Pre-Twilight meeting Planting at the Paul Bunyan Tree Farm Chicopee, MA

Massachusetts Christmas Tree Association
www.christmas-trees.org
Massachusetts Christmas Tree Association

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In this Issue

Articles Pg.
Organization & Industry News ....................... 3
MCTA Annual Meeting Info ......................... 5
Gypsy Moths ................................................. 7
Cultural & Pest Management Update in Connecticut with Dr. Tom Rathier .... 11
Is your business ready for EMV? ................. 13
2015 Twilight Meeting Review ...................... 17
Weed Control in Conifer Seedbeds ............... 21
New Products ............................................. 23
Eastern States Expo Info ............................... 27
MCTA Annual Budget Report ...................... 28
Check-Off Program Highlights .................... 30
MCTA Director Meeting Notes .................... 31
Pesticide Use Report forms .......................... 32
2014 Annual Meeting Notes ....................... 34

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Happy 57th Anniversary to the MCTA. Our legacy and strength comes from you, our members. We are lucky to have a great deal of talented people from all walks of life with a common goal. We thank you for keeping us strong. Volunteering your time and effort, and sharing a wealth of knowledge. Many wonderful members have passed on, and we are happy to see new faces join us. Welcome Sean Lowe, Raymond Lemoine and Daniel Corey. Don’t forget to Renew your membership by August 1 in order to allow time to get your farm information updated before activity begins on the MCTA website on September 1, 2015.

We’ve been fortunate to be in a stretch of beautiful weather since mid-spring to get the bulk of chores done. A month of little rain brought cause for concern of another drought, and with a big sigh of relief, rains came just in time to supply our crop a good amount of water during the crucial early growing period.

We had a wonderful turnouts at all three Twilight meetings this year. Thank you to the efforts of the Twilight committee and the hosts, Bill and Julie Gauld from Evergreen Tree Farm in Sterling, Susan & Kaz Lopes from Paul Bunyan Tree Farm in Chicopee and Larry and Susan Flaccus from KenBurn Orchards in Shelburne. We’ve heard a lot of good feedback from the meetings. Our members really enjoyed the experience, different farm techniques, good food and great company.

MCTA Annual Meeting is just around the corner. This year it will be held at D.J. Hussey Farm in Townsend, MA. Hosted by John and Darlene Hussey. There is a great line up of activities, with two well known figures; Dr. John Cowles and Dr. Todd Mervosh to provide us give us insight in dealing with the on-site insects and weeds. Three Pesticide Credits will be offered. The MCTA business meeting will include some important items presented by President Pierce, as well as nominations of new directors.

MCTA Website will be getting some additional features and photos in the next few months. Members will be able to access reports, budgets and other related MCTA business and enhance our communications with our members. So, in order to preserve certain sensitive MCTA information on our website, we will be implementing a Member login, with a Login ID and password in the “Member’s Only” section and hope to have this up and running in the next few months. It will be easy to use and details of the login id and password will be sent to every member. As communications increase, the board will be adding a new position to it’s staff. We are looking for/hiring a “Communications Coordinator”, for 2016. Details of the job description are included in this issue. A second opening will be available in 2016 for a Shearings Editor as well.

The Big Eastern States Exposition, Topsfield fair and many other fall fairs will be upon us in no time at all. The committee is looking for 10 ft. tree for the Big E booth. A $100 stipend is paid to provider. There is always room for submissions in the Christmas tree and wreath contests. If you would like to enter a tree or wreath but do not know how to get it there, the Big E committee and some of the board members who help with the booth can coordinate some transportation for your wreath or tree. Forms are in this issue. And, volunteers for the booth are always needed. John Coward is the contact and details can be found in this issue of Shearings.
NATIONAL NEWS

Christmas Tree promotion Board
Sets Priorities

Centennial Colorado – The Christmas tree Promotion Board held its second face-to-face meeting in the Chicago area. The Strategic planning, set a clear vision and mission statement. One important on the agenda was to layout their strategic plans which included a comprehensive overview of services and signing of documents of a line of credit through Metropolitan Bank to provide operating funds needed until the board begins collecting assessments.

The bylaws and an extensive list of board policies were reviewed and approved. The board will continue it progress though out the summer, holding bi-weekly conference meetings. The board will be busy reaching out to growers across the country. The next face-to-face meeting will be held in North Carolina at the NC Christmas Tree Association meeting.

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Calendar

<table>
<thead>
<tr>
<th>Month</th>
<th>Date</th>
<th>Event Details</th>
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| July  | 23   | NCTA-1 Day Seminar  
Richardson’s Farm  
Spring Grove, Illinois |
| July  | 24 & 25 | Summer Trade Show & Conference  
Spring Grove, IL |
| August | 4   | Conifer Pest Management  
Three B Tree Farm  
Jordan, NY |
| August | 22  | MCTA Annual Meeting  
D.J. Hussey Tree Farm  
Townsend, MA |
| August | 26  | CTCTGA Meeting  
Scott’s Tree Farm  
Andover, CT |
| Sept. | 19  | CTCGA Meeting  
Grey Ledge Tree Farm  
Plainfield, CT |
| Sept. 18 – Oct. 4 | The Big E  
W. Springfield, MA |
| Oct. 3 – 13 | Topsfield Fair |

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10 ft. Christmas Tree Wanted
For The “Big E” Exhibit
Stipend of $100.00
Contact: John Coward  
(413) 569-6724

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Christmas Tree Promotion Board Strategic Planning

Goals to achieve the future we seek to create:

- Enhance value and demand for real Christmas trees
- Improve the consumer attributes of real Christmas trees
- Build the tradition of real Christmas trees
- Connect CTPB’s programs with growers and industry

Challenges to overcome:

- Removing barriers to choosing real trees
- Overcoming the “no tree” choice
- Connecting real trees with millennial consumers.
- Engage growers/industry to use CTPB’s programs with retailers and consumers.

Creating alignment

Alignment means the vision is the driving force behind all of the CTPB’s activities. All goals, objectives and tactics should be evaluated on their contribution to achieving the CTPB’s vision.
The D.J. Hussey Farm in Townsend, Massachusetts has been family owned and operated since 1926. Originally purchased by the late Jesse J. Hussey Sr. the half pasture-half hayfield acreage was used to raise beef cattle and some vegetable crops. John and Darlene continued the beef cattle business, expanding to offer seasonal “pick your own” Christmas trees, pumpkins, strawberries and blueberries. When the cattle business was abandoned the farm focused on “cut your own” Christmas trees and still maintains approximately 2 acres of blueberries opened for picking on weekends late July thru early August. It’s a family operation with son John Jr., and wife, Kelly, and daughter, Nicole and husband, Dan helping on the farm. In addition to Christmas trees, Darlene and Nicole hand make wreaths, roping, kissing balls, centerpieces, tabletop trees and cemetery baskets and also offer handmade crafts, ornaments, quilts, stockings and more in their gift shop.

8:00 - 9:00  Registration Coffee, donuts, socialize, visit vendors.

9:00 - 9:15  Welcome Introductions, meeting agenda and farm history

9:15 - 9:45  Annual Meeting Dan Pierce - MCTA Annual Business Meeting (see agenda)

9:45 - 10:15 Vendors Introduction and synopsis of products and services

10:15 - 11:15 Dr. Todd Mervosh “Weed management issues for Christmas tree growers”
Discussion of herbicide choices, new herbicides, timing, problem weeds and vines and invasive species.

11:30-12:30 Dr. Richard Cowles “Choosing appropriate pesticides for managing Christmas tree insect and Mite pests”
Discussion of the commonly used insecticides and miticides for maintaining Christmas tree plantations, characteristics that help target specific insect or mite pests. Discussion of the controversy surrounding the use of neonicotinoid insecticides on bee populations and mitigating the risk.

12:30 – 1:30  Visit Vendors: Lunch menu BBQ Chicken pieces, seasonal salad, corn on the cob, watermelon, Rolls & butter, cookies, coffee, cold drinks

1:30 – 3:00 Farm tour and IPM Practices Dr. Richard Cowles

Registration Annual Meeting Saturday August 22, 2015 Deadline: for meal count August 19, 2015

Name ____________________________________________Address ______________________________
City___________________________________________ State___________ Zip___________

Cost $20 per person (includes lunch) No. of persons ________X $20.00= $_________ Total Enclosed

Make checks payable to MCTA & send to: MCTA, Jim Colburn, 104 West Main Street, Merrimac, MA 01860
Directions to D.J. Hussey Farm: Take Route 119 to Townsend, then North on Route 13, left at Police Station, right onto Burgess Road.

**Dr. Todd Mervosh** is general manager of TM Agricultural & Ecological Services, LLC based in Suffield, Ct. His primary areas of expertise are weed control methods and diagnosis of plant problems. A native of Illinois, he earned a B.S. degree at the University of Illinois, an M.S. in agronomy/weed science at the University of Wisconsin, and a Ph.D. in agronomy/weed science at the University of Illinois. From 1994 to 2014, Dr. Mervosh was a scientist for The Connecticut Agricultural Experiment Station in Windsor. He conducted weed management experiments in a variety of crops, especially Christmas trees and nursery plantings. He also did extensive field research on control of non-native invasive plants including Oriental bittersweet, Japanese knotweed, shrub honeysuckles, pale swallow-wort, Japanese stilt grass and mile-a-minute weed. Dr. Mervosh provides information to growers and property managers about effective and environmentally sound weed management strategies, including proper use of herbicides in vegetation management programs. He is licensed in Connecticut as a supervisory pesticide applicator.

