UF UNIVERSITY of FLORIDA | IFAS EXTENSION

Citrus Notes

Polk County Extension Service
PO Box 9005, Drawer HS03 • Bartow, FL 33831-9005
(863) 519-8677, Ext. 109 • wcoswalt@ufl.edu

Hillsborough County Extension Service
5339 County Road 579 • Seffner, FL 33584-3334
(813) 744-5519, Ext. 131

Vol. 10-06

July/August 2010

Inside this Issue:

Dear Growers,

Not too long ago (this week) we got word of the USDA's Farm Service Agency offering a tree assistance program for damages due to natural disasters. The initial filing deadline is quick so don't delay. There are a number of educational events scheduled for this summer, specifically in August so please check them out. If you are interested in additional information and education materials on citrus black spot checkout the citrus block spot resources article. July is the month with the greatest number of lightning fatalities of the year and Florida ranks first in the number of deaths due to lightning strikes in the U.S. I have included an article that should help remind us of this potential summer hazard. We also have a number of important bits of information in the pesticide news section this month.

Enjoy the issue,

Chris Oswalt
Citrus Extension Agent
Polk/Hillsborough Counties
863-519-8677 Extension 108
P.O. Box 9005, Drawer HS03
Bartow, FL 33831-9005

USDA/Farm Service Agency, Tree Assistance Program (TAP)

FSA announces TAP for commercial orchardists and nursery tree growers. To be eligible for TAP, producers must have suffered greater than an 18% death loss per individual stand due to a natural disaster. The deaths must have occurred in the same calendar year as the disaster. Natural Disasters include plant disease, insect infestation, drought, fire, freeze, flood, lightning, or other occurrence of such magnitude or severity so as to be considered disastrous, as determined by FSA. TAP is a cost-reimbursement program, with payments covering up to 70 percent of replant costs and 50 percent of pruning, removal and other salvaging costs for replacing or salvaging damaged trees. Producers can receive assistance for up to 500 acres of trees, bushes or vines. Eligible losses must have occurred on or after Jan. 1, 2008, and before Oct. 1, 2011. Signup deadlines are as follows: Losses occurring for Calendar Year 2008, 2009, and January 1, 2010 to May 7, 2010 deadline is **July 6, 2010**, May 8, 2010 to September 30, 2011 is within 90 calendar days of the disaster event or date when the loss of trees, bushes, or vines is apparent. Producers must have purchased a policy or plan of insurance under the Federal Crop Insurance Act or Noninsured Crop Disaster Assistance Program, or for 2008, obtained a waiver of the risk management purchase requirement through the buy-in provision. There are limited exceptions to this rule.

For more information on the new TAP program, please contact your local county FSA office at (863) 533-2051 ext. 2 in Polk County, (813) 752-1474 ext. 2 in Hillsborough County or the website at http://www.fsa.usda.gov.

Citrus Black Spot Website and Educational Materials

The following web address has additional information on citrus black spot: http://www.crec.ifas.ufl.edu/extension/black_spot/citrus_black_spot.htm . We also have available at the office a number of laminated diagnostic and management materials for black spot. Just give Gail (863-519-8677) a call before you stop by to make sure we still have the materials in stock and available. To-date citrus black spot has been found in Collier and Henry Countries.

2010 Citrus Expo

The 2010 Citrus Expo will be held on Wednesday, August 18 and Thursday, August 19, 2010, at the Lee Civic Center in Fort Myers. The following link has additional information and pre-registration: http://www.citrusexpo.net/ . I have also included a program brochure at the end of the newsletter.

2010 Packinghouse Day and Indian River Post Harvest Workshop

The 2010 annual Packinghouse Day will be held on August 26, 2010 at the Citrus Research and education Center in Lake Alfred. The following day the Indian River Postharvest Workshop will be held at the Indian River Research and Education Center in Ft. Pierce. A major focus of this year's program will be citrus black spot. The following link has additional information on the program: http://postharvest.ifas.ufl.edu/ .

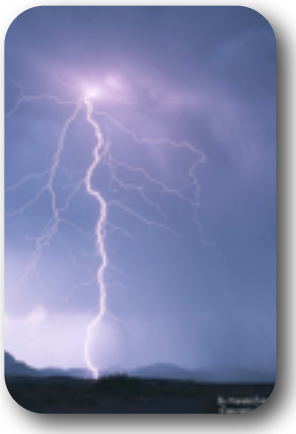
International Research Conference on HLB

The 2nd International Research Conference on Huanglongbing "Reaching Beyond Boundaries" will be held in Orlando from January 10th to the 14th, 2011.

Huanglongbing (HLB) has spread to, and is increasing in, the western hemisphere and continues to increase to near pandemic proportions throughout the citrus-producing areas of the world. Major citrus production areas presently without HLB are experiencing the introduction and spread of the disease's psyllid vector(s). The globalization of the disease and its vector places all citrus production at risk. International commerce and travel, and disease management remain key issues affecting introduction and spread of the pathogen and pest. HLB continues to be a global issue that threatens the continued successful production of citrus worldwide.

For more information visit the following website: http://www.irchlb.org .

