 yr. transplants**	*3-4*	*24-36"*	*156.25*	*250.00*	*1250.00*
Colorado Blue Spruce (Majestic®)					**Zones 2-7**
3 yr. seedlings	*3-0*	*7-14"*	*50.00*	*80.00*	*400.00*
4 yr. transplants	*2-2*	*6-12"*	*103.25*	*165.00*	*825.00*
Norway Spruce (Picea abies)					**Zones 2-7**
3 yr. seedlings	*3-0*	*10-18"*	*31.25*	*50.00*	*250.00*
*4 yr. seedlings**	*4-0*	*14-22"*	*40.75*	*65.00*	*325.00*
4 yr. transplants	*2-2*	*8-16"*	*106.25*	*170.00*	*850.00*
*• 5 yr. transplants**	*2-3*	*14-24"*	*125.00*	*200.00*	*1000.00*
Black Hills Spruce (Picea glauca var. densata)					**Zones 2-6**
*• 5 yr. transplants**	*2-3*	*8-16"*	*93.75*	*150.00*	*750.00*
*6 yr. transplants**	*3-3*	*14-24"*	*112.50*	*180.00*	*900.00*
Serbian Spruce (Picea omorika)					**Zones 4-7**
4 yr. seedlings	*4-0*	*14-22"*	*43.75*	*70.00*	*350.00*
*5 yr. transplants**	*2-3*	*16-24"*	*112.50*	*180.00*	*900.00*
*• 6 yr. transplants**	*3-3*	*24-36"*	*125.00*	*200.00*	*1000.00*
White Spruce (Picea glauca)					**Zones 4-7**
3 yr. seedlings	*3-0*	*7-14"*	*31.25*	*50.00*	*250.00*
4 yr. seedlings	*4-0*	*14-22"*	*36.25*	*58.00*	*290.00*
*• 5 yr. transplants**	*2-3*	*12-20"*	*100.00*	*160.00*	*800.00*
*• 6 yr. transplants**	*3-3*	*14-28"*	*112.50*	*180.00*	*900.00*

FIR VARIETIES	Age	Size	Per 50	Per 100	Per 1000
Fraser Fir (Abies fraseri)					**Zones 4-7**
3 yr. seedlings	*3-0*	*4-8"*	*36.25*	*58.00*	*290.00*
4 yr. seedlings	*4-0*	*6-12"*	*50.00*	*80.00*	*400.00*
4 yr. transplants	*2-2*	*5-10"*	*100.00*	*160.00*	*800.00*
• 5 yr. transplants	*3-2*	*7-14"*	*106.25*	*170.00*	*850.00*
*• 5 yr. transplants**	*2-3*	*10-18"*	*115.75*	*185.00*	*925.00*
*• 6 yr. transplants**	*3-3*	*16-24"*	*131.25*	*210.00*	*1050.00*
Fraser Fir (Ayers Seed Orchard)					**Zones 4-7**
4 yr. seedlings	*4-0*	*6-12"*	*53.25*	*85.00*	*425.00*
4 yr. transplants	*2-2*	*5-10"*	*103.25*	*165.00*	*825.00*
Fraser X Balsam Fir Hybrid (Abies fraseri x balsamea) New!					**Zones 4-7**
4 yr. transplants	*2-2*	*6-12"*	*100.00*	*160.00*	*XXXXX*
Balsam Fir (Abies balsamea)					**Zones 3-6**
3 yr. seedlings	*3-0*	*5-9"*	*31.25*	*50.00*	*250.00*
4 yr. transplants	*2-2*	*5-10"*	*87.50*	*140.00*	*700.00*
*5 yr. transplants**	*2-3*	*8-16"*	*93.75*	*150.00*	*750.00*
Concolor Fir (Abies concolor)					**Zones 3-7**
3 yr. seedlings	*3-0*	*6-12"*	*43.75*	*70.00*	*350.00*
4 yr. transplants	*2-2*	*5-10"*	*109.50*	*175.00*	*875.00*
Canaan Fir (Abies balsamea phanerolepis)					**Zones 4-7**
4 yr. transplants	*2-2*	*6-12"*	*112.50*	*180.00*	*900.00*