**Dr. Richard Cowles** has been a research entomologist at The Connecticut Agricultural Experiment Station for twenty years. Although first hired to specialize on soil-dwelling insect pests affecting nurseries and turf, he has worked on such diverse subjects as systemic insecticides to manage forest pests, bed bug chemical control, and Christmas tree IPM. He has expertise in the area of biology and management of spotted wing drosophila, hemlock woolly adelgids, armored scales, white grubs (Japanese beetle, oriental beetle, European chafer, Asiatic garden beetle and black turf grass ataenius), black vine weevil, and spider mites. He is experienced in the uses of conventional and new insecticides for the management of nursery, turf, landscape, and small fruit pests. He earned a B.S. in Entomology at Cornell University and a M.S. and Ph.D. in Entomology from Michigan State University. Current research efforts are directed toward improved management of armored scales in Christmas tree plantations through basal bark sprays of systemic insecticides; improving the genetics of fir trees grown as Christmas trees; and finding alternative and more effective options for managing strawberry sap beetles and spotted wing drosophila, especially by including behavioral manipulation.
Get out your duct tape, 
Gypsy Moths are back

Duck taped wrapped trees everywhere. Do you remember? It’s promotion to consumers as one of the many methods to slow down the epidemic of hungry gypsy moths attacking everything that was green in the 1980’s and 1990’s brings back many unpleasant memories. As Christmas tree farmers, we saw it affect everything on our farm. Once the major food supply was depleted, gypsy moths forged on to eating the needles off our small trees, seedlings and transplants. The large population of crawling nymphs and winged males looking for a mate was overwhelming.

The warm, dry weather this spring was the perfect recipe for a resurgence of moths, especially winter moth and gypsy moths. As noted in UMass Landscape Messages from June 2015, Cape Cod and Southeastern Massachusetts saw an especially high level of defoliation of trees. Winter moths start the process and gypsy moths came in to finish the job.

The caterpillars disperse over long distances in various ways; the main two ways include hitch-hiking a ride on cars and trucks in the egg stage and caterpillar stage, while the hairs on the caterpillar stage contain air pockets that allow them to be blown on the winds for many miles a day.

There are visible signs of damage and migration of gypsy moth into Middlesex and Worcester County as of this writing.

Most of our plantations are surrounded by pines, oaks, maples and many other deciduous trees. Once they get decimated by an insect or disease, it can affect our crop as well. In a severe outbreak of Gypsy moths, any vegetation is at risks, as we saw in the 1980’s and 1990’s in New England, the effects of defoliation on Christmas trees especially on tender, new growth became a targeted food source once the foliage of everything else was decimated.

The natural dynamics of the tree farm changed.

The Gypsy Moth was originally brought from Europe by Leopold Trouvelot, who resided in Boston, Mass in 1869 in an effort to improve the silkworm industry. Several cases of the larvae were overturned in a windstorm near Boston and the larvae were released into the forests of Massachusetts. Within 20 years the species caused serious harm to those forests. Since that time millions of acres of forest lands have been defoliated in the northeast. In 1991 and 1993 ships from Russia and Germany introduced the species to the northwest and the Carolinas.

The gypsy moth is a polyphagous insect; (insects that feed on a variety of food and can have an insatiable appetite) North American populations feed on over 300 different shrub and tree species despite this wide breadth of host preference, there is considerable variation within northeastern North American forests in their susceptibility to defoliation; we use "susceptibility" defined as the probability or frequency of defoliation.

The gypsy moth is now one of the most destructive insects in the eastern United States. It is one of many foliage-eating pests that cause an estimated $868 million in annual damages in the United States. Tens of thousands of acres of oak forest experienced significant defoliation. Many of these areas had salvage harvests done to make use of the dead timber, which combined with other factors, helped to regenerate forests that were no longer dominated by our important oak species.

Outbreaks

Gypsy moth outbreaks seem to run on a 10 to 12 year cycle. It is cost prohibitive to spray every affected acre, so anticipation of where the gypsy moths will
Gypsy Moths continued

show up is of major importance (based on what has been seen in the past.

Active forest management implementation keeps healthy regeneration of desired species is established before widespread mortality makes it harder to do.

Natural Control

Defoliation that occurs in multiple years can often stress trees to the point where mortality can be noticed on a large scale. Therefore, pest suppression efforts for gypsy moth are an important part of active habitat management. Spraying insecticides is not the only help we have in controlling gypsy moth populations; natural factors are also very important. Since the 1980s, the fungus *Entomophaga maimaiga* has had a large impact on gypsy moth populations. This fungus needs cool and wet weather to negatively impact gypsy moth populations. The caterpillar larvae can feed and may cause some defoliation, but they usually die before completing the life cycle resulting in much fewer adult insects and egg masses. However in years with warm and dry periods that coincide with leaf-out in the spring, the caterpillars can do massive and widespread damage because the fungus is not as prevalent in the forest. NPV, or *nucleopolyhedrosis virus*, can also help to collapse expanding gypsy moth populations.

Gypsy Moth Life Cycle

Gypsy Moth Larva

Gypsy moth larva take the form of a caterpillar. They hatch in the spring from eggs laid the previous summer. They crawl up trees and out on the limbs and start eating tree leaves.

Larvae feed during the night and rest in bark crevices during the day (except at high densities, feeding occurs all day). They start out small, but soon grow larger as they eat tree leaves. When small they are lightweight and buoyant. They suspend from trees on gossamer strands and get blown by the wind - sometimes for miles. This is one way they can be spread over wide areas.

As the caterpillars grow, they molt 5 times; each time shedding their previous skin. Each growth stage is called an instar. Females molt 6 times, and grow slightly larger than males. They can grow up to 2½ inches in length.

In the full adult stage, the caterpillars are easy to identify and are usually black and quite hairy with two double rows of spots from front to back. The first five pair of spots are blue and the second six pair are orange to red. The female adult is white and black, and the male is grey and black.

Transition To Pupa

When the caterpillars are full grown after about 2 months of eating leaves, they find a place to hide and transform into the pupal stage. The picture above and to the left shows a caterpillar in the process of turning into a pupa. While in the pupal stage, they go through a transition called metamorphosis, and turn into a moth. Pupation occurs about 8 weeks after egg hatch. Pupae are usually located in bark crevices or other cryptic locations.

Male and Female Gypsy Moths

After less than a week's time, the male and female moths emerge from their respective pupa. The males are brown and fly to seek out females. Males have plumose antennae to detect the sex pheromone emitted by the female. The females are white in

Continued on page 9
Gypsy Moths continued

color and don’t fly. They crawl someplace and wait for a male to find them and mate with them, such as is seen in this photo.

Female Laying Eggs
After being fertilized by the male, the female gypsy moth lays a mass of eggs. An egg mass can hold hundreds of eggs.

Egg Mass
The egg mass is kind of blob that will stick where it is deposited until next spring. There may be hundreds more egg masses on this tree. When the eggs hatch, numerous gypsy moth larvae will hatch and begin another new cycle the following year.
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Two consecutive winters of harsh winter wind, single digit and sub-zero temperatures and deep sustaining snow cover will surely bring additional challenges to most farmers in the Northeast. We may see above-snow-line damage to whorls and budsets as well as girdling at and below the snow line from hungry deer and rodents. This second year rehabilitation effort will create additional time and labor for this year and years to come.

Higher elevations of North Carolina, are more likely to experience similar freeze damage to New England this year from the harsh winter. No matter what the cause of hard freeze damage to Christmas trees, especially Fraser Fir, the solutions to rehabilitating Frasers and other conifers will be the same.

In 2003, Dr. Jeffrey Owen of North Carolina State University Extension did an interesting pruning study. A revisit of his experimentation and findings could help guide us in rehabilitating the winter damage to our budsets and top whorls. Here are his findings.

Fraser Fir Christmas trees damaged by freeze will need special care in pruning and shearing in the second year after the freeze, if they are to be.

At any rate, my project won’t exactly be in sync with Christmas tree planting season. I can get my samples as soon as the top 5 – 6 inches of soil far as. I don’t have to worry if the soil is too wet or to compacted to successfully plant young trees in. My samples, however waterlogged, will be spread out to dry in a greenhouse and ready to analyze in a few days. Dealing with Woody plants that are already established and need to be planted in the spring is a lot more challenging.

While not unprecedented, the winter of 2014 – 2015 has certainly been a cause for concern for farmers whose crops are grown permanently or at least over a course of several years with their entire root systems in the ground. We had pretty cold conditions early in the winter along with fairly low snowfall so most soils froze down through the upper 10 – 18 inches. The prolonged spells of colder than ordinary temperatures occurring during much of January and February probably did not deepen the frozen soil situation too much because the accompanying frequent significant volumes of snowfall likely serve as insulation against deeper freezing. But, that persistent snow cover will probably cause those frozen soils to take a lot more time to thought and will likely interfere with normal spring operations.

Conifer growers may suffer delays getting started with planting and other management practices but they would be lucky compared to the problems Connecticut’s Maple syrup producers have encountered this spring (notwithstanding those CCTGA members who also produce syrup). Most syrup farmers I’ve talked with this spring report that the continuous freezing temperatures have likely not affected the health of their trees but have probably resulted in a much more compressed harvest season. It is quite likely that this year’s harvest will be smaller than average.