Lightning Safety



The state of Florida ranks number 1 in the country in the number of lightning deaths from 1990 to 2003. During this period there were 126 deaths in Florida (Fig. 1) due to lightning. This compares to 52 deaths due to lightning in Texas which is ranked number 2 in the country. In the year's 2000-2009 there were 70 Florida deaths due to lightning (Fig. 2). From 1959 to

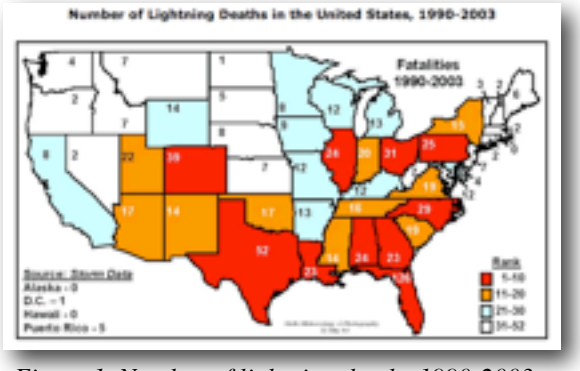


Figure 1. Number of lightning deaths 1990-2003.

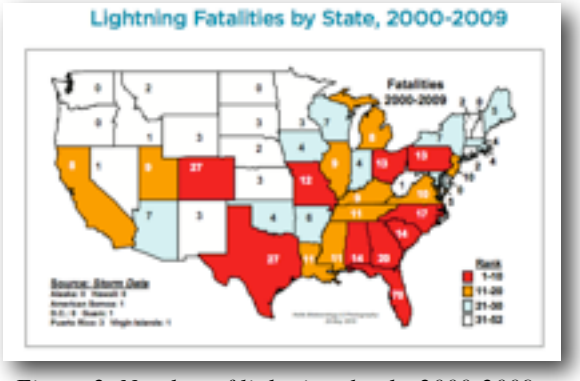


Figure 2. Number of lightning deaths 2000-2009.

2009 in Florida the total number of lightning deaths were 460 again highest in the country (Fig. 3). In all three time spans Florida has the

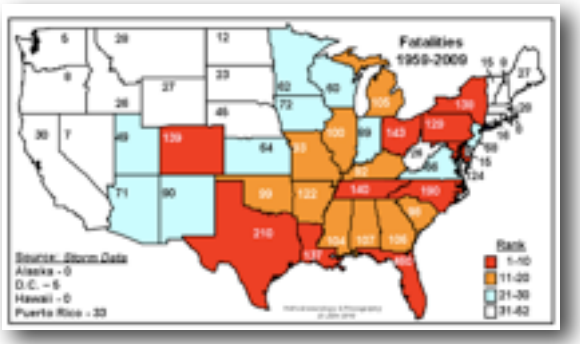


Figure 3. Number of lightning deaths 1959-2009.

highest number of lightning deaths in the country. Table 1 indicates the number of lightning fatalities to-date this year by location and activity.

To date, there have been 11 fatalities in 10 states in 2010
North Carolina has suffered two lightning deaths.

No.	Date	Day	ST	City	Age	Sex	Location	Activity	Victim
1	5/1	Sat	IN	New Haven	18	M	In yard	Sheltering under tree	
2	5/8	Sat	CT	Bridgeport	29	M	On jetty fishing	Headed to shore	
3	5/30	Sun	LA	Baton Rouge	8	M	In yard near tree	Family gathering	
4	5/31	Mon	OH	Clairsville	33	M	Prison yard	Headed to building	
5	6/4	Fri	NC	Madison Cty	25	F	Near mountain top	Hiking	
6	6/12	Sat	CO	Chaffee Cty	53	M	Highway	Riding motorcycle	
7	6/15	Tue	MO	Jennings	34	F	Under tree	Delivering mail	
8	6/15	Tue	NC	Graham	19	M	Under tree	Had been playing soccer	
9	6/20	Sun	WY	Meeteese	70	M	Open hilltop	Getting better cell phone reception	
10	6/24	Thu	TX	Stowell	37	M	On Boat	Crabbing	
11	6/29	Tue	GA	McDonough	14	M	Outside home	Sheltering under tree	

Table 1. Lightning fatalities to date 2010.

The following myth's and truth's come from the National Weather Service, Lightning website at: http://www.lightningsafety.noaa.gov/myths.htm .

Myth: Lightning never strikes the same place twice.
Truth: Lightning often strikes the same place repeatedly, especially if it's a tall, pointy, isolated object. The Empire State Building is hit nearly 25 times a year.

Myth: If it's not raining or there aren't clouds overhead, you're safe from lightning.
Truth: Lightning often strikes more than three miles from the center of the thunderstorm, far outside the rain or thunderstorm cloud. "Bolts from the blue" can strike 10-15 miles from the thunderstorm.

Myth: Rubber tires on a car protect you from lightning by insulating you from the ground.
Truth: Most cars are safe from lightning, but it is the metal roof and metal sides that protect you, NOT the rubber tires. Remember, convertibles, motorcycles, bicycles, open-shelled outdoor recreational vehicles and cars with fiberglass shells offer no protection from lightning.