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4 yr. transplants	*2-2*	*5-10"*	*106.25*	*170.00*	*850.00*
Douglas Fir (Lincoln N.F. New Mexico)					**Zones 4-6**
3 yr. seedlings	*3-0*	*12-20"*	*34.50*	*55.00*	*275.00*
4 yr. transplants	*2-2*	*8-16"*	*100.00*	*160.00*	*800.00*
*5 yr. transplants**	*2-3*	*20-30"*	*125.00*	*200.00*	*1000.00*
Douglas Fir (Deep Mountain®)					**Zones 4-6**
3 yr. seedlings	*3-0*	*6-12"*	*43.75*	*70.00*	*350.00*
*5 yr. transplants**	*2-3*	*12-20"*	*106.25*	*170.00*	*850.00*
*6 yr. transplants**	*3-3*	*14-28"*	*112.50*	*180.00*	*900.00*
Douglas Fir (Shuswap Lake Region, B.C.)					**Zones 4-6**
3 yr. seedlings	*3-0*	*10-18"*	*43.75*	*70.00*	*350.00*
*5 yr. transplants**	*2-3*	*12-20"*	*112.50*	*180.00*	*900.00*

PINE VARIETIES	Age	Size	Per 50	Per 100	Per 1000
Scotch Pine (Lake Superior Blue II®)					**Zones 5-8**
2 yr. seedlings	*2-0*	*5-10"*	*28.25*	*45.00*	*225.00*
Scotch Pine (East Anglia)					**Zones 2-8**
2 yr. seedlings	*2-0*	*5-10"*	*28.25*	*45.00*	*225.00*
*4 yr. transplants**	*2-2*	*14-24"*	*100.00*	*160.00*	*800.00*
Scotch Pine (Belgium)					**Zones 2-8**
3 yr. seedlings	*3-0*	*14-22"*	*37.50*	*60.00*	*300.00*
Scotch Pine (Penn State Seed Orchard XP 86 Scotch Pine) New!					**Zones 5-8**
2 yr. seedlings	*2-0*	*5-10"*	*31.25*	*50.00*	*250.00*
Eastern White Pine (Pinus strobus Northern Seed Source)					**Zones 3-8**
3 yr. seedlings	*3-0*	*6-12"*	*40.75*	*65.00*	*325.00*
4 yr. seedlings	*4-0*	*14-24"*	*53.25*	*85.00*	*425.00*
• 4 yr. transplants	*2-2*	*7-14"*	*90.75*	*145.00*	*725.00*
Eastern White Pine (Pinus strobus Southern Seed Source)					**Zones 3-8**
3 yr. seedlings	*3-0*	*7-14"*	*40.75*	*65.00*	*325.00*
4 yr. seedlings	*4-0*	*14-24"*	*53.25*	*85.00*	*425.00*
*• 6 yr. transplants**	*3-3*	*20-30"*	*112.50*	*180.00*	*900.00*

OTHER VARIETIES	Age	Size	Per 50	Per 100	Per 1000
American Arborvitae (Thuja occidentalis)					**Zones 3-7**
4 yr. transplants	*2-2*	*8-16"*	*100.00*	*160.00*	*800.00*
*5 yr. transplants**	*3-2*	*14-22"*	*118.75*	*190.00*	*950.00*
Canadian Hemlock (Tsuga canadensis)					**Zones 3-7**
4 yr. seedlings	*4-0*	*12-20"*	*56.25*	*90.00*	*450.00*
*• 5 yr. transplants**	*2-3*	*12-20"*	*106.25*	*170.00*	*850.00*
*6 yr. transplants**	*3-3*	*20-30"*	*125.00*	*200.00*	*1000.00*

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Research: Trunk splitting explained

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thermometer. As moisture is lost from foliage of a cut tree, the remaining water in the wood is still stretched from foliage to trunk by capillary tension. This increases the inward pull of the water in the tree trunk – much like a vacuum in a soaked container – and increases the force on each vessel in the wood.

When the force of capillary tension exceeds the internal strength of the wood a crack develops. The tensile strength of Fraser fir wood is only about 180 psi. The forces involved in capillary tension have been measured as high as 515 psi—much greater than the strength of the wood. When the cell wall of one vessel collapses, integrity is lost, more cells collapse, and the crack splits open.