One observation that has been made by some syrup producers who both for stands and landscape sugar maples has been that, while late, the forest and trees, even with snow cover present, were yielding sugar earlier and in greater volumes than the landscape stand trees. This observation reflects on the soil environment of each setting. Native stands of trees, while not always as visually striking as their close relatives in landscapes, have the benefit of soil conditions that are far more biologically friendly to trees and other Woody plants that those in sharp looking landscapes.

continued on page 12
Soils in natural settings consist of far more organic matter from leaf and woody litter that falls and decomposes annually. This environment, in turn, can support greater populations of microorganisms that are busy consuming carbohydrates and nutrients while breaking down the litter. Whenever large-scale microbial activity is occurring, significant heat is generated throughout the litter which can serve to warm-up tree roots entry activity and ultimately prompt more timely sugar movement. This warming can also be reflected in a quicker snowmelt around forest trees.

Maples aren’t the only force trees to benefit from advanced microbial activity in forest settings. Conifers are just as rewarded in their natural environments although those benefits may not be as common in production settings. By logistical necessity, Christmas tree production needs to take place in no-forest field settings (or former for settings that have become fields that can’t support microbial population as well as forest can. Many of the cultural practices we use in field production (mulching and minimal tillage, for example) are helpful in improving beneficial microbial growth but such activity is usually far less effective than forced conditions can be.

Among other cultural practices that are common but not necessarily helpful are those that result in compacted soil. Some of the trips made up and down rows (shearing, pest and weed management, fertilization, customer activity) are necessary but they can add up over the course of one rotation, to say nothing of fields that are repeatedly planted without tillage.

One of the most common suggestions for avoiding or at least limiting soil compaction is to avoid any sort traffic, especially tillage activity especially when the soil is wet or worse, waterlogged.

So, in addition to possibly having to wait until frozen soils thaw before planting this year’s new trees, with some soils, it may be equally important to wait even longer to assure that the soil has dried enough so that the act of planting does not further compress it. A good test of soil readiness would be to grab a handful of soil from the 3 – 4 inch depth and squeeze it. If the soil remains in solid shape, it is probably still too wet. Naturally, finer texture soils typical of Connecticut’s upland areas are more likely to dry slowly compared to the sandy soils found in the central areas of our state.

As much as young transplants need timely supplies of water after planting and during their 1st 2 years in the ground, their roots also require a steady supply of oxygen for their roots to survive and continue growing. Poorly drained conditions or compacted soils can really limit air supply to root zones and be just as damaging as dry soil conditions. A strategy that may be helpful would be to consider planting areas in order of drying capacities by reading fields (or portions of fields) on sun exposure and soil type.

As challenging as it may be to keep newly arrived transplants in an appropriately cool, moist setting as outside temperatures begin to warm, it will likely be a better choice to wait for planting conditions to improve and to risk losing that significant investment. For more information on soil moisture and compaction issues as well as other cultural concerns, email me trashier@scbglobal.net
Is Your Business Ready for EMV?

The October 1, 2015, deadline to migrate to EMV credit-card transactions is quickly approaching. In the pre-EMV credit card world, issuing banks assume any liability if fraud originates from a counterfeit, lost or stolen credit card. However, as of the October 1, that liability assumption shifts to the party with the least-secure means of accepting payment. The days of swipe-and-sign cards is fading fast and EMV is here to stay. If your business accepts credit cards now or plans to in the future, the cost to you and your business could cost you dearly, if you choose not to convert to an EMV compliant system.

The “liability shift” specifically applies to fraud originating from both counterfeit credit cards and those that are lost or stolen.

Consider this typical example from a pre-EMV era:

A patron uses a magnetic-stripe card at your business to buy $300 worth of goods. Upon reconciling your receipts for the day, you are notified that the goods were purchased with a counterfeit card, resulting in a fraudulent purchase. Because it’s the issuer that backs up the creditworthiness of the card, the issuer of that account will reimburse you with the original purchase amount.

But time marches on, and the issuing bank, your acquirer and your payment processor have all migrated to EMV. Here’s what happens when you don’t have an EMV-capable terminal in the post-EMV era:

A patron uses a magnetic-stripe card at your business to buy $300 worth of goods. Upon reconciling your receipts for the day, you are notified that the goods were purchased with a counterfeit card, resulting in a fraudulent purchase. Because of that, your older, non-EMV terminal didn’t catch the counterfeiter. Because your business is the weakest link in the payment chain, you’re responsible for assuming the $300 fraudulent cost.

You might be wondering, in this case, how the rest of the payment chain can catch the counterfeiter and you can’t. That’s because data that is copied from an EMV-chipped card won’t be recognized by a terminal that isn’t EMV-capable.

If the counterfeiter pulls credit-card information from the magnetic stripe of an EMV-chipped card, then that information contains a marker that says it was taken from an EMV-enabled card. So when that information is passed through the magnetic-stripe reader of an EMV-enabled terminal, the terminal itself can catch the counterfeit card and refuse the transaction on the spot.

Will I Be Liable for Counterfeit Fraud If My Business Doesn’t Migrate by October?

In short, the party with the least-secure means of accepting payments will be held liable for counterfeit fraud. To help you understand the situations were you would be held liable for counterfeit fraud without an EMV-capable terminal, here’s a handy reference table. This table is relevant for all four major card brands:

<table>
<thead>
<tr>
<th>Counterfeit Card Fraud Liability Examples¹</th>
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<tbody>
<tr>
<td>CURRENT</td>
</tr>
<tr>
<td>MAG STRIPE CARD + MAG STRIPE TERMINAL = ISSUER LIABLE</td>
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<tr>
<td>OCTOBER 2015: A BRIEFING²</td>
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<tr>
<td>MAG STRIPE CARD + CHIP TERMINAL = ISSUER LIABLE</td>
</tr>
<tr>
<td>MAG STRIPE CARD + CHIP TERMINAL = MERCHANT LIABLE</td>
</tr>
<tr>
<td>CHIP² CARD + MAG STRIPE TERMINAL = ISSUER LIABLE</td>
</tr>
<tr>
<td>CHIP² CARD + CHIP TERMINAL = ISSUER LIABILITY</td>
</tr>
</tbody>
</table>

*Some apply to all brands - Oct 2017 for MC²*  *With or without MC-capable  
*Information courtesy of merchantPayment Solutions & EMV MigrationForum  

¹Issuer liability applies to all cards - Oct 2017 for MC² *With or without MC-capable  
²Information courtesy of merchantPayment Solutions & EMV MigrationForum
EMV continued

Will I Be Liable for Fraud Associated With Lost or Stolen Cards?

MasterCard, American Express and the Discover Network shift liability to the party with the least-secure means of accepting payment under the circumstances illustrated below. Note that Visa does not enforce a liability shift for lost or stolen cards:

What If My Business Doesn’t Complete Its EMV Migration by the Deadline?

If your business doesn’t have the newer, EMV-enabled hardware installed and isn’t ready to accept EMV transactions, then your business will be responsible for fraudulent charges until it completes its migration. If your business is in this situation, contact your payment processor and merchant acquirers for assistance.

What Happens If I Don’t Migrate to EMV Processing?

If you don’t complete your migration to EMV-capable terminals before Oct. 1, 2015, then the party with the least-secure infrastructure is liable for any credit-card fraud committed at your business. In this case, “least-secure infrastructure” means least EMV-capable.

How Do EMV Transactions Differ From Magnetic-Stripe Transactions?

Magnetic-stripe transactions have been the credit-card standard for generations. But a new standard has taken over major markets throughout the world, and the U.S. is now poised to make the transition throughout the upcoming year.

The major difference between magnetic-stripe and EMV-chip transactions is the increased security that EMV provides and outshine the older magnetic-stripe process.

EMV Transactions

EMV offers consumers options when making transactions. There are two types of EMV transactions to consider: contact transactions and contactless transactions. Some cards may support one or both.

A contact transaction doesn’t differ much from a standard magnetic-stripe transaction. In fact, the only significant difference is that the card must remain in the terminal for the duration of the transaction.

Contactless transactions allow a cardholder to simply tap his or her card against a terminal when prompted. As opposed to other wireless transactions that run on earlier implementations of RFD (radio frequency direction)

EMV continued on page 15
EMV transactions rely on NFC (near field communication), a newer subset that allows for greater security by insisting on a “handshake,” or active permission, from both the terminal and the initiating device (i.e. a card or even a smartphone).

Will People Still Be Able to Swipe Their Cards?
Yes. Initial EMV cards will still be equipped with magnetic stripes so that they can be used at locations that haven’t yet migrated to EMV.

What Is “Chip-and-PIN” and “Chip-and-Signature?”
Chip-and-PIN and Chip-and-Signature are two unique ways that a customer can confirm his or her purchase for an EMV transaction.

As you might have guessed, an EMV Chip-and-PIN transaction is verified with the use of a PIN. EMV transactions that require verification with a signature are known by the name “Chip-and-Signature.”

Which Type Will Be Used in the United States?
Initially, the vast majority of EMV transactions in the U.S. will be verified using Chip-and-Signature. This is because many issuers have decided not to offer EMV credit cards with PINs due to concerns about adjusting consumer behavior too abruptly.

Most PIN-verified transactions are likely to come from international customers, at least initially. So if you operate your business in a tourist-heavy area, be mindful that your equipment should accept Chip-and-PIN transactions.

