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May - June 2021

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AREA 6 GOLF OUTING & TRAP SHOOT JUNE 18, 2021

NEWS



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ILLINOIS INFRASTRUCTURE REPORT CARD



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- Fratco Update on Resin Shortage (page 16)

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The ILICA News



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Educational Advisor **Professor Richard Cooke** University of Illinois

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Safety Feature: Heat Related Illnesses

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PRESIDENT'S MESSAGE



Funny how some things don't change over the course of time. As I look back to when I last served in this position, the worst president in history was in office. Hopefully, the readers are not thinking of me. Now 10 years later, he is back and it is going to get ugly for us small businessmen.

Higher costs with anything related to oil; higher taxes as well as more things taxed; new employment regulations and hiring rules; the total sellout of this country's strategic position, and a host of things not mentioned.

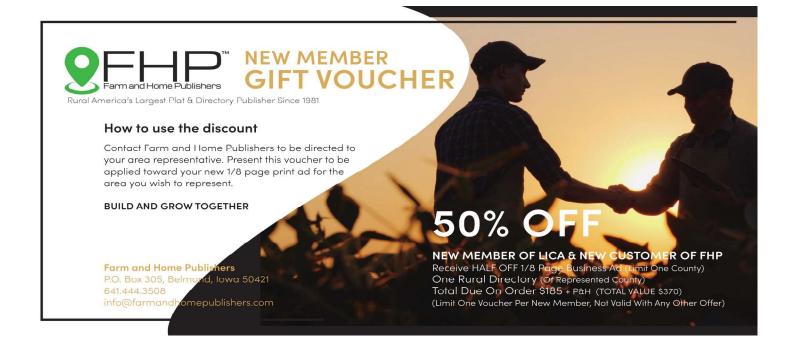
Now that you are completely depressed, perhaps I can raise your spirits. After all, we are LICA members. We take it all in stride and do some darn fine work being environmentalists long before it was all the rage. This year looks to be a fine year for putting that on display once again with the several projects we have on the docket from a tube and riser and bioreactor, a wetland construction, and work at the Farm Progress show once again. And since the tilers in our group will be waiting on tile till who knows when, perhaps we will see your smiling faces ready to help at these sites this summer. For the new members, these projects are a great way to get to know each other; this coming after the end of the day when the beverages are broken out to wash down the dust. Though with the proliferation of cabs, it doesn't quite measure up to the old days on a 760 scraper and good stiff spring breeze. Now that was when one really needed a mask mandate.

On a personal note, I feel honored that you would have me serve again as president. My goals for this term are to implement the strategic plan we have worked on the last couple years and to encourage all members to be on the committees, serve as directors, even be an officer. While honored to serve once again, I must say that I am disappointed that I needed to. You are really missing something when you don't just ask anyone that has. The real value of a trade association is in the information sharing, fellowship, and support of its members with each other. While the benefits are great when you can use them, don't deny yourself the greatest one, involvement. Even an introvert like myself did it, why can't you?

Bring on the new year, LICA is ready for it. Let's kick the tires and light the fires. Work safe, work smart, and maybe we might have a dime left after taxes come next year!

Sincerely,

Steve Anderson



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NEW MEMBERS	MEMBERS2021 BOARD MEMBER MTG. ATA = absentP = presentC = ca					ancelled meeting		
		Area / Director	Feb	Mar	May	Aug	Sep	Nov
ive Contractors		Pres: Steve Anderson	Р	с				
		VP: Eric Layden	A	с				
Brownfield		1st VP: Jon Seevers	Р	С				
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ervices, Inc.		Area 4 - Lee Bunting	Р	с				
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nick@jrhservicesdecatur.com		Area 7 - John Barttelbort	Р	с				
e: jrhservicesdecatur.com		Area 8 - Tom Beyers	P	c				
		Associate Dir: D. Randolph	P P	c c				

BOARD & MEMBERS' MEETING SCHEDULE

Unless changed by the Board during the year, the ILICA business meetings are scheduled as follows:

May 15, 2021 - Regular Meeting of the Board:

Virtual & In-Person, Decatur

Aug. 21, 2021 - Picnic & Members' Meeting: Kennedy Farm Drainage, Colfax

Exact location, meeting times & other details will be published in the ILICA News and sent to members via mail and/or email.