Myth: A lightning victim is electrified. If you touch them, you'll be electrocuted.
Truth: The human body does not store electricity. It is perfectly safe to touch a lightning victim to give them first aid. This is the most chilling of lightning myths. Imagine if someone died because people were afraid to give CPR!

Myth: If outside in a thunderstorm, you should seek shelter under a tree to stay dry.
Truth: Being underneath a tree is the second leading activity for lightning casualties. Don't do it!

Myth: If you are in a house, you are safe from lightning.
Truth: A house is a safe place to be during a thunderstorm as long as you avoid anything that conducts electricity. This means staying off corded phones, electrical appliances,

wires, TV cables, computers, plumbing, metal doors and windows.

Myth: If thunderstorms threaten while you are outside playing a game, it is okay to finish it before seeking shelter.
Truth: Many lightning casualties occur because people do not seek shelter soon enough. No game is worth death or life-long injuries. Seek proper shelter immediately if you hear thunder. Adults are responsible for the safety of children.

Myth: Structures with metal, or metal on the body (jewelry, cell phones,Mp3 players, watches, etc), attract lightning.
Truth: Height, pointy shape, and isolation are the dominant factors controlling where a lightning bolt will strike. The presence of metal makes absolutely no difference on where lightning strikes. Mountains are made of stone but get struck by lightning many times a year. When lightning threatens, take proper protective action immediately by seeking a safe shelter – don't waste time removing metal. While metal does not attract lightning, it does conduct it so stay away from metal fences, railing, bleachers, etc.

Myth: If trapped outside and lightning is about to strike, I should lie flat on the ground.
Truth: Lying flat increases your chance of being hit by a ground current. If you are caught outside in a thunderstorm, you keep moving toward a safe shelter.

Updated Recommendations for Lightning Safety – 2002 American Meteorological Society (AMS)

INTRODUCTION

Lightning has been the second greatest cause of storm-related deaths (after floods) in the United States during the past 40 years. Fortunately, however, through public awareness and the applications of safety guidelines, the vast majority of lightning casualties (deaths and injuries) can be easily avoided. The American Meteorological Society has recently approved a Statement on Lightning Safety Awareness (www.ametsoc.org/AMS) which exhorts all citizens, but especially those responsible for the safety of groups engaging in outdoor activities, to further their awareness of lightnings safety issues. The National Weather Service, in conjunction with cooperating organizations including the Red Cross, has initiated a Lightning Safety Awareness Week (www.lightningsafety.noaa.gov). This paper provides supplemental information to the AMS Statement as well as assembles background materials benefiting all involved in lightning safety awareness activities. It also serves as an update to a review of the topic published in the Bulletin in 1999 (Holle et al., 1999).

Lightning kills more people each year on average than hurricanes and tornadoes combined. When corrected for underreporting, there are about 100 lightning fatalities annually in the United States (Cherington et al., 1999). Beyond the tragic loss of life, however, are the many injuries. Only about 10% of lightning strike victims are killed; 90% survive. But many of the estimated 1000 survivors suffer severe, life-long injury and disability.

It is common for people to refer to the chance of being struck by lightning as an improbable or unlikely event. Yet actual statistics say otherwise. Lightning strikes the ground approximately 25 million times each year in the United States (Orville and Huffines, 2001). Most people greatly underestimate the probability of being involved in a lightning strike. According to the National Weather Service, the chance of an individual in the United States being killed or inured during a given year is one in 240,000. Assuming an average

life span of 80 years, a person's odds over their lifetime becomes one in 3000. Assuming the average person has ten family members and others with whom they are close, then the chances are one in 300 that a lightning strike will closely affect a person during their lifetime.

Although absolute personal protection from lightning cannot reasonably be achieved, following a set of simple guidelines can substantially reduce lightning casualties. The vast majority of lightning casualties can be avoided through improved public education. The public needs to be made aware of the magnitude of the lightning hazard and motivated to practice lightning safety. The following background information will provide some insights into issues related to lightning safety, including the physics of lightning, lightning climatology, lightning casualty demographics, and the medical aspects of lightning strikes.

LIGHTNING PHYSICS

Lightning can strike many kilometers from the parent thunderstorm, well outside the rain area and even beyond the visible thundercloud (Lopez and Holle, 1999). Lightning can also strike from debris clouds several tens of minutes after the parent thunderstorm has decayed. Thus lightning safety requires a large standoff distance from thunderstorms and a long standoff time after apparent thunderstorm decay.

Lightning does not "decide" where it will strike until the stepped leader descending from the cloud is about 30 m from the ground or object that is struck. Thus, short objects in an open area can be struck by lightning even if a tall object is nearby. If lightning strikes a nearby object, shock can result either by direct contact or a side flash. If lightning strikes the ground, the high voltage gradients cause currents to flow in concentrated channels on the surface or within the soil, and can injure people nearby. The associated step voltages and surface arcs, respectively, can be deadly more than 40 m from the lightning strike point. In addition, there can be upward discharges tens of meters in length from tall objects (including people) that are located within tens of meters from the strike point.