Making the Transition
While the migration process and the new standard may seem a bit tedious and time-consuming, compared to magnetic-stripe transactions, EMV offers many benefits, including reduced fraud and increased privacy. These alone make the hassle worth your while.

EMV migration is neither simple nor quick, but doing your homework early can facilitate and expedite the process.

The migration will entail a few critical steps and may require changes in both the hardware and software your business uses to make credit transactions.

How to Begin Transition
Out With the Old, In With the New
For most small business owners, you’ll likely start with the same businesses and resources you used to initially set up your merchant accounts. As such, you’ll talk to a merchant acquirer that supports accepting payments from the big four brands. A representative from each should be able to walk you through options based on your current hardware deployment, store count, POS capability and sales volume.

But before you pick up the phone or send an email, take a look at your current credit-transaction equipment, and ask yourself if any substantive changes need to be made. Consider the following options when auditing your hardware:

- **A one-to-one hardware replacement**: If your business simply needs to swap out your non-EMV terminal(s) with those that are EMV-capable, then you can likely keep it simple and keep your costs down.

- **Upgrade your existing system**: If you’ve been considering an investment in a more robust payment system than your current one, perhaps with inventory or customer-loyalty functionality, coupling it with an EMV-capable solution may give you the best return on your investment.

- **Consider adding mobile or contactless payments**: In addition to chips, EMV security standards have also been implemented in

EMV Costs, Certifications and More: What You Need to Know Before the Migration

Continued on page 16


**EMV continued**

- mobile payment solutions created by Visa, MasterCard and American Express that use NFC. With Apple Pay here and Android Pay on the horizon, doing one upgrade that brings all of these capabilities to your business might be a great long-term investment.

Once you decide on your business’ needs, call your merchant acquirer and/or payment processor to help you understand your options. Once you know what kind of hardware you need, the next step is planning for how much time will be needed to deploy and certify it.

**Wait, There’s a Certification Requirement?**

Yes. Every EMV-enabled terminal must be certified by EMVCo and by the card brand(s) whose payments you want to accept. The size of your business and the complexity of its payment system will dictate how the certification affects your company. Most small Business that do under 200,000 transactions will have a Level 4 PCI Compliance requirement. (See figure 3)

With that being said, unless you have thousands of stores running incredibly complicated software, it’s likely that your business does not have to play a substantial role in the testing process.

Levels 1 and 2 are handled by EMVCo and deal with certifying payment equipment at the hardware and software levels. Each certification is meant to ensure not only the security of the device, but also interoperability standards between brands, customer verification methods (CVMs) and other aspects of EMV deployment. This also applies to apps that are designed to facilitate EMV adoption.

As a small business owner, unless you code your own kernel-level applications for your terminals, you shouldn’t have to worry about Levels 1 or 2.

In contrast to hardware and software, Level 3 is an end-to-end certification conducted between the merchant and the brand, with checks made with your processor, acquirer and any ISV(s) you are working with. It checks the integrity of the payment chain by testing every type of possible transaction that the terminal can do.

Depending on the types of transactions and CVMs you want to process, you could be looking at upwards of a few hundred tests, especially if you accept all four brands.

**Will My New EMV Equipment Have to Be Certified?**

**For Small Businesses**

If your business’ payment-system implementation is relatively simple with few or no customizations, then most of the Level 3 certification may not apply to your business. This includes simple implementations like single terminals, as well as specific, pre-made software packages that are certified to handle EMV transactions without heavy customization.

Be sure to contact your payment processor and acquirer for more info about what qualifications your business is required to perform.

Figure 3: PCI Compliance: Copyright from Compliance101.com

**How Do These Tests Work?**

EMV testing is divided into three levels.
2015 Twilight Meeting Review

Bill & Julie Gauld, Evergreen Tree Farm, Sterling, MA

June 3rd: Twilight Meeting at Evergreen Farm had about 42 attendees. After a light supper, a brief history of the farm was given, and discussion followed on parking issues, greeting of customers, transport of cut trees, shaking and baling. Methods of payment were discussed as well. In addition to sales of trees, improvement of the land for wildlife habitat continues. A tree line between plantations is left for cover, and crabapple trees, dogwood, and winter berry bushes have been planted or encouraged. This also makes the farm more attractive to our customers. A walking tour of the farm led to a discussion of fertilizer practices, insect and fungus diseases, and proper growth sites for different species, as well as a tour and discussion of developing their gift shop.

Susan Lopes, Paul Bunyan Tree Farm, Chicopee, MA

June 24: Twilight Meeting at Paul Bunyan’s was a success. The weather was perfect, the crowd plentiful and enjoyable, and the food delicious. There was about 35 to 40 people in attendance. Lots of pretty trees to look at! Subjects discussed included a new deer fence, our tagging and cutting process, weed challenges and controls, fertilization, preparation of the fields before planting, varieties of trees on the farm, and their customer base demographics.

Larry & Susan Flaccus, KenBurn Orchards & Inn, Shelburne, MA

July 2: Twilight Meeting at KenBurn Orchards had approximately 25-30 people attend. In between off and on showers, a delicious homemade meal of pulled pork and lots of yummy desserts was enjoyed. Larry arranged to have Taryn LaScola, a Chief Pesticide Inspector from the Mass Pesticide Bureau give a talk on the importance of record keeping, worker protection standards, and employee training. What they look for when auditing a site, and not to be scared! Pesticide credits were offered at the meeting. Of particular interest to the crowd was Larry’s Micro-droplet Sprayer he has been using for 4-5 years. He grows Balsam fir and Blueberries which creates a problem with Witches Broom. A few hungry mosquitoes enjoyed us too.

Position Announcement:

Christmas Tree Farm Manager (Full Time)

The non-profit Society for the Protection of New Hampshire Forests seeks a self motivated individual with the position of Christmas tree farm manager at its Rock’s Estate in Bethlehem, New Hampshire. The successful candidate will have a minimum of 2 – 3 years of commercial farm experience and experience hiring, training, and supervising others. A minimum education of 2 year community college degree or equivalent is preferred. A degree with program focused in agriculture and/or management is preferred.

This is a full-time position. The Christmas Tree Farm Manager is responsible for operating and managing the Christmas tree farm, and includes daily work in the field. The position involves hiring, training, and supervision of seasonal staff. The position is also responsible for property management at the Rock’s Estate and Bretzfelder Park.

The Society for the Protection of New Hampshire Forest is a statewide land conservation organization with 10,000 members that was founded in 1901 to protect New Hampshire’s most important landscapes and promote wise use of its renewable natural resources. Today, the Forest Society owns 178 reservations in communities across the state, stewards more than 700 conservation easements and deed restrictions, and conducts ongoing programs in research, advocacy, land protection, sustainable forest management, and environmental education.

A copy of the full job description is available at: www.forestsociety.org

Interested applicants should email a cover letter and resume to Rita Carroll, Reservation Stewardship Coordinator, at recarroll@forestsociety.org. No telephone inquires, please. The Forest Society is an Equal Opportunity Employer.
Minimizing Security Gaps with Encryption

TRANSACTION DATA ENCRYPTION

Encrypting transaction data (both cardholder data and other data describing a transaction) can prevent intermediaries, such as hackers, Internet providers, application service providers, from discovering or tampering with the data. 2 approaches to encryption are commonly used to provide such protection: end-to-end encryption and point-to-point encryption (P2PE). In a P2PE solution, the data is decrypted at each stop (e.g. merchant to processor, processor to issuer, issuer to merchant). In an E2EE solution, the cardholder data is encrypted at the point of entry and decrypted only at the intended recipient end.

Both methods require and originating party to encrypt data so that it is readable only by the intended recipient. Both methods can simplify PCI compliance requirements for a merchant.

Transaction data encryption offers value to merchants. It encrypts the PAN and will/or transaction, thus eliminating the opportunity for monetization of the card data; eliminates the risk of monetization of the stolen card data, as criminals cannot monetize data they cannot decrypt; response to the admonition of ongoing issue of network compromises that assume the business has been hacked"; and it reduces a merchants PCI DSS compliance scope.

• TIP: When purchasing or upgrading to an EMV terminal with encryption capabilities, be sure your processor, POS or PC has upgradable compatible software for integration. Some iOS (Mac based) and older Windows based systems may not be able to communicate properly.

For Large Businesses

If you run a larger business that uses a customized processing setup, then you may have to play a more active role in your business’ Level 3 certification.

If your business falls into this group, you should talk to your payment processor, ISV and acquirer for guidance. Level 3 certification can take two weeks or as long as eight months to complete. It is much more costly to be Level 3 certified.

To help offset these costs, some payment processors have assembled testing kits to help businesses that are required to perform testing. Others may have to work with independent testing vendors, which offer debugging or quality-assurance services if need be.

The bottom line is this: If you think your business is large enough to warrant a substantial active role in Level 3 testing, contact your acquirer and payment processor for guidance.

How Much Do the EMV-Capable Terminals Cost?

EMV terminals are already on the market and come in forms ranging from the simplest card processors to POS systems that can run loyalty programs from a tablet.

Continued on page 19
EMV continued

While the seemingly endless options make it too much to cite specific prices, we can make some educated guesses based on freely available information online.

A normal, card-only terminal will likely cost anywhere from $100 to $500. The final price will be contingent on features such as available memory, screen size, operating system and even connectivity. For restaurateurs, there are portable card-only terminals that can connect via Bluetooth, Wi-Fi or even through a cellular connection.