Contributing Factors

Trunk splitting is a function of rapid moisture loss from cut trees. Cut trees can lose some moisture from the cut end of their trunks, but lose most from the foliage as it respires or breathes. The rate at which tree foliage respires is closely linked to climatic conditions and tree dormancy.

Full sun, high temperature, and dry winds can pull moisture from the foliage of cut trees. While drought may be a contributing factor to the stresses that initiate cracks, the primary factor is exposure to conditions that dry the tree out rapidly. Cracks can develop the day after a rain if newly cut trees are subjected to drying conditions. Cracks have occurred in cold temperatures accompanied by dry winds, but exposure to bright sun and temperatures above 70 degrees are the conditions most likely to result in split trunks. Cracks will develop during a period of severe exposure whether it occurs in the field, in storage, during transportation, or on the retail lot.

In a normal fall season, Christmas trees experience enough cold temperatures to go dormant before tree harvest begins. Dormant trees shut down for the winter. Their stomates, the openings on the undersides of needles, do not open as much. Respiration slows. Less air is exchanged and less moisture is lost than if the trees were actively growing.

Dormant trees can be exposed to drying conditions and not lose much water. Dormant trees are less likely to develop cracks in their trunks.

If fall temperatures remain warm with few nights below freezing trees will fail to achieve dormancy. Trees will still be actively respiring and have minimal defense against drying conditions.

This influences all aspects of tree freshness, not just formation of cracks in the trunk. Needleshed and stringburn are also more likely in trees that have not undergone the physical changes of dormancy. In short, if autumn is unusually warm, extra measures will be needed to maintain tree freshness.

Recommendations

Since trunks can split during any period of exposure during harvest or the retail season, all handlers must share in the responsibility for tree care.

Growers should:

• Delay harvest as late as possible to allow trees to achieve maximum dormancy.

• Limit cutting in the middle of very hot days to minimize exposure of unbaled trees.

• Transport trees from fields to storage areas as quickly as possible to avoid excessive exposure to sun, heat, and wind. This is very important when trees are cut during sunny, warm weather.

• Store trees upright with trunks in contact with the ground in a cool, dark, and moist location. Use a natural pine stand or a shade cloth structure with wet mulch on the ground. If the ground is wet, the trunks can take up water.

• Irrigate storage areas with

fine mists to increase relative humidity and reduce temperatures through evaporation (a fine mist will evaporate and cool more rapidly than heavy irrigation).

• Ship trees in refrigerated trucks or at night, particularly to Southern destinations. Trees in un-refrigerated or tarped trailers can be scalded by high temperatures.

• Consider using temperature and humidity monitors in trucks to document shipping conditions.

Retailers should:

• Build a storage area prior to trees delivery that is cool, dark, and provides some means of watering the trees. Delivered trees should be stored immediately to minimize exposure time frames.

• Display trees with some means of irrigation such as a wet mulch or watered sod, or preferably use tree stands with water reservoirs. Misting displayed trees with water can cool them down and slow drying.

• Consider putting up a tent or other shade structure to protect displayed trees or relocate to a naturally shaded by mature trees.

• Consider clamping or screwing closed any trunk splits that occur

• Cut a ½ to 1 inch disk off the trunk to improve water uptake prior to display in water or sale to a consumer

• Educate consumers regarding care and safety of fresh cut Christmas trees.

Fall meeting preview: Asack and Son

continued from page 1

improving trees, began his own seed orchard with seeds he picked at Young's farm. Ever since, Asack has been working to develop succesful strategies for germinating seeds. "And I think that finally, after 25 years, I'm getting pretty good at it!" he jokes.

In 1987, Asack moved to his current farm in Barton. While Asack now works with Fraser fir from North Carolina, Canaan fir from Ohio, Cooks strain balsam, some hybrids and many more, he seems most attached to his balsam fir mountain trees. "I've always been taken by the foliage of mountain trees," Asack explains. "I remember John Young saying that if going to get a perfect tree, it's going to come from the mountain trees. That caught my attention. I didn't know much about Christmas trees at the time, but my father worked in thoroughbred breeding, so I knew the value of good bloodlines. I've been looking for the perfect tree out of these mountain trees ever since."