Associate Members

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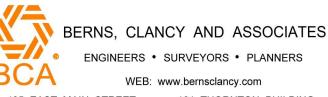
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ILLINOIS INFRASTRUCTURE REPORT CARD

Adapted from the 2018 Report Card for Illinois' Infrastructure executive summary. Find the full summary and report at: https://infrastructurereportcard.org/stateitem/illinois/



Infrastructure Matters

Infrastructure is the backbone of our daily lives and communities. While we don't always acknowledge it, the condition of our infrastructure has a very real impact on every person and business. We all depend on roads and bridges to get us where we are going, water infrastructure that delivers clean water to our taps, and a system of inland waterways, ports, rail and transit to move goods and people that fuels our economy.

Illinois has a unique competitive economic advantage being at the crossroads of the country's rail, air, roadway and waterway systems. Historically, large investments were made in our infrastructure to capitalize on these advantages, which created and promoted growth and advantages for Illinois' economy and citizens. In recent years however, there has been a trend of underinvestment that threatens our competitive advantage and the health, safety and welfare of our citizens.

The Report Card was created to help Illinois understand the state of our infrastructure. As civil engineers, our job is to plan, design, construct, and maintain our infrastructure networks and this document allows us the opportunity to share that information with the public. The Report Card provides a snapshot for residents and policymakers to engage in conversation about where we are and where we want to be. We hope that this information provides the insight needed to start that conversation and ignite action.

How You Can Get Involved

2

3

Get the full story behind this Report Card at www.infrastructurereportcard.org/illinois.

Find out the condition of the infrastructure near you on the Save America's Infrastructure app available on iTunes and GooglePlay.

Ask your elected leaders what they're doing to make sure your infrastructure is reliable for the future. Use your zip code to find your list of elected officials at www.infrastructurereportcard.org/take-action.

ILLINOIS GRADE SUMMARY



About the Grades

Infrastructure is graded based on eight criteria: capacity, condition, funding, future need, operation and maintenance, public safety, resilience, and innovation. ASCE grades on the following scale and defines these grades as:

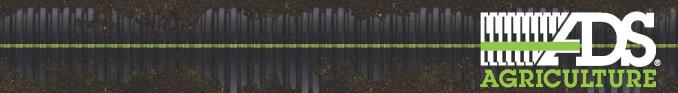


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Rick Gosser Crawford Drainage ADS Contractor

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See Rick's story at ads-pipe.com/stories.



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So, you planted a garden, lucked out when your property included fruit trees, stumbled upon a produce sale you just couldn't pass up, or joined a CSA. Good for you! Now what? What will you do with all that bounty?

You have options:

- quickly consume your harvest before it spoils
- give it away
- preserve it to enjoy in the future, or for gifting!

One of the best ways to preserve is known as "home canning"— or water bath canning, a method of food preservation that is making a big comeback.

Canning is not difficult, but it is a procedure that should be followed precisely. You begin by sterilizing canning jars in boiling water. Then, once you've filled them with fruit, salsa, tomatoes, jam, jelly, or another prepared recipe, you boil them again.

Proper water bath canning requires "heat-

processing," which means to hermetically seal the jars so that no air or tiny organisms can get in. It also kills any undesirables that may be present, like bacteria, yeast, or mold. This process destroys naturally occurring enzymes that cause food to spoil.

All you need are a few pieces of equipment, a little time, and beautifully ripe produce. Your investment now will pay off in spades come winter when you'll be able to enjoy summer all over again.

Beginners should start with fruit, jams, pickles, and tomatoes because these items are highly acidic and do not require a pressure canner.

HOW TO CAN

Wash equipment

Wash your new jars, lids and screw rings in hot, soapy water. Rinse well and drain.

Sterilize the jars, lids, rings

In an ordinary big cooking pot filled with water, place jars and lids in the water and bring to a boil over high heat. Allow to boil for 10 minutes. Keep jars hot by turning heat down to simmer until ready to fill. Note: There are canning containers that do not use both lids and rings. Some have clamp-on type apparatus, others a single lid. For beginners, I highly recommend the more reliable ring-plus-lid option. Recycled jars with lids, like that empty mayonnaise or pickle jar, will be challenging to achieve a proper safe seal.