Thunder produced by a lightning strike travels one mile (1.6 km) every five seconds. Thus, counting the number of seconds between the visible "flash" and the audible "bang" and dividing by 5, provides the distance in miles. In noisy urban areas, thunder may not be audible more than a few miles from the flash, and is rarely heard for distances of more than 10 miles (16 km) even in the most quiet environments. The distance between successive lightning strikes in some thunderstorms can be as large as 5 miles (8 km) — at times even more.

LIGHTNING CLIMATOLOGY

The average areal density of cloud-to-ground lightning flashes in the contiguous United States has been objectively measured by the National Lightning Detection Network (NLDN). The greatest flash density is found in central Florida, where each square kilometer is struck more than ten times each year. High flash densities are also found throughout the Southeast and Midwest. Almost half the nation has a flash density greater than 4 flashes per square kilometer per year. No place in the United States is totally free of a lightning threat. Also, the annual average flash density can be misleading. Some places may have a low flash density over 12 months, but a high peak seasonal value. For example, for a few weeks in summer, the Front Range of the Rocky Mountains in Colorado approaches the flash density of Florida. Also, some intense mesoscale convective systems can unleash more than 100,000 flashes during their life span while traversing several states.

While lightning can occur anywhere and anytime during the year, lightning activity has a strong annual cycle in the United States. The lightning rate shows a broad peak in summer centered on July, with a rapid increase during May and a rapid decrease in September. The lightning flash rate continues to decrease through winter, with a minimum occurring during January. Most lightning occurs during the afternoon or early evening, between 1200 and 2000 LST, peaking at about 1600 LST. Portions of the upper Midwest have an evening or nocturnal peak between 2000 and 0400 LST (Orville and Huffines, 2001).

LIGHTNING CASUALTY DEMOGRAPHICS

Lightning casualty statistics reflect geographical differences in lightning strike density, population density, outdoor activity levels and public lightning threat awareness. Casualties occur most often during July, and between 1200 and 1800 LST, with the peak around 1600 LST. Sunday has the most casualties, followed closely by Saturday. Late afternoon is the deadliest period. Males are struck by lightning in significantly greater numbers than females. These factors presumably reflect higher rates of outdoor exposure.

The relative frequency of lightning casualties in the United States by location or activity is listed in Table1. When lightning is imminent or occurring, avoid these activities like your life depends on it — it does. The studies from which these results are taken did not include higher elevation as a factor. Though not listed here, higher elevation produces an enhanced risk when thunderstorms threaten.

Rank	Location/Activity	Relative Frequency
1	Open areas (including sports fields)	45%
2	Going under trees to keep dry	23%
3	Water related activities (swimming, boating & fishing)	14%
4	Golfing (while in the open)	6%
5	Farm & construction vehicles (with open cockpits)	5%
6	Corded telephone (#1 indoor source of lightning casualties)	4%
7	Golfing (while mistakenly seeking shelter under trees)	2%
8	Using radios & radio equipment	1%

Table 1. Lightning Casualties in the U.S. by Location or Activity.

Many lightning casualties occur before the thunderstorm rains have moved into the area. The casualty rate actually decreases while the rainstorm is in progress and people seek inside shelter — from the rain. Even larger numbers of casualties occur after the rain dissipates. People, in too much of a hurry to go back outside, ignore the fact that lightning continues to be a threat outside the precipitation areas.

In terms of absolute numbers of lightning casualties, the top five states are, in order: Florida, Michigan, Pennsylvania, North Carolina, and New York. But a more meaningful measure is the number of lightning casualties

per capita; the top five states become, in rank order: Wyoming, New Mexico, Florida, Arkansas, and Colorado. The Rocky Mountains states have both relatively low annual lightning flash and population densities, yet many people tend to be outside precisely when the lightning hazard is at its greatest. The degree of outdoor at-risk behavior in occupation and recreation, combined with poor public awareness can lead to distressingly high casualty rates. All states have some degree of lightning threat and all persons should be aware of the need for and practice lightning safety.

MEDICAL ASPECTS OF LIGHTNING

Medical authorities have recently been learning more about the range of impacts of lightning on its victims (Cooper, 1995). The medical aspects of lightning are detailed on several of the websites listed in Table 1, and a few key highlights are presented here. If there are lightning casualties, immediately calling "9-1-1" for assistance is paramount. Death results from cardiac arrest and/or stopped breathing at the time of the strike. First aid for lightning strike victims is CPR or mouth-to-mouth resuscitation, respectively. Medical authorities recommend that if numerous persons are involved in a lightning incident, treat the apparently dead first — as many can be revived. While only about one in ten of those struck by lightning now die, lightning victims often suffer severe, life-long debilitation. These injuries are primarily neurological, with a wide range of symptoms, and are sometimes difficult to diagnose. The most frequent symptoms are memory deficit, sleep disturbance, chronic pain, dizziness, and chronic fatigue. These symptoms may not appear or be recognized until some time after the lightning injury, sometimes months after the initial injury. Lightning survivors sometimes have trouble processing information, are easily distracted, and have personality changes. These impair their ability to earn a living and maintain relationships, which exacerbates the psychological problems lightning survivors often have in dealing with their injuries. Family, friends, and colleagues need to continue providing emotional support and not abandon or isolate them. "Lightning Strike Electric and Shock Survivors International" is the main support group for lightning survivors and provides an invaluable service.