Asack recently purchased a neighboring farm and has his 4 acre nursery established there. "As soon as the frost goes out of the ground, we're lifting," he says of the hectic spring season. Asack recently purchased a new Fobro 2000 bed lifter to mechanize that grueling task. Planting is done in the fall, so that time is busy, as well. In between there's shearing in the summer and harvesting in the early winter.

With everything he does, Asack tries to take notes and record observations. "I used to grow trees the way people bake bread—a pinch of this and a pinch of that," he says. "But now I need consistent results, and people want good information." The hard work is paying off, as Asack's nursery business is growing and demand is strong, he says. And, as with his trees, he's always looking to improve.

Trading Post

FOR SALE: Still available, 50/100 Wreath Boxes #BXW24G6 from a Kelco pallet. $2.10 each, plus share of shipping. ALSO: Tree Shaker #250, PTO. If you retail or mail order, you need this. Will deliver boxes & Shaker to September meeting. Elysian Hills Tree Farm. Call 802-257-0233 or email elysianh@sover.net

Research Report: Canaan Fir Improvement

Research conducted by Ricky M. Bates, Dept. of Horticulture, Penn State University. Funding provided by the Pennsylvania Christmas Tree Growers Assn.

Surveys indicate that needle loss or "messiness" is a major reason why consumers chooseartificial over real Christmas trees. Renewed marketing efforts might help the industry sell more trees, but certain problems still exist with the product itself. We need to continue and strengthen our efforts to improve several Christmas tree traits, including needle retention. The Christmas tree industry must provide consumers with a product that will perform well while on display in their homes. Maintaining hydration is critical for acceptable needle retention in the postharvest environment, however genetics also play a crucial role. Needle retention performance varies widely between species, between seed sources within a species and even within a single seed source of the same species. The objective of this research project is to locate and develop sources of Canaan fir with superior postharvest characteristics.

Canaan fir with excellent Christmas tree characteristics can be found on farms throughout Pennsylvania and the eastern U.S. Many of these individual trees have been periodically set aside and planted into seed orchards. Needle retention testing of fifty-five trees in one such Adams County Canaan fir seed orchard began in 2003 and continued through 2005.

During October 2003, 2004 and 2005, branches with the current and previous season's needles were removed from the trees and transported to the P.S.U. post harvest display room at the Russell E. Larsen Research Center, Rock Springs, PA. Testing was also performed at Washington State University Puyallup Research and Extension Center, Puyallup, WA. Branches were displayed dry for the duration of the display period and maintained under continuous standard fluorescent lighting, at 48% ± 5% relative humidity, and 68°F ± 4. Needle loss data was obtained at day 0, 7, and 10 by gently rubbing two fingers over the needles. The extent of needle loss was evaluated on a 0 to 7 scale where 0 = none and 7 = 91-100 % loss. Needle loss data was compared and correlated each year of the 3-yr. test period to verify individual tree performance.

After the cleft grafts have healed, the trees are transferred to larger containers and moved to the P.S.U. Pot-in-Pot nursery for a season of accelerated growth.

Of the fifty-five trees tested, eight received an excellent needle retention rating of less than 1% needle loss for first and second

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ASACK AND SON TREE FARM ORDER FORM SPRING 2008

Contact Information:

Name: _____

Telephone: _____

Email: _____

Shipping Information (if picking up at the Nursery in Barton VT, leave blank)

Ship To: _____

Street Address: _____

City: _____

State: _____

Zip: _____

Select approximate Shipping date (Note: Stock sold in the fall is custom lifted. Contact bill to set dates.)