Make the recipe

Use one of the recipes below, or another recipe of your choice (see Resources), that has been created specifically for canning. Again, if you are a beginning canner, start with a nice jam recipe or fruit in syrup.

Carefully remove jars from pot

Empty the hot water from each jar back into the pot so you won't have to heat new water later.

Place jar on cutting board or towel

Placing jars on a cold countertop could cause thermal shock, which could crack the jars. Place the funnel in the mouth of the jar; carefully ladle in the food item you have just prepared.

Allow headspace

The empty space between the top of the food and the top of the jar is called head-space. The amount of space depends on what you're canning. Your recipe should indicate the amount of headspace required by that particular item.

Release air bubbles

Air bubbles can prevent jars from sealing and may affect the color of canned goods. Get rid of bubbles by sliding a nonmetal spatula or something like a plastic chopstick between the food and the inside of the jar. Make sure the item you use has been sterilized. You don't want to introduce bacteria once you've been so careful to sterilize everything.

Clean up jars

Wipe jar rim and threads (the grooves the lid screws onto) with a damp cloth. Food left on jar rim or threads might prevent the jar from sealing once the lid and ring have been applied.

Apply lids and rings

With tongs, transfer one jar lid from the hot water to the top of each jar, making sure it is centered perfectly on top of the jar. Apply a screw ring to each jar and twist until it is just finger-tight. Do not overtighten. The ring is to hold the lid in the correct position so that the seal can take place as the contents of the jar cool.

Process

Now, you are ready to process the jars. Place them back into the large pot of hot water. Once all the jars that will fit are in the pot, add enough water to cover the jars by at least one inch.





Cover the pot and bring the water to a rapid boil over high heat. Boil jars for the required "processing time" indicated in your recipe of choice. For proper canning, water must boil rapidly during the entire processing time.

Turn off heat

Remove the lid from the large pot. Let jars cool in the water for five minutes. Remove jars from the pot, being careful not to tilt the jars. Place them on a towel. Allow to cool 24 hours.

Test for proper seal

To test each jar to make sure it is properly sealed, look at the lid from the side. It should be concave. Next, press on the lid with your finger. If the lid springs back, the jar is not sealed. Immediately reprocess that jar or refrigerate it to be consumed within the next few days. The contents are perfectly edible and delicious, but, since it did not seal properly, you would not want to put it on the shelf to be eaten six months from now.

Label and store

Make and apply labels for your jars that indicate the name of the contents and the date canned. Store in a cool, dark, nonhumid place for up to one year.

BASIC EQUIPMENT

New canning jars

These are specially made, tempered jars with lids designed for water bath canning. The jars can be reused for many years. Canning jars come in various sizes and are usually sold in boxes of 12. Each jar includes a two-piece lid. Look for Ball Mason jars in supermarkets, hardware stores, and discount department stores like Wal-Mart and Target.

Large covered water bath canner

A canner must be deep enough to completely immerse the jars with 1 to 2 inches of water covering the top of the lids. Canners have a rack to keep the jars off the bottom of the pot. You can improvise by using any large stockpot with a wire cooling rack placed in the bottom.

Jar lifter

A very handy tool for removing freshly processed jars from the boiling water. It looks like wide tongs.

Wide mouth canning funnel

This wide-mouth funnel makes filling your jars simple in a way that is safe and tidy.

Non-metallic spatula

Or, a long plastic knife or chopstick to run through the filled jars to release trapped air bubbles.

Linens

A clean dishcloth to wipe the rims before placing the lids on the jars and a heavy dish towel or absorbent mat to sit the hot jars on after they've come from the canner.