BASIC LIGHTNING SAFETY GUIDANCE

The following guidelines have been compiled by lightning safety experts and reflect the current thinking on this topic. Please note the knowledge base on lightning is continuously expanding so readers are advised to keep abreast of new developments as they occur.

The National Weather Service routinely issues watches and warnings for thunderstorms that can produce tornadoes and other severe weather (high winds and large hail). It does not, however, issue warnings based solely upon lightning. Moreover, a storm need be neither tornadic nor severe in order to produce copious numbers of lightning strikes. When considering lightning any thunderstorm, by definition, has the potential to produce a "severe" lightning strike. While adhering to lightning safety rules can at times be inconvenient, one must consider the alternative of not following these simple measures. Adults are responsible for the safety of children under their care; this includes matters of lightning safety. In this spirit, the National Collegiate Athletic Association (NCAA) has issued guidelines for lightning safety for those in charge of team sports. K–12 educators have become active in promoting lightning safety in schools (Roeder et al., 2001). Ultimately each of us is responsible for our own safety during lightning storms. The most important fact is to realize that no place outdoors is safe when thunderstorms are nearby. Implementing a lightning safety and awareness plan is a multi-level process:

Level-1: If you are planning outdoors activities, obtain the weather forecast beforehand. Schedule outdoor activities around the weather to avoid exposure to the lightning hazard. Know your local weather patterns.

Level-2: If you are planning to be outdoors, identify and stay within travelling range of a proper shelter. Employ the "30–30 Rule" to know when to seek a safer location. The "30–30 Rule" states that when you see lightning, count the time until you hear thunder. If this time is 30 seconds or less, go immediately to a safer place. If you can't see the lightning, just hearing the thunder means lightning is likely within striking range. After the storm has apparently dissipated or moved on, wait 30 minutes or more after hearing the last thunder before leaving the safer location. The "30–30 Rule" is best suited for existing thunderstorms moving into the area. However, it cannot protect against the first lightning strike. Be alert to changes in sky conditions portending thunderstorm development directly overhead. Larger outdoor activities, with longer evacuation times, may require a longer lead-time than implied by the "30–30 Rule."

Level-3: When lightning threatens, go to a safer location. Do not hesitate. The lightning casualty lore is replete with tales of persons just about to make it to safety when they were struck. Even a few extra minutes lead time can be life saving.

What is a safer location? The safest place commonly available during a lightning storm is a large, fully enclosed, substantially constructed building, e.g. your typical house, school, library, or other public building. Substantial construction also implies the building has wiring and plumbing, which can conduct lightning current safely to ground. However, any metal conductor exposed to the outside must not be touched precisely because it could become a lightning conduit. Once inside, stay away from corded telephones, electrical appliances, lighting fixtures, ham radio microphones, electric sockets and plumbing. Don't watch lightning from open windows or doorways. Inner rooms are generally preferable from a safety viewpoint.

If you can't reach a substantial building, an enclosed vehicle with a solid metal roof and metal sides is a reasonable second choice. As with a building, avoid contact with conducting paths going outside. Close the windows, lean away from the door, put your hands in your lap and don't touch the steering wheel, ignition, gear shifter or radio. Convertibles, cars with fiberglass or plastic shells, and open-framed vehicles are not suitable lightning shelters.

Level-4: If you cannot flee to a safer location, take action to minimize the threat of being struck. Proceed from higher to lower elevations. Avoid wide-open areas, including sports fields, beaches and golf courses. Avoid tall, isolated objects like trees, poles, and light posts. Avoid water-related activities such as swimming (including indoor pools), boating and fishing. Do not remain in open vehicles like farm tractors, cabless construction machinery, riding lawnmowers and golf carts (sun roofs offer no protection). Do not consider unprotected open structures such as picnic pavilions, rain shelters and bus stops. Avoid contact with metal fences, metal bleachers, or other long metal structures. And the cardinal rule remains**:** Do not take shelter under trees to keep dry during thunderstorms.

Level-5: If circumstances or a series of bad decisions have found you outside of a shelter, far removed from a safer place when lightning is occurring, there are still measures to be taken. If lightning is about to strike, it will sometimes provide a very few seconds of warning. Sometimes your hair may stand on

end, your skin will tingle, light metal objects will vibrate or you will hear a crackling or "kee-kee" sound. If this happens and you're in a group, spread out so there are several body lengths between each person. Once you've spread out, use the lightning crouch. Put your feet together, squat down, tuck your head, and cover your ears. When the immediate threat of lightning has passed, continue heading to the safest place possible.

Level-6: If the worst happens, there are key Lightning First Aid guidelines. First, if at all possible, call "9-1-1" immediately. Since all deaths from lightning strikes result from cardiac arrest and/or stopped breathing, begin treatment as soon as possible. CPR or mouth-to-mouth-resuscitation is the recommended first aid, respectively. It is an enduring myth that strike victims retain electrical charge. They do not. There is no hazard posed to a care giver. If the storm's lightning is ongoing and represents a continuing risk to responders, consider moving the victim to a safer location

No lightning safety guidelines will provide 100% guaranteed total safety, but the preceding guidelines will greatly minimize the lightning hazard to humans.