- ☐ Late April
- ☐ Early May

Questions?? contact Bill Asack evenings 6-8 p.m. 1-802-754-6934

Season	Seedlings	Tree Age	Price per Seedling	Qty	Total
Fall 2007/Spring 2008	Balsam Fir: Mountain Strain Vermont Seed Source	3-0	$0.30		
Fall 2007/Spring 2008	Balsam Fir: Mountain Strain Vermont Seed Source	2-2	$0.65		
Fall 2007/Spring 2008	Balsam Fir: Cooke Strain Vermont Seed Source	2-0	$0.20		
Fall 2007/Spring 2008	Balsam Fir: Cooke Strain Vermont Seed Source	3-0	$0.30		
Fall 2007/Spring 2008	Balsam Fir: Cooke Strain Vermont Seed Source	2-2	$0.65		
Fall 2007/Spring 2008	Fraser Fir: Vermont Seed Source	3-0	$0.30		
Fall 2007/Spring 2008	Fraser Fir: Vermont Seed Source	2-2	$0.65		
Fall 2007/Spring 2008	Fraser Fir: North Carolina Seed Source	2-0	$0.20		
Fall 2007/Spring 2008	Balsam-Fraser Hybrids: Vermont Seed Source	2-0	$0.20		
Fall 2007/Spring 2008	Balsam-Fraser Hybrids: Vermont Seed Source	3-0	$0.30		
Fall 2007/Spring 2008	Balsam-Fraser Hybrids: Vermont Seed Source	2-2	$0.65		
Fall 2007/Spring 2008	Canaan Fir: West Virginia Seed Source	2-0	$0.25		
Fall 2007/Spring 2008	Meyer Spruce:	2-0	$0.25		
Fall 2007/Spring 2008	Veitchii Fir:	2-0	$0.25		
				Total Seedling Cost	

Vermont Residents Add 6% sales tax	
Add 20% of total seedling cost for Shipping Via UPS ground.	
Total Cost (Sum of the 3 lines above)	
Payment (amount to be charged or enclosed with form)	
Balance Due (Amount owed before ship date if any).	

Terms:

Payment: 25% Deposit, remaining balance due 3 weeks before ship date. Note: Deposits are nonrefundable.

Minimum order of 100 seedlings or transplants.

All Buyers purchacing seedlings and transplants for production of products for sale on a farm, nursery or greeen house are exempt from Vermont sales tax. (Requires completion of state of Vermont Agriculture Sales Tax exemption Certificate form S-3A)

Payment Information:

- ☐ Check enclosed

Pay with Credit Card

- ☐ VISA
- ☐ MASTERCARD

Amount to charge _____

Account Number: _____

Expiration Date _____

Name of Card Holder _____

Purchasers Signature _____

Billing Information (Incomplete or incorrect information will delay shipment of orders)

Bill to Name: _____

Street Address _____

City _____

State _____

Zip _____

Canaan Fir Improvement

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year needles over the test period, during the 3 test years. These eight trees were selected for grafting and terminal leaders were harvested during spring of 2005 and 2006. Cleft grafts were made using containerized 5-year old Canaan fir as rootstocks in April of each year.

Approximately 75 clones were derived from the original eight mother trees. After the grafts successfully healed, the trees were transplanted into larger containers and moved into the P.S.U. Pot-in-Pot nursery. This production system optimizes the root growth environment resulting in a large plant in a relatively short period of time.

After the 2006 season in the Pot-in-Pot nursery the first group of grafted trees were large enough to move to the seed orchard.

In 2005 a six-acre site was secured at the P.S.U. Horticulture Farm at Rock Springs, Pennsylvania, for the establishment of the Canaan fir and Douglas-fir seed orchard.

The site was cleared and prepared for planting during 2005-2006. The first grafted Canaan fir trees were planted in October, 2006.

Future plans for the seed orchard include the construction of a deer fence and expansion of the Canaan fir needle retention testing.

The Canaan fir seed orchard established near State College, PA, by Dr. Henry Gerhold entered the needle retention trials in 2005, with 50 of the 165 trees being tested.

Plans are also underway to test the progeny of the eight Canaan fir selected from the Adams County, Pennsylvania, seed orchard.

The seed orchard of improved Canaan fir at P.S.U. will eventually contain clones of at least 20 parents with excellent Christmas tree characteristics and proven needle retention performance.