- 6 cups peeled & diced Granny Smith or Gala apples
- 1/2 cup water
- 1/2 teaspoon butter
- 1 package powdered fruit pectin
- 3 cups granulated sugar
- 2 cups packed brown sugar
- 1/2 teaspoon ground cinnamon
- 1/4 teaspoon ground nutmeg
- 1. Mix apples, water, and butter in a heavy pot. Cook over low heat, stirring until apples are soft but not mushy.
- 2. Stir in pectin.
- 3. Bring to a full boil, stirring constantly.
- 4. Add sugars, cinnamon, and nutmeg.
- 5. Return to a rolling boil, stirring constantly for 1 minute.
- 6. Remove from heat; skim foam.
- 7. Pour into hot jars leaving 1/4-inch headspace.
- 8. Process in boiling water bath for 10 minutes. Yield: 7 half-pint jars of jam.

Source: Adapted & reprinted with permission from author Mary Hunt: www.everydaycheapskate.com/ water-bath-home-canning-how-to-preserve-summers-bounty; www.everydaycheapskate.com/

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SIMPLIFYING DRAINAGE LAYOUT: DRAIN NETS FOR VISUALIZING SURFACE FEATURES

By: Richard Cooke and Falasy Anamelechi

LiDAR data coverage is available for most of the US, certainly for all the drainage states in the Midwest. The introduction of this data has simplified drainage design. It has facilitated watershed-based design, and the identification and sizing of run-on areas and depressions. Some contractors use LiDAR data for quick, preliminary drainage system layout; others even use it for final designs.

Drainage system layout includes creating contour lines from elevation data, be it from LiDAR, RTK GPS, or otherwise, and using these contour lines to inform the layout of laterals and mains. Experienced designers can identify high points, draws or depressions from contour lines, and incorporate these into the system layout. However, drainage system layout is somewhat of an art. For example, the 2004 issue of Drainage Contractor Magazine includes an article titled <u>One Farm,</u> <u>Four Designs</u> with designs from four experienced contractors, including Illinois' Jon Seevers, using the same topographic data for a 100-acres field. Each contractor presented a distinct design.

Inexperienced contractors or producers installing their own drainage systems may have trouble visualizing surface features from contour lines. We are proposing the use of drain nets, consisting of contour lines and surface flow pathways, herein called laylines, to help visualize surface features, and thereby simplify drainage system layout, particularly for inexperienced designers. These drain nets are analogous to flow nets, which comprises equipotential lines and streamlines, that are used for steady-state subsurface flow visualization, and flow determination in regions with irregular geometries. Like equipotential lines and streamlines, contour lines and laylines are at right angles to each other. We are also introducing a one-click QGIS plugin for creating these drain nets from a DEM and a boundary file. DEMs can be extracted from LiDAR data and thinned to a required resolution using the LiDARThAn plugin introduced in the December 2020 issue of this newsletter.

The Plugin

The Finding_Laylines Plugin (LAYLINES) is an easy-to-use open-source tool that creates drain nets (consisting of contour

lines and laylines), using a DEM and a boundary file. Basically, the plugin first extracts a DEM from the input DEM, using the input boundary layer as a clip mask. It then creates a version of the extracted DEM in which depressions are filled. In the plugin, depressions are defined as areas where the land slope is less than 0.03%, that is three-hundredths of a percent. Then based on user specification, contour lines and laylines are created based of the unfilled DEM, the filled DEM, or both. The contour lines are created at the user-specified interval. The plugin is easy to use, intuitive, and eliminates the need for an inexperienced designer or a new contractor to be concerned about not being an expert in the use of the QGIS software.

Q finding_laylines			×
This Plugin fil	nds the surfa	ce water flow path on a field	
Select Boundary Layer		Boundary Layer	-
Select a DEM Layer		LiDAR DEM Layer	Ŧ
Contour Line Intervals	(ft)	1.0000	\$
Desired Outpu	t		
O Use Filled DEM	🔘 Use Unf	illed DEM	
Select Output Folder	ers/falasya2/Deskto	pp/My Plug-ins/Next Plugin/Results Brov	vse
✓ Open output file after ru	nning algorithm		
Feedbacks: fvw.service	es@gmail.com	OK Can	cel

Figure 1. LAYLINES Plugin Graphical User Interface

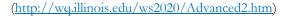
The User's Guide

(http://www.wq.illinois.edu/DG/extraction/LAYLINES_Us er_Guide.pdf) and the plugin (http://www.wq.illinois.edu/DG/extraction/Laylines.zip) are provided in the Illinois Drainage Guide. ILLINOIS Extension