LIGHTNING DETECTION TECHNOLOGY

Hand-held lightning detectors have become more affordable and more popular in recent years. While potentially helpful it should be noted their performances may not have been independently, rigorously and objectively verified. There is anecdotal evidence that some can fail to detect weak and/or intermittent, but still deadly, lightning. There are also many examples of people installing and using the detectors incorrectly. Moreover, these devices should be used only as a back-up to the "30–30 Rule." There are commercial services available which will provide automatic notifications when lightning has been detected by the National Lightning Detection Network (NLDN) within user-specified distances to an activity/site. The alert can be sent via pager, fax, e-mail or cell-phone. These services are reasonably priced and can be a useful component of a lightning safety plan for organized outdoor activities. Alternately, private forecasting firms can provide tailored lightning alerts along with additional weather related services. The best detection technology, however, cannot provide long lead times from a thunderstorm forming rapidly overhead. Thus, in the end, those responsible must still watch the sky for developing thunderstorms and be ready to proceed to a safer location hopefully before the first lightning is produced.

SUMMARY

Lightning is *the* underrated storm-related weather hazard. Until recently, relatively little attention has been paid to lightning safety, as compared to tornado, hurricane and flood safety. Perhaps because its victims often fall one at a time, without graphic property destruction, it garners less media attention. Fortunately, the vast majority of lightning's casualties can be easily, efficiently and inexpensively avoided. Public education is the key. The public, especially those charged with managing outdoor activities, must become more aware of the magnitude of the hazard and become educated about lightning safety procedures.

The meteorological community can play a key role in improving this aspect of weather safety in the United States and around the world. We call on professional meteorologists, especially broadcasters and those in a position to affect the required changes, to proactively engage the public in lightning safety education. Lightning Safety Awareness Week, organized by the National Weather Service in conjunction with partnering or-

ganizations, is an excellent example of an effective public awareness activity.

REFERENCES

Cherington, M., J. Walker,. M. Boyson, R. Glancy, H. Hedegaard and S. Clark, 1999: Closing the gap on the actual numbers of lightning casualties and deaths. Preprints, *11th Conf. on Applied Climatology*, Dallas, TX, Amer. Meteor. Soc., 379-380.

Cooper, M.A., 1995: Emergent care of lightning and electrical injuries. *Sem. Neurol.*, **15**, 268-278.

Cummins, K.L., M.J. Murphy, E.A. Bardo, W.L. Hiscox, R.B. Pyle and A.E. Pifer, 1998: A combined TOA/MDF technology upgrade of the U.S. National Lightning Detection Network. *J. Geophys. Res.,* **103** (D8), 9035-9044.

Holle, R.L., R.E. Lopez and C. Zimmermann, 1999: Updated recommendations for lightning safety – 1998. *Bull. Amer. Meteor. Soc.,* **80**, 2035 – 2041.

Lopez, R. E., and R.L. Holle, 1999: The distance between successive lightning flashes. NOAA Tech. Memo. ERL NSSL-1XX, National Severe Storms Laboratory, Norman, OK, 28 pp. [Available from NSSL, 1313 Halley Circle, Norman, OK 73069.]

Orville, R.E. and G.R. Huffines, 2001: Cloud-to-ground lightning in the United States: NLDN results in the first decade, 1989- 1998. *Mon. Wea. Rev.,* **129**, 1179-1193.

Roeder, W.P., R. J. Vavreck, F.C. Brody, J.T. Madura and D. E. Harms, 2001: Lightning safety for schools. Preprints, *10th Symposium on Education*, Albuquerque, NM, Amer. Meteor. Soc., 89-91

Contributors to this document:

William P. Roeder*, Staff Meteorologist, 45 WS/SYR, 1201 Edward H. White II St., MS 7302, Patrick AFB, FL 32925-3238

Mary Ann Cooper, MD, Dept. of Bioengineering and Emergency Medicine, University of Illinois at Chicago

Ronald Holle, Meteorologist, Vaisala-GAI, Tucson, AZ

John Jensenius, Warning coordinator Meteorologist, National Weather Service Forecast Office, Gray, ME

Jack Jordan, State Farm Insurance Co.

Richard Kithil, Jr., President, National Lightning Safety Institute, Louisville, CO

E. Philip Krider, Ph.D., Professor, Institute of Atmospheric Physics, University of Arizona, Tucson, AZ

Rocky Lopes, Ph.D., Manager, Disaster Education, American Red Cross National Headquarters, Washington, DC

Walter A. Lyons, Ph.D., CCM, FMA Research, Inc , Fort Collins, CO

James Vavreck, Science Teacher, Henry W. Eggers Middle School, Hammond, IN

Katie Walsh, Ed.D, Director of Sports Medicine/Athletic Training, East Carolina State University, Greenville, NC

Christoph Zimmermann, Lightning Safety Consultant, Wxline, LLC, Tucson, AZ

* Corresponding Author

Pesticide News and Information

Agri-Flex™ Miticide/ Insecticide

Please note the following information provided by Syngenta on a new product.