Integrated POS terminals may run into the thousands of dollars. While not as simple as a stand-alone terminal, many modern POS terminals offer advanced capabilities, including inventory management, customer statistic management and other functions.

Whatever you do, be on the lookout for promotions from acquirers, processors and even the brands themselves.

Each has already spent money in order to implement EMV and make everyone’s payment system more secure, and they will likely be willing to work with you to ensure your lasting business.

The most common manufacturers of EMV compliant terminals include PAX, Verifone, FirstData, Dejavoo, Ingenico, and Hypercom. Mobile units for phone and tablet transactions include Square, Intuit GoPayment and PayPal and many other providers.

What Should I Look for When Choosing a Terminal?

Choosing the right terminal will vary from business to business. If your business has only one stationary location where you accept payments, you may not need a wireless terminal with lots of memory or detailed screens. Likewise, if you run a restaurant that seats more than four tables of four, then investing in portable terminals that link to a host might be a good investment.

Either way, consider the features your business needs against the cost required to purchase them. Remember that you want to keep your payments secure, but you also want to be as cost-effective as possible while doing it.

That being said, even though U.S. cardholders will likely use Chip-and-Signature to verify their purchases, strongly consider investing in a PIN-capable EMV terminal for the long-term. It’s hard to predict what will happen, but the possibility of issuers adopting PIN-only cards in the coming years is a very strong possibility.

Some issuers are also electing to enable contactless EMV, which works using NFC (near field communication) technology. Contactless EMV payments are designed to make payments a breeze by allowing customers to simply tap their cards against a terminal. It’s a payment method worth considering if your business deals with rapid, smaller transactions.

Another possibility—and quite an immediate one—is mobile payment acceptance. The major card brands have invested heavily in creating standards for mobile payments, and both Apple and Google have been making strides to get their emerging payment systems on a variety of smartphones. If your business serves a mobile-friendly demographic, the ability to accept convenient mobile payments may set your business apart from the rest of the crowd.

Not only will your customers’ transactions be more secure but EMV terminals also save your business money in the long run by being able to refuse fraudulent transactions at the source.

EMV is a standard is already appearing on your customers’ cards in the form of a “smart chip.” So, if the “liability shift” incentive got your attention, then the steps to successfully migrate your business to accepting EMV payments will be an effort worthwhile. These steps include:

Continued on page 20
1. Audit Your Hardware
Take a look at your existing payment-processing hardware. Do you have simple, stand-alone terminals? Do you have a “canned” or “drop-in” solution that works with your existing cash register or point-of-sale (POS) terminal?

Make a list of your current hardware, so you can compare apples to apples when buying new hardware.

- **TIP:** If you’re considering a hardware upgrade to accept mobile payments, then now might be the time to do so. Why upgrade twice in the next five years at twice the cost when you can do it once and be done?

2. Discuss Your EMV Hardware Options With Your Merchant Acquirer, Payment Processor and (If Required) Independent Software Vendor (ISV)
Your business’ merchant acquirer can help guide you to payment processors that they work with, who in turn can recommend solutions that fit your business.

If your business uses a heavily customized POS, then your ISV should be involved in any equipment EMV purchase, as they will have an important role to play in EMV Certification. For a complete guide on Merchant Acquirers, Payment Processors, Independent Software Vendors and the rest of EMV basics, go to EMV Essentials article.

3. Purchase Your New Hardware
This will likely be done through your payment processor or a recommended technology vendor. If you have any last-minute questions about your new hardware, these are also the parties to ask.

- **TIP:** Some vendors will offer “Chip-and-Signature” terminals alongside “Chip-and-PIN.” While it’s tempting to go with the signature terminal, opting for the PIN terminal helps you accept PIN purchases from international customers now and prepare for domestic PIN transactions in the future.

4. New Terminal Level 3 Certified (If Applicable)
If your payment processor is a single credit-card reader, or if it’s a “drop-in” solution meant to work minimally with your existing POS, then may not need to perform any Level 3 certification; the payment processor and/or acquirer may have already taken care of it.

5. Encrypted or Non-encrypted Terminals & POS equipment.

6. Train Your Employees
Once your equipment is certified, you will need to train your employees about how EMV works. Here are a few procedural things to keep in mind:

- EMV transaction amounts must be entered into the terminal before a credit card is inserted.
- For most terminals, EMV cards are inserted chip-first and chip-side up.
- EMV credit cards must remain in the terminal for the entire length of the transaction. If a card is pulled out before the transaction is completed, then the transaction is cancelled.

So while the process of migrating to EMV transactions may seem tedious, it’s definitely worth your time. Knowing the terminology when developing your needs with your merchant service provider will help you in your search.

Recognize the Difference Between “Chip-and-PIN” and “Chip-and-Signature”
Most EMV markets use the Chip-and-PIN method of completing a transaction, similar to the way a debit
Weed Control in Conifer Seedbeds

Peachey, Associate Professor, Dept. of Horticulture, Oregon State University Extension Service,
Revised June 2015

Conifer seedlings are extremely poor competitors during the first 2 years in a seedbed. Consequently, it is imperative to select a site that contains few weeds, or weeds that can be controlled with current technologies. Complete elimination of all perennial weeds and proper seedbed preparation is essential. Constant surveillance coupled with regular and timely weed control practices is required to maintain weed-free seedbeds and nurseries. Consult labels for tolerant crops.

CONIFER SEEDBEDS - Preemergence Control before Conifers Germinate

Glyphosate (Roundup, Glystar, Etc)

Rate Consult labels
Time Apply to emerged weeds just before conifer seedlings emerge using similar techniques described on the label under “cropping systems” for various cereal and vegetable crops.
Remarks Also, consult the Vegetable Crops section of this handbook for information about the stale seedbed technique. Use lower rates on vigorous annual weeds. Inhibits production of three amino acids and protein synthesis.
Caution Do not exceed 10.6 lb ai/A (10.6 quarts/A) per season.
Site of action Group 9: inhibits EPSP synthase
Chemical family None generally accepted

Oxyfluorfen (Goal 2XL)

Rate 0.25 to 1 lb ai/A (0.5 to 2 pints/A)
Time Preemergence to weeds and conifers
Remarks Irrigate with 0.5 to 0.75 inch water or rain for preemergence control of annual grass and broadleaf weeds. Goaltender is a contact herbicide with some soil residual activity.
Site of action Group 14: protoporphyrinogen oxidase inhibitor
Chemical family Diphenylether

CONIFER SEEDBEDS - Established Crops, After Transplanting, or Preemergence Weed Control after Conifers Germinate

Dimethenamid-P + pendimethalin (Freehand 1.75G)

Rate 100 to 200 lb (1.75 to 3.5 lb ai/A)
Time Apply 3 days after transplanting conifers and prior to weed emergence.
Remarks Conifer species including Douglas-fir, western red cedar and western hemlock. Activate herbicide with brief irrigation. Inhibits seedling roots and/or shoots.
Caution Do not apply to seedbeds.
Site of action (dimethenamid-P) Group 15: inhibits very long chain fatty acid synthesis; (pendimethalin) Group 3: microtubule assembly inhibitor
Chemical family (dimethenamid-P) chloroacetamide and (pendimethalin) dinitroaniline

Flumioxazin (BroadStar)

Rate 150 lb/A
Time Apply after transplanting.
Remarks Irrigate within one hour after application to wash the herbicide from plants and activate the herbicide. Remove weeds and other debris from soil surface before applying.
Caution Do not apply to plants grown from seed unless one year old. Do not apply to moist or wet foliage. Do not apply more than 300 lb/A per year.
Site of action Group 14: protoporphyrinogen oxidase inhibitor
Chemical family N-phenylphthalimide
Weed Control in Seedbeds continued

Napropamide (Devrinol 50 DF)

Douglas fir, fir, hemlock

**Rate:** 4 lb ai/A (8 lb/A Devrinol DF)

**Time:** Apply anytime to weed free surface and irrigate immediately with 1” to 2” water

**Remarks** Irrigate within one hour after application to wash the herbicide from plants and activate the herbicide. Remove weeds and other debris from soil surface before applying.

drought, heat, or low fertility. More mature grasses and quack grass can be controlled but may need two applications. Annual bluegrass and all fine fescues resist treatment. Inhibits fatty acid production, cell membranes, and new growth.

**Caution** Do not tank-mix with other pesticides or apply within 5 days of other pesticide treatments. Grazing is prohibited.

**Site of action** Group 1: acetyl CoA carboxylase (ACCase) inhibitor

**Chemical family** Aryloxyphenoxy propionate

Sethoxydim (Segment)

**Rate** 0.28 to 0.47 lb ai/A (36 to 60 fl oz/A)

**Time** Apply at optimum growth stage listed on the label.

**Remarks** Identify susceptible grasses. Control often is erratic on grasses stunted or stressed from drought, high temperatures, or low fertility. Resistant grasses include

**CONIFER SEEDBEDS—Spot Treatments with Selective Equipment

Glyphosate (numerous products)

**Rate** Wiper: 33% solution

**Time** Apply with selective wiper when weeds are at least 6 inches taller than crop but after active growth stage of conifer, when buds are mature.

**Remarks** Mix 1 gal product in 2 gal water. Avoid contact with desirable vegetation. Inhibits production of three amino acids and protein synthesis.

**Caution** Do not broadcast over conifers in nurseries. Although not explicit on the label, this use is included under industrial uses.