Example Application

An example of the use of the plugin to create a drain net for a field on the University of Illinois' South Farm is shown in Figure 2. Contour lines for the unfilled DEM, and laylines for both the filled and unfilled DEMs are shown. The two sets of laylines overlap in most of the field. Areas where they do not overlap are indicative of the existence of depressions. There is no indication as to how deep or significant these depressions are; there is an online tutorial from the 2020 Extension/ILICA design workshop that covers the sizing of depressions of a specified depth

In fields that are flat enough for drainage water management (controlled drainage), it is recommended that laterals be laid out near parallel with the contour lines. In such instances the laylines can be used to inform the placement of mains. In fields that are too steep for drainage water management, laterals can be laid out near parallel to the laylines. The drain net, therefore, with its combination of contour lines and laylines, is a useful tool for drainage system layout.



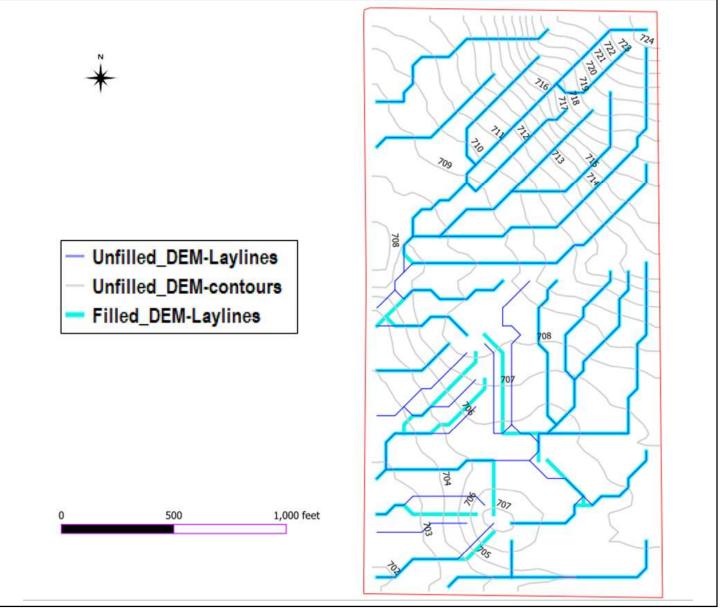


Figure 2. Drain net created with the LAYLINES Plugin.







FRATCO UPDATE ON RESIN SHORTAGE

March 17, 2021

2021 RESIN SHORTAGE

An update from Fratco President, Chris Overmyer

Industry-wide, customers who rely on resin suppliers to manufacture pipe are facing challenges. After reasonably consistent and predictable markets in 2019 and 2020, the forecast for 2021 was more of the same. With Asia and Europe expecting weak demand, America's exports to these regions were supposed to be fairly small, allowing domestic PE supplies from Houston-area producers to remain stable and steady. As the saying goes, a "series of unfortunate events" unfolded, dealing pipe suppliers unforeseen realities. Saying everything changed overnight in resin production is not an understatement

At the epicenter was an issue between the Mexican government and Braskem. Braskem is a Mexico-based PE producer who assisted Houstonarea suppliers by taking a load off of exports over the last few years. A dispute regarding natural gas costs led to the Mexican government shutting off the supply of natural gas to the plant—literally—in the middle of the night. This resulted in an immediate zero output of PE product and tipped the balance of supply and demand in the Gulf Region just enough to stabilize and even slightly increase PE prices in North America through the remainder of December; a surprise to everyone involved.

While prices inched up through January, Texas was about to encounter a deep freeze unlike anything they had experienced in modern history. To us in the Midwest, who spend half the winter deeply frozen, the news of impending Texas winter weather didn't sound like a big deal. Yet as the kids say today, Texas is "built different." Most residential buildings have electric heat pumps for climate control, for instance. The sudden demand for power crippled the electrical grid in Texas. The state's rather outdated rules of not allowing some regional

providers to share capacity with others brought some areas to a grinding halt. This led to many Texans being without heat or electricity for an extended period. Large industry wasn't immune to this standstill. Larger small town-sized refineries and reactors that produce everything from gasoline to polyethylene were left idle.