Effective June 25th 2010, the state of Florida approved Agri-Flex Miticide/Insecticide for use on citrus. Based efficacy testing over the last 2 years Syngenta believes they have a product that will deliver a great deal of utility to growers as they work to manage citrus rust mite, Asian citrus psyllids, citrus leafminers and other important pests such as adult root weevils. You will note that the label requires use with horticultural spray oil which means growers will be applying a combination containing 3 MOA's. Through this combination our goal is to help preserve and maintain the working utility of abamectin and thiamethoxam, both of which are crucial production tools.

Methidathion Voluntarily Cancelled

Methidathion (Supracide®) has been voluntarily cancelled by the registrant. This organophosphate generally has low use in Florida with the exception of tropical fruit. Most recent surveys from 2005 to 2007 have little or no report of use, indicating that methidathion usage has dropped considerably. However, organizations or extension specialists should be aware of the impending cancellation. The provisions for the treatment of any existing stocks of methidathion are as follows:

- After December 31, 2012, registrants are prohibited from selling or distributing existing stocks of products containing methidathion.

- After December 31, 2014, persons other than registrants are prohibited from selling or distributing existing stocks of products containing methidathion.

- After December 31, 2014, existing stocks of products containing methidathion already in the hands of users can be used legally until they are exhausted, provided that such use complies with the EPA-approved label and labeling of the affected product. (USDA OPMP Email, 5/4/10).

Splat® CLM

On April 22, the FDACS conditionally registered the mating disruptor product Splat® CLM for citrus leafminer on all crops and non-crop areas (including residential areas) where the citrus leafminer is detected. The EPA Reg. No. for the ISCA Technologies, Inc., product is 80286-15. (FDACS letter, 4/22/10).

Mustang® Insecticide

On March 23, the Florida Department of Agriculture and Consumer Services (FDACS) approved the special local need (SLN) registration - SLN FL-100002 - for FMC Corporation's insecticide zeta-cypermethrin (Mustang®) for aerial low volume application in citrus to control Asian citrus psyllid. The EPA registration number for the product is 279-3126. (FDACS PREC Agenda, 5/6/10).

Sevin® SLN's for Citrus Root Weevil Control Cancelled

Based on a request by Bayer CropScience, the EPA has approved for cancellation two SLNs (FL-890036 & FL-890037) that address car-

baryl (Sevin®) use in citrus for weevil control. (Federal Register, 5/5/10).

For Blueberry Growers

Based on a request by IR-4, the EPA has approved tolerances for the herbicide clethodim (Select®). Tolerances of importance to Florida include blueberry and peach. (Federal Register, 5/12/10).

CITRUS EXPO[sm]

Citrus Expo[sm] and Citrus Industry magazine wish to express appreciation to the following organizations for their collective program-planning input and promotional support:

Gulf Citrus Growers

Highlands County Citrus Growers

Peace River Valley Citrus Growers Association

Certified Indian River Fruit

UF UNIVERSITY of FLORIDA

Citrus Expo Details

Admission:

Registration in advance **OR** on site required for admission. Complimentary attendance and meals provided both days to bona fide grove owners and managers, citrus production managers, professional crop advisers, association representatives and board members and the citrus research community. Preregistered growers are entered to win a John Deere gun safe sponsored by Everglades Farm Equipment.

Non-exhibiting company and vendor personnel may become a sponsor at any level for trade show, lunch and seminar admission, or purchase an individual one- or two-day admission pass. Visit **www.CitrusExpo.net** for details.

Events & Prize Drawings:

Must be present to win. Doors open 8:00 a.m. both days. Prize Drawings: Wed. and Thurs. – 9:00 a.m. and 1:30 p.m. Gun Safe Grand Prize Drawing 1:30 p.m. Wed., Aug 18. Some restrictions apply, rules at prize drawing area and registration desk.

Trade Show:

More than **150** citrus-related exhibits inside the air-conditioned Lee Civic Center arena plus outdoor displays.

Meals in Trade Show:

Continental breakfast 8-9:30 a.m. both days. Lunch 12:00 p.m. - 2:00 p.m. both days. Meal tickets distributed with name badges at check-in.

HOST HOTELS

Holiday Inn Fort Myers (I-75 South, Exit 128)
9931 Interstate Commerce Dr., Ft. Myers, FL 33913
Phone: 239-561-1550 Fax: 239-561-9999
Ask for the $85.00 Citrus Expo[sm] Rate

Homewood Suites by Hilton Fort Myers
(I-75 South, Exit 128)
16450 Corporate Commerce Way, Ft. Myers, FL 33913
Phone: 239-210-7300 Fax: 239-210-7301
Ask for the $94.00 Citrus Expo[sm] Rate

Courtyard by Marriott Fort Myers
(I-75 South, Exit 128)
10050 Gulf Center Drive, Ft. Myers, FL 33913
Phone: 239-332-4747 Fax: 239-332-4748
Ask for the $99.00 Citrus Expo[sm] Rate

Hilton Garden Inn Fort Myers Airport/FGCU
(I-75 South, Exit 128)
16410 Corporate Commerce Way, Ft. Myers, FL 33913
Phone: 239-210-7200 Fax: 239-210-7201
Ask for the $89.00 Citrus Expo[sm] Rate

Sponsors "as of May 21, 2010"

DIAMOND

Bayer CropScience
Everglades Farm Equipment
Syngenta

PLATINUM

Carden & Associates • Florida Citrus Mutual • Florida Department of Citrus • Florida Farm Bureau Federation • Gowan Company • Gulf Citrus Management, Inc. • IRRA-CHEM Corp. • Magna-Bon • Stallings Crop Insurance • Tropicana • Vigiron

GOLD

Chemtura AgroSolutions • Diamond R Fertilizer • DuPont Crop Protection • E Co Consultants • Kelly Tractor Co. • KeyPlex • McLean Ag Chem, Inc. • Oxbo International • Southern Gardens • The Andersons, Inc.