**Site of action** Group 9: inhibits EPSP synthase

**Chemical family** None generally accepted

glyphosate (several products)

**Rate** Consult label for rate

**Remarks** Spot treatments applied with a paint brush or similar device to curly dock, Canada thistle, and horsetail have proven satisfactory if extreme care is taken to avoid contact with conifer seedlings. (See comments above.)

**Site of action** Group 9: inhibits EPSP synthase

**Chemical family** None generally accepted
New Products

Hydra- Hume

Hydra-Hume is a humic acid product that is added to dry fertilizer to help enhance the performance of ground applied nutrients. It contains fulvic acid which helps with root growth and distribution of nutrients throughout the tree and humic acids which retain nutrients within the soil profile. Hydra-Hume has positive and negative charges that attach to soil particle and fertilizer to give the soil more holding capacity so more nutrients are available for the tree.

Hyper-Active

Hyper-Active is an adjuvant which is designed to enhance the efficacy of pesticides. It increases the coverage and adhesion of the active ingredient applied. Hyper-Active contains a positively charged (cationic) surfactant that adheres to the negatively charged surface of plants and insects. The cationic surfactant in Hyper-Active begins to “soften” the outer surface layer due to infiltration of water from the spray deposit. This product is excellent choice when applying mite sprays.

Tapout

Tapout is a product that growers can consider adding to the tank. It is a clethodim product shoes formulation allows for only one pound of active ingredient compared to the tow pound material is most common on the market. Even with less active ingredient. Tapout is able to outperform the competition, and can be used over the top of trees any time of year when grasses need to be controlled.

Megafol

Megafol is a product that aids in stress relief for plants. It is made with natural plant extracts for plants. Megafol works by up regulating the plants natural defenses against cold, heat, or drought to help the plant adjust for the situations. It can be applied before an event, such as a predicted frost, or after the event has taken place. It also aids in the uptake of nutrients through the roots.

ENC

ENC is another stress relief aid. It is a nutritional product which includes, NPK, EDTA micro nutrients, and a vitamin package, which helps the plant to repair itself when faced with stress. It does this by producing more plant sugars, providing amino acids, and helps to generate rapid growth development.

Erase

Erase by Precision Labs, is a spray system cleaner that exceeds capabilities of ordinary tank cleaners. It will remove oily residues in sprayer lines and also degrades plant protection products. Erase ensures thorough clean out and eliminates the risk of cross-contamination that leads to phytoxicity.

The use rate for Erase is 2 qts. Per 100 gallons. Nozzles, screens and strainers should be removed and cleaned separately. Rinsate solutions may be disposed of on growing crops.

Captiva

Captiva™ a natural repellent bio-insecticide from Gowan, has received federal registration frpm the EPA. It controls thrips and spider mites and will be sold into a wide variety of specialty crop segments.

Source Of Information: Great Lakes Journal, Summer 2015; Featured Supplier: Helena Chemical American Nursery Magazine Spring 2015;
**Weed Control in Seedbeds continued**

**Oxyfluorfen (Goal 2XL)**

**Rate** 0.25 to 0.5 lb ai/A (1 to 2 pints/A Goal 2XL)

**Time** Apply in at least 20 gal water at least 5 weeks after emergence or bud break, or while trees are dormant and weeds are less than 4 inches tall.

**Remarks** Two or three applications may be needed to control some weeds, especially if they have four or more leaves. Allow 24 hours after application for evidence of contact activity before irrigation. Acts as a contact herbicide.

**Site of action** Group 14: protoporphyrinogen oxidase inhibitor

**Chemical family** Diphenylether

**Remarks** Does not control emerged weeds. Consider use of several products at low rates to achieve broad spectrum weed control. Inhibits root growth.

**Site of action** Group 15: inhibits very long chain fatty acid synthesis

**Chemical family** Acetamide

**Oxadiazon (Ronstar 2G)**

**Rate** Consult label

**Time** Apply uniformly with granular applicator any time to weed-free surface. Irrigate with 0.25 to 0.33 inch water immediately after application.

**Remarks** Pink family (Caryophyllaceae) weeds—chickweed, mouseear chickweed, and pearlwort—are resistant. Controls weed seedlings by contact action during emergence.

**Site of action** Group 3: microtubule assembly inhibitor

**Chemical family** Dinitroaniline

**Prodiamine (Barricade 4L)**

**Rate** 1.3 to 2.6 lb ai/A (21 to 48 oz/A)

**Time** Apply any time after soil has settled around newly transplanted seedlings or liners.

**Remarks** Activate herbicide with 0.5 inch irrigation within 14 days of application or before weed seeds germinate.

**Caution** Do not exceed 2.3 lb ai/A per year in a given area

**Site of action** Group 3: microtubule assembly inhibitor

**Chemical family** Dinitroaniline
Weed Control in Seedbeds continued

S-metolachlor (Pennant Magnum)

Rate 1.24 to 2.48 lb ai/A (1.3 to 2.6 pints/A Pennant Magnum)

Time Apply any time to weed-free surface.

Remarks Activate herbicide with brief irrigation. Use lower rates on porous media and reduced weed infestations. Gives about 60-day control, less under very wet conditions. Inhibits seedling roots and/or shoots.

Caution Do not exceed 4 lb ai/A per year in a given area.

To minimize potential for crop injury, consider using several products at low rates to achieve broad-spectrum weed control.

Site of action Group 15: inhibits very long chain fatty acid synthesis

Chemical family Chloroacetamide

transaction works. Most issuers in the United States, however, will be issuing Chip-and-Signature cards.

With that in mind, be ready to explain the difference to your employees and customers.

- **TIP**: If you elect to purchase a Chip-and-PIN terminal, you will be able to process PIN transactions from international customers, as well as domestic ones when PIN cards start to hit the U.S. market. If you choose to only integrate Chip-and-Signature transactions, you may need to upgrade your equipment again when Chip-and-PIN transactions become more popular domestically.

7. Educate Your Customers on EMV

Some of your customers might have questions about how to use their cards. Since you’ve already trained your employees, your business will be in a great position to gain trust by answering your customers’ questions about EMV.

- **TIP**: During the Canadian EMV migration, merchants noticed that many customers accidently left their credit cards in the machine instead of removing it after completing a transaction. An informative placard near your POS terminals may help alleviate this and other issues.

In order to avoid liability for fraudulent charges, these steps must be completed by Oct. 1, 2015. Once you complete your migration, your business will be connected to the robust security network that EMV provides, which checks the validity of your customer transaction data throughout the course of the transaction.

Continued on page 28

**AUGER TRANSPORTER FOR SALE**

Retail for $900. Asking $500. Transporter only. Auger not included.

If you use an auger to plant, you need an Auger Transporter

Call Joe Meichelbeck 508-839-6739

Email: jrm44@verizon.net

“Sure it costs more. We have to squash bugs by hand.”
Please help support the New England Christmas tree industry by becoming part of the special people needed to man the outdoor and indoor booths during The Big E. We need display trees for show, pruning, and boughs for wreath making and any demonstration talents you can provide.

**September 17–October 5**

**NECTA Outdoor Booth Contact**

John Coward at: [jcow65@msn.com](mailto:jcow65@msn.com) or mail to: 13 Congamond Southwick, MA 01077
Tel: (413) 569-6724

Or

Abby Tonry at: [abbytonry@hotmail.com](mailto:abbytonry@hotmail.com) Mail to: 324 Exeter Road, Hampton Falls, NH 02844
Tel: (603) 6213 or Evenings (603) 772-2724

**THE BIG E VOLUNTEER SHEET**

NAME ____________________________________________________________

ADDRESS __________________________________________________________

CITY _________________________ STATE ________ ZIP ___________________

PHONE # (_____) ____________________ Email: __________________________

I would like to work at the : ______ Christmas Tree NECTA Outdoor Booth

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Number of working adults ____________ I can demonstrate how to: _______________________

*If you cannot meet your scheduled obligation, please contact another tree grower to replace you.*
Mass. Christmas Tree Association

Annual Budget Report

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<td>454</td>
<td>1,031</td>
<td>800</td>
<td>(231)</td>
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<tr>
<td>Interest</td>
<td>205</td>
<td>186</td>
<td>200</td>
<td>14</td>
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<tr>
<td>Apparel/Misc.</td>
<td>175</td>
<td>298</td>
<td>250</td>
<td>(48)</td>
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<td><strong>Total</strong></td>
<td>$ 7,674</td>
<td>$ 8,195</td>
<td>$ 9,590</td>
<td>$ 1,395</td>
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<tr>
<td><strong>Disbursements</strong></td>
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<tr>
<td>Marketing</td>
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<td>$ 800</td>
<td>$ 1,200</td>
<td>$ 400</td>
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<td>321</td>
<td>290</td>
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<td>Meetings</td>
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<td>2,750</td>
<td>2,800</td>
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<td>Dues/Subscr.</td>
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<td>1,675</td>
<td>2,200</td>
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<tr>
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<td>Stipends</td>
<td>1,650</td>
<td>1,650</td>
<td>1,650</td>
<td>-</td>
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<tr>
<td>Misc</td>
<td>-</td>
<td>100</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 11,667</td>
<td>$ 7,765</td>
<td>$ 8,750</td>
<td>$ 985</td>
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<td><strong>Surplus/Deficit</strong></td>
<td>$ (3,993)</td>
<td>$ 430</td>
<td>$ 840</td>
<td>$ 410</td>
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**Cash Balances**

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<th></th>
<th>2014 Start</th>
<th>2015 End</th>
<th>2016 End</th>
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<td><strong>Start</strong></td>
<td>$ 43,160</td>
<td>$ 39,167</td>
<td>$ 39,597</td>
<td>$ 430</td>
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<td><strong>End</strong></td>
<td>$ 39,167</td>
<td>$ 39,597</td>
<td>$ 40,437</td>
<td>$ 840</td>
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</table>

**Comments:**
1. includes 119 members for 2016
2. assumes Shearings continues online
3. 2015 estimate based on June 30 YTD activity

Prepared by Joe Meichelbeck
Treasurer

HELP WANTED
Communications Coordinator

The MCTA is looking for a person with computer skills; knowledge of internet navigation and email correspondence. Additional experience helpful using data entry, and familiarity with Word, Outlook, and Excel a plus. Position entails organizing incoming and outgoing all web based communications of the Association (notices, newsletters, IPM, email lists, etc.) This will be a stipend paid position to begin in January 2016.