At first, this pause in production didn't seem

Nobody expected the damage that freezing would cause...

alarming. After all, every hurricane season brings scares that lead to plant evacuation. Once the storm passes, the production lines are usually back up and running in a matter of days. Nobody expected the damage that freezing would

FRATCO UPDATE ON RESIN SHORTAGE (CONT.)

85% of US production is shut down

If you're not making prime material, you're definitely not making off-spec material. This caused a rush to the recycled market, bidding the cost up to unprecedented prices in a short amount of time.



cause to miles of cast-iron pipes that convey material through plants. When the freeze ended, thawed pipes and cast-iron valves had developed cracks and were rendered unusable. We now find ourselves weeks into a situation where 85% of US production of polyethylene is shut down. Once the smoke clears, there is no roadmap or timeline for full-capacity production.

Every major producer of polyethylene has declared force majeure. This means they're no longer honoring any contractual supply obligations-they simply can't. Think about it: From milk jugs to PPE, garbage bags to medical supplies, every company who relied on contracted, regular deliveries of prime PE are scrambling for material that isn't available. Why? It isn't there. These producers began bidding on the spot market for virgin material. This drove market prices well above the prime contracted price. The irony is that none of that material is available either.

On behalf of Fratco, I apologize to you, our customers, for the inconvenience of this whole experience.

To say my team and I are deeply sorry feels like an understatement. We understand the difficulty that no market visibility and sudden, measurable price changes cause you, our loyal customers. In all transparency, there is no immediate end in sight to this situation. This means Fratco will be forced to price products according to raw material market conditions. Please understand the unprecedented crisis we find ourselves in nation-wide. This is much bigger than our corrugated pipe market. Other industries are not immune. The supply chain disruption has a huge ripple effect on everyone who relies on plastics. Within our industry, this situation affects those who

RESIN PRICES

+**\$0.36/lb** Since June 2020

\$1.00/lb *Predicted*

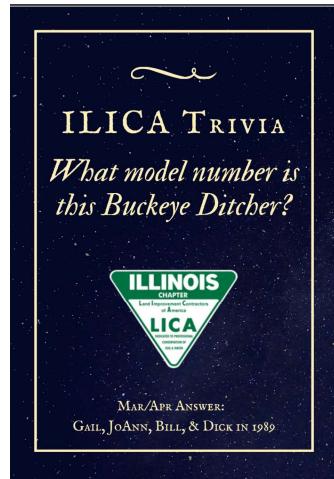
are tirelessly working to restore resin production, the drivers who deliver it to our plants and our Fratco teams who continue producing the best pipe in the business.

I can make no overarching promises, yet you can count on one thing: Fratco will continue supplying you with the highest quality HDPE pipe and accessories through this situation. We cannot forecast what this will involve, how long it will last or when we will see market stabilization. While that may sound extreme, it is indeed the situation we all find ourselves in—together.

Humble regards,

Chris Overmyer President and CEO







Be the first to submit the correct answer to michelle@illica.net

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CALENDAR OF EVENTS

Illinois

Board of Directors Meeting May 15, 2021

Board & committee meetings held in-person & virtually

In-person: NSEC Bldg., Richland Comm. College 1 College Park, Decatur, IL 62521

Virtual Zoom meeting: https://us02web.zoom.us/j/9759547353?pwd=c1ZPcjF hSTBTYjhXeERNZnFRTXdOZz09

> Committee meetings: 9 am - 12 pm Board Meeting: 1 pm

Area 6 Golf Outing & Trap Shoot June 18, 2021

McKillip Farm - Lerna, IL Meadowview Golf Course - Mattoon, IL Trap: 9:30 am Lunch: 12 pm Golf: 1 pm Hotel block: Holiday Inn - Mattoon, IL

Constructed Wetland Demonstration July 19-24, 2021 McCuskey Farm - Broadmoor, IL Requesting Volunteers

Tube & Riser + Bioreactor Demonstration August 9-14, 2021 Hunt Farm - Blandinsville, IL