SILVER

AgraQuest • Agricultural Employee Services, Inc. • BASF • Curtec of Florida, Inc. • Environmental Consulting & Tech., Inc. • Farm Credit Association of Florida • Fred Juliano Enterprises, Inc. • Index Instruments U.S., Inc. • Metal Culverts, Inc. • NuFarm Americas, Inc. • Oro Agri, Inc. • Wedgworth's, Inc.

BRONZE

Ag-Tronix, Inc. • Brandt Consolidated LLC • Custom Harvest Insurance, Ltd. • Engine Distributors, Inc. • Flo-Tec, Inc. • Growth Products, Ltd./GP Solutions • Hancor • John Deere Water • LRA Insurance • Marrone Bio Innovations • Martin Realty Florida, Inc. • Maxijet • Omega Protein • Pro Pak Software • Root Solutions, Inc. • StollerUSA, Inc. • Tessenderlo/Kerley, Inc. • The Tucker Group • Tradewinds Power Corp. • Tree-See Control Systems • Triangle Chemical • TWC Distributors, Inc. • United Irrigation Supply Inc. • United Site Services • Valent USA • Yardney Water Management

2010

CITRUS EXPO[sm]

"Research to Real Life: Applying the Latest Citrus Science"

The World's Premier Citrus Expo
August 18-19, 2010

Lee Civic Center
Ft. Myers, Florida

2010 CITRUS EXPO sm

"Research to Real Life: Applying the Latest Citrus Science"

19th Annual Citrus Expo sm Seminar Program

Lee Civic Center – Ft. Myers, FL, August 18 & 19, 2010

Wednesday 9:30 a.m. - noon and 2:00-4:00 p.m. • Thursday 9:00 a.m. - noon

CITRUS GROWER:

"Don't tell me about your three-year research programs! I need something I can use *right now!*"

CITRUS EXPO PLANNERS:

"*We hear you!*" That's why we've assembled a comprehensive day-and-a-half seminar series to help you transform research into real-life applications — *today*. No matter the size or location of your grove, you'll learn how to apply the latest science in dealing with HLB, citrus black spot and other challenges specific to your situation.

Attendance remains free to bona fide *growers*, multiple CEU/CCA credits will be available, and key presenters are again being flown in this year by Citrus Expo sm to join UF researchers on the program.

And growers, you won't want to miss the trade show for product education, food, fun, fellowship *and prizes both days*, especially during the new Grand Finale Lunch Party on the second day from noon to 2 p.m.

SEMINARS SPONSORED BY

Bayer CropScience

Seminar Topics

- **Promising advancements to fight the bacterial causal agent of HLB**
- **Current status of HLB in Florida and overview of management options**
- **Building an effective, quality psyllid control program for your grove**
- **Mineral nutrition and plant disease**
- **Integrating a foliar nutrition program into existing pest and disease sprays**
- **Systemic acquired resistance (SAR): from basic concepts to applied reality**
- **The potential uses of SAR in citrus disease management**
- **Understanding residue limits**
- **Awaiting permanent HLB answers for citrus — pros and cons of peach and blueberry as medium-term options**
- **Citrus black spot (CBS) in Brazil**
- **Integrated CBS control in Florida**
- **The cost of psyllid, nutrition and CBS control**

The seminar program has been planned as a complete series to best benefit growers attendees. Please plan to attend both days' sessions.

Find updated schedule details as they develop at www.CitrusExpo.net

Register to Win!!

All pre-registered growers are entered in the grand prize drawing for a John Deere gun safe from Everglades FARM EQUIPMENT

Preregistration Form

CITRUS EXPO sm "Research to Real Life: Applying the Latest Citrus Science"

To register, visit www.CitrusExpo.net or mail or fax form to: Citrus Expo sm

5053 NW Hwy. 225A, Ocala, FL 34482

Phone 352-671-1909 – Fax 888-943-2224

CitrusExpo@SoutheastAgNet.com

Name: _____

Company/Farm: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

E-mail: _____

Check All That Apply

- ❑ Grove Owner, Manager, Foreman, Caretaker, Citrus Nursery
- ❑ I am a Certified Crop Adviser
- ❑ Handler, Packer, Shipper, Processor, Fruit Buyer
- ❑ Association Executives and Board Members, Government, University, Research, Legislative, Student
- ❑ Product Manufacturer, Vendor, or Supplier Representative doing business with growers or others in the citrus industry (see admission details)

Other _____

Complimentary meal tickets provided at registration desk.

Please check days you plan to attend

- ☐ Wednesday, August 18, 2010
- ☐ Thursday, August 19, 2010