For more information please contact:
Gloria Ellsworth or Jim Colburn

“What a terrible nightmare! I was the $50,000 a year farmer and you were the $80,000 a year housewife!”
EMV Definitions:

AES – Advanced Encryption Standard:
A fancy name for the NIST approved encryption standard. VeriShield Total Protect uses a form of AES, Variable AES in its “Hidden Encryption.”

AIO – All in One

CDMA – Code Division Multiple Access. Wireless communication technology that allows multiple people to use a single radio channel

EMV – Stands for Europay, MasterCard and VISA:
The global standard for inter-operation of integrated circuit cards (IC cards or “chip cards”) and IC card capable point of sale (POS) terminals and automated teller machines (ATMs), for authenticating credit and debit card transactions.

FIPS – Federal Information Processing Standard:
A wide-ranging group of security regulations by the U.S. Fed. Gov’t, regulating computer systems.

FPE – Format Preserving Encryption:
A type of encryption whereas the encrypted string of information is the same length and structure as the original data.

GPRS – General Packet Radio Services is a packet-based wireless communication service using data rates for mobile phone and computer users.

HSM – Hardware Security Module:
A type of crypto processor that manages digital keys. It’s a physical device that usually plugs into a server or other computer.

NFC – Near Field Communication:
An evolution of traditional RFID technology that allows two-way communication between a mobile device (e.g. Smartphone) and another electronic device.

P2PE- Point to Point Entry. Provides hardware to hardware data encryption to a secure terminal distribution chain in the POS system

PA DSS – Payment Application Data Security Standard:
A set of regulations set forth by the PCI SSC that offer best practices/guidelines for the development/integration of applications/software used to process credit card transactions.

PAN – Primary Account Numbers:
Basically, the number found on your credit card.

PCI DSS – Payment Card Industry Data Security Standard:
A set of regulations set forth by the PCI Security Standards Council (SSC) that govern the security of data (backup files)

PED – PIN Entry Device:
A device whereas a user enters a pin in conjunction with a card of some sort.

POS – Point of Sale:
Where the transaction/purchase occurs. Usually a piece of hardware or hardware/software combination.

PTS – Pin Transaction Security:
Another PCI SSC set of guidelines for PEDs and EPP (encrypted pin pad devices)

SRED – Secure Reading and Exchange of Data:
Refers to the fact that our PTS 3.0 devices can read and encrypt the data right at the device.

TRSM – Tamper Resistant Security Module:
A hardened, secured module built into our devices, that encrypts data.

Tokenization – data security, is the process of substituting a sensitive data element with a non-sensitive equivalent, referred to as a token, that has no extrinsic or exploitable meaning or value.

Resources for EMV Information:

http://smartcardalliance.org
http://emvco.com
http://compliance101.com
http://merchantequip.com
http://quickbooks.intuit.com/technology
http://paymentsource.com
http://point-of-sale.com
http://verifone.com
http://advancedsystems.com
Christmas Tree and Wreath Contests 2015

Brought you by N.E.C.T.A  & the Big E

Eligibility: Open to All New England Growers & Wreath Makers-Decorators

Entry Deadline: Thursday, September 17, 2015 in AM

Judging is on September 17th

General Tree Contest Rules:  

Tree Classes: Pine, Spruce & Fir

1. Farms may enter a maximum of three (3) trees. One (1) tree per tree class.
   No flocked, colored or sprayed trees allowed. Tree handle must be trimmed and 6”-9” long.
2. Trees must have TWO (2) waterproof shipping tags attached to butt, with name & address
3. Tree(s) entered for prize money must be from 6’ to 9’ from tip to butt
4. Tip lengths must be appropriate for tree taper

≈ Deliver all entries to: Mallary Complex Rotunda between 8 am – 12 noon ≈

General Wreath Contest Rules: 

Wreath Classes: Plain and Decorated

1. Two (2) entries permitted. One for each class
2. Wreaths to be made with natural conifer greens, holly and/or Laurel or assorted greens
3. Constructed on a 10” or 12” ring.
4. Attached ID tag with name and address to wreath (s)

Show Prizes

<table>
<thead>
<tr>
<th>Christmas Trees:</th>
<th>Grand Champion Prize: Includes a additional $50 premium</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st</td>
</tr>
<tr>
<td></td>
<td>$ 85.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Decorated Wreaths</th>
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<tbody>
<tr>
<td></td>
<td>1st</td>
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<td></td>
<td>$ 55.</td>
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<table>
<thead>
<tr>
<th>Plain Wreaths</th>
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<tbody>
<tr>
<td></td>
<td>1st</td>
</tr>
<tr>
<td></td>
<td>$ 55.</td>
</tr>
</tbody>
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For more information on how to enter or detailed “Tree and Wreath Contest Rules” go to: www.thebige.com or contact John Coward, the show superintendent at (413) 569-6724
Highlights of the Check Off Program

Information summarize from the Proposed rules in the Federal Register Vol. 75, No. 215
Website for more information and details: http://christmastreepromotion.com/

The goal of the national research and promotion program for Christmas trees is set out to help the industry address the many market problems the currently faces with competition. Fresh-cut Christmas trees compete directly with artificial Christmas trees. Artificial tree companies advertise heavily through the fall and Christmas seasons. The Check off program is expected to help stabilize prices and grow demand for fresh-cut Christmas trees. The duties and goals of the Christmas Tree Promotion board is to conduct research in respect to image, desirability, use, marketability, quality, product development or production of Christmas trees, to the end that the marketing and use of Christmas trees may be encouraged, expanded, improved, or made more acceptable and to advance the image, desirability, and quality of Christmas trees. The check-off program enables a stable funding base to build markets, enhance the image and reputation of Christmas trees and promote them trees now and into the future.

Key points:

Assessments to begin for Christmas Season 2015 (fiscal period is August 1 – July 31)

Qualifications for Assessment:

- Christmas tree growers/producers and importers who sell over 500 trees per year.
- Exemptions: Claim for exemption must file application for each fiscal period
  a. Producers who produced domestically less than 500 Christmas trees or importers that import less than 500 Christmas trees during a fiscal period
  b. Organic Christmas tree producers and importers operating under an approved National Organic Program (NOP) are eligible to be labeled as 100% organic are exempt.
  c. Exemption applies immediately with issuance of certificate (from the board)
- Initial assessment rate of $.15 per treat domestically or imported in the United States
- Payment of Assessment due FEBRAURY 15 of each fiscal year
- Importers pay assessment through Customs (at border); or 30 days after importation.
- Rate reviewed after 3 years
- In the future, a late payment fee may be imposed on unpaid assessments after due date
- After 3 years, rate may increase or decrease: no more than $.02 per Christmas tree during a fiscal period, not exceed $.20 per tree or not be less than $.10 per tree
- Evaluation and review of effectiveness of program after 5 years; Referendum vote held after 7 years for continuation, amendments or termination of program

Data Collection:

(estimated respondents: 3,100 domestic producers and 163 importers)

- Farm/Producer data collected by board in fall of 2015 (tentative)
- Request of information has been made to State Associations
- Submission of Information includes:
  o Basic farm information,
  o Number of trees assessment is to paid:
  o Date assessment was paid
  o Trees or farm exempt from assessment
  o Records must be maintained for 2 years beyond applicable fiscal period
  o Records would be kept confidential by officers and board members and any related agents of the USDA

Check Off highlights continued on page 35
M.C.T.A. MEETING HIGHLIGHTS

Chicopee, MA: Attendance: Dan and Kathy Pierce, meeting at 6:30 P.M.
In attendance were Dan and Kathy Pierce, Seth Cranston, John Coward, Greg Davagian, Scott Dwinell, Larry Flaccus, Susan Lopes, Dave Radabaugh, Casey Vanderwalk and Jim Colburn.

President Dan Pierce: The minutes of the last board meeting were read and approved.

TREASURER’S REPORT: Joe Meichelbeck updated the board on revenue and spending against the 2015 budget. Cash on hand is a little ahead of budget and spending is on track. He noted advertising revenue continues to decline trend of the last several years. Overall, Joe expected a slight budget surplus for the year. After a motion and a second, the Treasurer’s report was accepted.

SECRETARY REPORT: Jim Colburn, reported 118 current members. A thank you letter was received from Massachusetts agriculture in the classroom for the associations calendar sponsorship along with the groups annual report and a calendar order form.