Requesting Volunteers

Summer Picnic August 21, 2021

Kennedy Farm Drainage 30272 Mackinaw River Rd. Colfax, IL 61728

National

2021 LICA Summer Convention July 27-31, 2021 Sheraton Niagara Falls: Niagara Falls, NY

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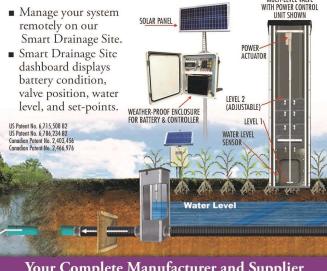
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SAFETY FEATURE: HEAT RELATED ILLNESSES



Overview

Heat and humidity can cause several different types of heat-related illnesses such as heat cramps, heat exhaustion and heat stroke. Knowing the signs and symptoms of each type of heat-related illness will help to keep you safe on the job. Normally, the

body has ways of keeping itself cool by allowing heat to escape through the skin and evaporating sweat (perspiration).

However, if the body does not cool down properly or does not cool down enough, a person may suffer a heat-related illness. Anyone is susceptible to a heat-related illness, but the very young and elderly are at the greatest risk. Beyond that, heat-related illnesses can become serious or even deadly if unattended.

Types of Heat-related Emergencies

These are three types of heat-related emergencies:

- Heat Cramps are muscular pains and spasms caused by heavy exertion. This is generally the result of a loss of water and salt through sweating.
- Heat Exhaustion is caused by fluid loss and decreased blood flow to your vital organs. This condition can produce flu-like symptoms.
- **Heat Stroke** is the most serious heat-related emergency and occurs when the body's internal cooling system has failed. This is a life-threatening condition requiring immediate and aggressive action.

The Heat Index

The heat index is a method that combines air temperature and relative humidity to determine an apparent temperature. The human body normally cools itself through perspiration (or sweating), when the water in sweat evaporates and carries heat away from the body.

However, when the relative humidity is high, the evaporation rate of the water is reduced. This means heat is removed from the body at a lower rate, causing it to retain more heat than it would in dry air. The heat index is important to know when doing physical work outdoors, as higher combinations of heat and humidity can make the body more susceptible to heatrelated illnesses.

Preventing Heat Related Emergencies

Know the signs and symptoms of the various types of heatrelated illnesses. Take time to monitor yourself and be aware of your co-workers. If working outdoors, avoid long periods of direct sunlight. Use cooling fans to keep air circulating around your body. This helps aid your natural cooling process. Wear lightweight, light-colored and loose-fitting clothes when working in warm and humid environments. Drink primarily noncaffeinated fluids. Caffeine actually works against you because it is a diuretic and will cause you to lose more fluids than you are ingesting. Drinking water or other electrolyte products are best. Never wait until you feel thirsty to start hydrating – you are well on your way to becoming dehydrated when you feel thirsty. It is critical to your overall health to stay properly hydrated, especially when working in hot and humid environments.

	Heat-related Emergency Guide Signs & Symptoms	3			
Heat Cramps	Heat Exhaustion	Heat Stroke			
Leg cramps Muscle spasms Stiff abdomen Weak, faint or dizzy Stiff abdomen Possible nausea Normal mental status	iscle spasmsExcessive perspirationiff abdomenPupils are dilated (large)eak, faint or dizzyBody temp near normaliff abdomenHeadachessible nauseaWeak, dizzy or faint				
	Treatment				
Heat Cramps	Heat Exhaustion	Heat Stroke			
Move to a cooler location Seek medical help if victim loses consciousness Drink plenty of fluids	 Get medical attention Move victim to a cool area Lay victim on their back and elevate feet 8-10 inches If conscious, give water every 15 minutes Cool by fanning or spraying with cool water 	 Call 911 immediately Move victim to a cool area Loosen clothing Douse body with water Apply ice packs or wet clothes to neck, armpits and groin 			

General Guidelines & Reminders: Do not underestimate the seriousness of heat-related illnesses. Do not give medication to reduce fever and do not allow the victim to drink any caffeinated or alcoholic beverages. In heat-related emergencies, do not overlook other medical conditions that might be complicated by excessive heat. When in doubt, seek medical attention as soon as possible.

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