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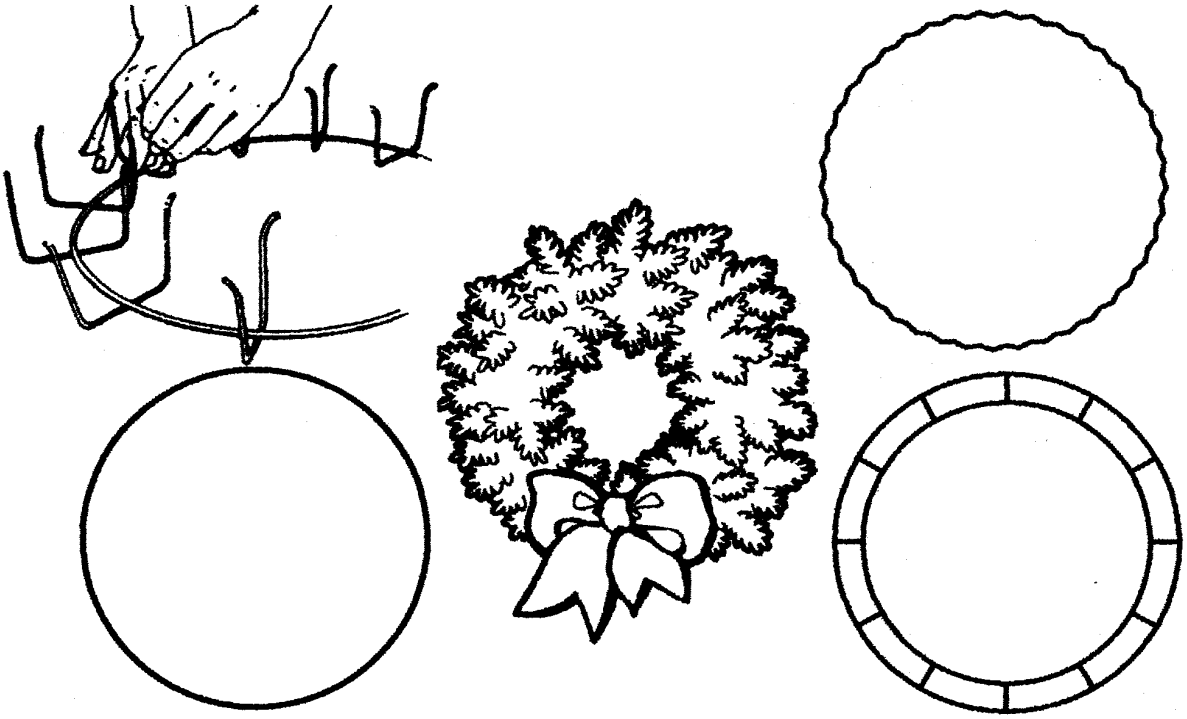

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Editor's Desk

A number of newsworthy items have crossed my desk since the last issue of *Tree Line*.

National Trees Needed

The State of Vermont has the honor of giving a gift of the National Christmas Tree this year (for details see www.capitolchristmastree2007.org). Along with this large tree there are many trees of varying heights that are needed. These "companion trees" will be going to many government buildings, legislature offices, and VA hospitals. And funds are available to compensate growers for the companion trees they provide.

Any Vermont growers who would like to have a Christmas tree in Washington—affixed with a special name tag, which we are also working on—should e-mail Greg DeCell (jdecell@sover.net) with their contact information and the number/size of trees they can provide.

Web Site Remodel

The NHVTCTA has redesigned its Web site to improve its looks and functionality. Notchnet, based in Littleton, N.H., assisted in this process. Some minor fine-tuning remains, but the result is a dramatically enhanced site. Please visit www.nh-vtchristmastree.org to see the results.

Improvements include a "Find a Farm" feature that allows buyers to locate farms by county using maps of Vermont and New Hampshire, which will be especially useful for those on vacation looking for a choose-and-cut farm near their destination.

This year, the Wholesale Buyer's Guide can be found exclusively on the Web site. This approach offers several advantages, including reduced printing and mailing costs. Members listing wholesale trees will also have the ability to update their listings (for example, farm hours and tree availablility) as the sales season unfolds. To gain access to your listing in order to make changes you simply need a PIN password, which you can obtain by contacting Executive Director Jim Horst at 802-447-1900.

Change at Campbell

The Campbell Co. has ceased operation of its grower supply business, the family recently announced. But Cathy Favelle, who has run the business since her father, Ron Cambell, passed away in 1988, has formed a new grower's supply catalog venture with her husband, David.

4everReal (see advertisement below) will operate from the same location, retain the Campbell's Supply Co. phone number and offer many of the same products.