NECTA Report: John Coward reported this is a quiet time for efforts around the Big E exhibit thus there was little activity to report. Seth Cranston reminded the group there would be a need for a large tree again at the exhibit and we should get the request out to our members along with a notation of $100 stipend for the tree.

Annual Meeting – the date and location of the annual meeting is set at August 22, 2015 at the D. J. Hussey farm in Townsend, MA. Three contact hours of pesticide credits have been approved. Plans for programs on pesticide regulations in Massachusetts, weed management and a field walk through with Dr. Cowles.

“Shearings”/Website - the board reviewed a report from Gloria Ellsworth along with her plans and recommendations for Shearings. Lori wishes to retire from the editor role and along with the recent spring issue (Mar. 25) plans for 2 other issues this year, summer and fall (Jul. 25 and Oct. 25). The report outlined a number of options to transition to a new editor to carry on which shearings as well as other options for transitioning to a new format of communications with our members. There was also information and options presented related to our website and advertising revenue.

The ensuing discussion raised points and questions about the Associations effort to communicate with our members. It was noted that there is a huge amount of information currently available on the Internet. The Association has made great prize in the last several years in maintaining a current email system that reaches most of our members and through glorious efforts we no longer print and snail mail Shearings. We’ve regularly emailed Dr. Lamb’s Christmas tree IPM update and it was noted much more relevant material is available on the Internet. There was a general agreement during the discussion that Shearings has served its purpose and the Association could not continue to produce and distribute its own newsletter. We should transition to a “Communications Coordinator” and begin by advertising the role in the next year Shearings.

Twilight Meetings - there are 2 twilight meetings arranged at this time. The 1st or 2nd Wednesday in June with the 1st meeting in sterling at Evergreen Farm posted by the Gaulds and later in the month a meeting in Chicopee, at the Paul Bunyan Farm and nursery posted by Susan Lopes. Details need to be worked out soon an effort to get formation out to our members. Efforts will also be made to arrange a meeting in the Eastern part of the state.

Thank you to Susan Lopes and The Paul Bunyan Farm and Nursery.
Respectfully submitted, Jim Colburn, Secretary
2015 Massachusetts Pesticide use Report

Failure to submit this report will result in loss of eligibility for renewal of your license. Each certificate or licensed pesticide applicator is accountable for the submission of their Pesticide Use Report. The timely submission of this report is a requirement for maintaining and applicators certificates and or licensing status.

This report must be submitted by May 1, 2016

Please be sure to provide all necessary information in the spaces provided. Photocopy the form as needed or download extra forms from the department’s website: www.mass.gov/agenecies/agr/pesticides

(1) Company or Farm Information

<table>
<thead>
<tr>
<th>Name:</th>
<th>Phone (   )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>Suite/Unit/Apt</td>
</tr>
<tr>
<td>City:</td>
<td>State:</td>
</tr>
</tbody>
</table>

(2) Acreage Under Production: List Total Agricultural Acreage   (See instructions)

(3) Applicator information: List all applicators whose 2015 pesticide applications are covered by this Report. Indicate their certification/license number. Include seasonal and part time employees. Use additional sheets if necessary. Include company name and location on each new sheet.

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<thead>
<tr>
<th>Applicator Information</th>
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<tr>
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<td>License Number</td>
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Check here to indicate “No Use” during the current reporting year.

If you had “No Use during the current reporting year, you need only to complete the front section.
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<th>Application Method</th>
<th>Major Crop or Site Treated</th>
<th>Total Amount of Concentrate Applied</th>
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(9) Person responsible for preparing this report (please print)

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<tr>
<th>Name</th>
<th>Company</th>
<th>City</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature</td>
<td>Phone (   )</td>
<td>Date</td>
<td>Zip</td>
</tr>
</tbody>
</table>
At 9:00 A.M., President Rob Leab opened the annual business meeting. He thanked the Cranston family for hosting the event and welcomed Association members, speaker Dr. Nicholas Brazee from UMass Extension, OESCO representative Robin Gingras, East Commerce Solutions representative Jerry LaCasse and Rick LeBlanc from the Massachusetts Department of Agricultural Resources.

President Leab pointed out there was a sign-up sheet at the registration desk for anyone interested in hosting a twilight or the annual meeting next year and also a pesticide sign-in sheet for those present.

He then called for the minutes of the 2013 annual meeting. Instead of a reading of the minutes from the 2013 meeting, Dan Pierce offered a motion to accept the minutes of last year’s annual meeting as printed in the August issue of Shearings as well as posted at the registration desk. The motion was seconded by Peter Sweet and accepted by a show of hands.

Secretary Jim Colburn reported the Association had 120 members for 2013-14. The newest member, Nick Graham of the Texas Tree Farm in Charlton was present and introduced to the Association. There were three twilight meetings attended on average by 33 members. For planning future meetings, the Officers and Directors were interested in feedback from the membership on scheduling. One meeting was held on a Saturday evening to avoid the heavy evening traffic in the eastern part of the state. On a motion by Rob Leab and seconded by Dan Pierce, the report was accepted by a show of hands.

The Treasurers’ report was given by Joe Meichelbeck. He presented a break even Budget for 2015 based on 120 members. There was an operating deficit for 2014 offsetting part of the surplus from the previous year, due to the timing of some income and expense between the two years. The ending cash balance was approximately $39,000. On a motion by Rob Leab and a second by Seth Cranston, the Treasurer’s report was accepted as presented.

President Leab called upon Secretary Jim Colburn to present the proposed amendment to the Association’s By-Laws. The proposed change is to Article III, Section 2, and relates to the payment of annual dues. The Directors wished to make the payment of annual dues more equitable. A major benefit to members is the listing of their farm on the Association website especially during the selling season. The annual membership year runs from August 1st to July 31st. Those joining after the Christmas season and before the next membership period do not participate in that important benefit. The proposal changes a June 1st date to January 1st and extends the period from 13 months to 18 months that the initial dues payment covers. The Secretary also noted that to amend a By-Law, a two-thirds vote of members present and voting at any annual or special meeting of the Association is required. Dan Pierce presented a motion to accept the By-Law change. Rob Leab seconded the motion and after a vote by those present, the motion passed unanimously. (see Nomination election results on page 35)

After no further nominations the president asked for a motion. Joe Meichelbeck moved that one ballot be casted for the slate as presented. The motion was seconded by Dan Pierce and after a show of hands, the slate was elected unanimously. The President asked for a motion to adjourn. Having received a motion and a second and in agreement by all, the meeting adjourned at 9:20 A.M. ....... continued on page 35
Check off Program Highlights continued

General Promotion Board Obligations

- Required Submissions to Secretary of Agriculture
  - Quarterly and Annual Budgets within timeline outlined
  - Objectives and expenses for each program, plan or project
  - Determine assessment rate changes after 3 years
  - Approval of funds shifting from one program/project to another
  - Approval to borrow funds during initial startup of programs (federal grants)
- Serve without compensation
- Only use a maximum of 10% for Administration, maintenance and functions (normally it's 15% for most USDA commodities)
- Report to the Secretary of Agriculture for approval all actions and changes and submit timely financial statements as required in proposed rules;

- Required Submissions to Secretary of Agriculture

2015 ADVERTISING RATES AND REQUIREMENTS (Jan-Dec.)

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<th>Dimensions</th>
<th>One (1) Issue</th>
<th>Two (2) Issues</th>
<th>1 Yr. Print &amp; Web Ad</th>
</tr>
</thead>
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<td>$169.00</td>
<td>$314.00</td>
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<td>52.00</td>
<td>98.00</td>
<td>182.00</td>
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<tr>
<td>Vertical</td>
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<td>52.00</td>
<td>98.00</td>
<td>182.00</td>
</tr>
<tr>
<td>1/4 Page</td>
<td>3 5/8” w x 5” h</td>
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<td>64.00</td>
<td>119.00</td>
</tr>
<tr>
<td>Lg. Business Card</td>
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<td>54.00</td>
<td>102.00</td>
</tr>
<tr>
<td>Business Card</td>
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<td>22.00</td>
<td>42.00</td>
<td>78.00</td>
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</table>

Website Only Advertising Rate: Effective April 25, 2015
Banner Ad: Across Bottom of page
Business Card Ads = small rectangular ad

<table>
<thead>
<tr>
<th>Size</th>
<th>Dimensions</th>
<th>One (1) Issue</th>
<th>Two (2) Issues</th>
<th>1 Yr. Print &amp; Web Ad</th>
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Submit Deadlines 2015:
- Feb 15: (March Issue)
- June 15 (July Issue)
- September 15 (October Issue)

2014 MCTA Annual Meeting Notes Continued

The President then opened the election of Officers and Directors. The following slate was presented:
President – 2 year term – Dan Pierce
Treasurer - 1 year term - Joe Meichelbeck
Secretary - 1 year term - Jim Colburn
Director 2nd term to expire 2017 – Seth Cranston
Director 2nd term to expire 2017 – Larry Flaccus
Nominated from the floor:
Director 1st term to expire 2017 – Dave Radenbaugh

Respectfully submitted, Jim Colburn, Secretary

RENEW YOUR MEMBERSHIP TODAY!
MCTA Membership Dues and Farm details for Website are due
August 1, 2015

Shearings Editor:
Gloria Ellsworth
246 School Street
Northborough, MA 01532
Shearings2u@verizon.net or 508-414-3888