



Ag Decision Maker



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Farm employee management: Protecting farm workers during the hot days of summer

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Each summer, farm producers and their employees may be working through days of extreme heat and humidity. This kind of weather can occur anytime from mid-May and into September. Whenever hot weather conditions occur, farm owners and supervisors should be conscious of how to protect themselves and all farm workers during these stressful weather conditions.

Heat can cause illness and sometimes even death. Several years ago Occupational Safety and Health Administration established a "Heat Illness Prevention Campaign" to raise awareness and provide education and resources for farm employers and employees. A link to these web-based resources will be provided at the end of this article.

In our modern farm operations, many farm employees work in conditions where shade, ventilation and, perhaps even air conditioning, are regularly provided. Nevertheless, during hot and humid weather, workers move in and out of conditions that can cause heat illness if the situation is not monitored. Spraying operations, feeding and moving livestock, working in hay and silage-chopping operations all require physical labor where risks of heat illness exist. It's also important to remember that many of today's farm employees may lack previous farm or other outdoor employment experience, so dealing with weather-related conditions may be new to them, not to mention the difference among individuals who may or may not be acclimatized to high heat conditions. Particular

employees – older workers, those who are overweight or have heart-related medical conditions – may have an even higher-than-average sensitivity to heat. *continued on page 2*

Handbook updates
 For those of you subscribing to the handbook, the following new updates are included.

Corn Price Basis – A2-41
 (11 pages)

Soybean Price Basis – A2-42 (11 pages)

Iowa Farmland Rental Rates 1994-2015 (USDA) – C2-09
 (1 page)

Please add these files to your handbook and remove the out-of-date material.

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In general, farm workers can become overheated in one of two ways – either the heat from the environmental conditions in which they work; or by generating internal heat by physical labor.

Less serious forms of heat-related illness include heat exhaustion, fainting, heat cramps and heat rash. These conditions should be taken seriously as they can quickly progress to heat stroke.

Heat stroke can cause death or permanent disability. Heat stroke occurs when the body becomes unable to control its internal temperature, the body temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down – the body temperature can quickly rise to 106 degrees or higher. Heat stroke symptoms include hot, dry skin or profuse sweating, hallucinations, chills, throbbing headache, high body temperature, confusion or dizziness and slurred speech. First aid should include the following steps:

- Call 911.
- Move the employee to a cool shaded area and fan the body.
- Cool the worker by soaking, spraying, sponging or showering them with water.

Farm owners and supervisors should manage employee work conditions where heat stress may occur. Possible considerations include:

- Acclimatize new employees to hot work/ weather conditions by exposing them for progressively longer periods.
- When possible, schedule hot jobs for the cooler part of the day – and where preventative maintenance and repair jobs may occur in hot areas, schedules these tasks for cooler months
- Tasks that require physical exertion during hot conditions should either be scheduled during the cooler part of the day – or provide more frequent-than-usual rest and cool-off periods. Assigning extra employees to reduce the workload may also help.

- Provide workers with rest periods in cool or shaded areas and provide cool water or liquids to employees.
- Where enclosed areas are not air-conditioned, provide adequate fans and ventilation to assure air movement.
- Encourage employees to consume sufficient liquids so that they do not become thirsty.
- Encourage employees to wear light, loose-fitting breathable clothing.
- Where protective clothing or personal protective equipment is necessary, additional monitoring is required as this can increase the risk of heat stress.
- Monitor workers who may have additional heat stress risk factors.

Overall, it is important to plan and provide training and awareness to farm supervisors and workers. Topics should include heat stress risks, heat illness prevention, and employee and self-monitoring in hot weather conditions.

OSHA provides many materials and educational resources that can be used to increase awareness and for training purposes. The link to OSHA's heat illness prevention campaign is [Water-Rest-Shade: OSHA's Campaign to Prevent Heat Illness](#)

Finally – workers and supervisors can use [OSHA's free mobile phone heat app](#) to calculate the work site heat index. Receive reminders about protective measures that should be taken to protect workers from heat-related illness – such as drinking enough fluids, scheduling rest breaks, planning for and knowing what to do in an emergency, adjusting work operations, gradually building up the workload for new workers, training on heat illness signs and symptoms, and monitoring each other for signs and symptoms of heat-related illness.



Expect fall storage challenges

By Steven D. Johnson, PhD, farm management specialist, 515-957-5790, sdjohns@iastate.edu

Barring adverse growing conditions in late summer, farmers should have moved old-crop corn before basis widened and futures prices declined. As farmers in the northern three-fourths of Iowa look to harvest another large corn crop, old- and new-crop marketing strategies and grain storage decisions come into play.

By having already delivered old-crop corn bushels, farmers likely captured the better spring basis and avoided accruing additional storage costs. Farmers could still have benefitted from the summer futures price rally using basis or minimum price contracts offered by most grain merchandisers.

Fundamentals

USDA's August 12 *Crop Production Report* will provide the first in-field yield estimates for corn and soybeans combined with producer surveys. Expect the report to confirm the size and availability of the 2015 corn crop.

The potential soybean yield will still be inconclusive, however. USDA will include a resurvey of soybean planted acreage in Arkansas, Kansas and Missouri in the August 12 report. Soybean futures price volatility could continue until more is known about US planted acres and potential yields.

Summer seasonals

So should you continue to reward the market by making old- and new-crop sales? Despite uncertain 2015 crop supplies, significant rallies in corn and soybean futures prices face stiff headwinds. The high US dollar value index should continue to limit 2015 exports. In addition, low crude oil prices will keep ethanol margins tight.

Lessons were learned from the summer weather rallies that occurred in both 2011 and 2012.

No one knows yet what the crop size and final 2015 corn supply will be, but on-farm storage capacity could be tight come harvest.

Producers should have kept selling both old- and new-crop bushels **during the summer months**. In both of those years, December corn futures prices were highest in August and moved lower by harvest. November soybean futures were at their highs in late August of 2011 and early September 2012, before a sharp selloff prior to harvest occurred in both years.

Storage prospects

Expect on-farm storage space to be tight this fall, especially where farmers are still holding old-crop bushels in late August. Commercial storage space should be adequate for at least the first half of the 2015 corn harvest.

Iowa farmers usually commit 20 percent to 30 percent of new-crop bushels to delivery prior to harvest. Farmers with new-crop hedge-to-arrive (HTA) contracts planning on harvest delivery should have already locked in that basis.

The underlying concern is nearly 1.8 billion bushels of old-crop corn nationwide will still be in storage in late August when the 2014-15 marketing year ends. That's based on the July 10 USDA World Agricultural Supply and Demand Estimates (WASDE) report.

As the 2015 harvest begins, most all of the old-crop corn will be owned by farmers and stored in on-farm facilities or stored commercially with bushels under warehouse receipt. Sizable old-crop stocks compound the concern for having adequate storage space as the 2015 harvest wraps up.

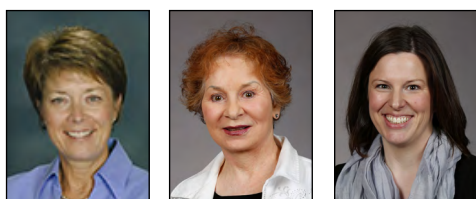
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Conclusion

Hopefully you've already developed and implemented your old- and new-crop corn marketing plans. It's possible we could see the "perfect harvest storm." That would include lower corn and soybean futures prices well off their summer highs, wider-than-normal basis just prior to and during harvest and a 2015 corn crop that matures late and becomes difficult to handle, dry and store.

The ISU Extension and Outreach Ag Decision Maker website has two recently updated Information Files and Decision Tools (Excel spreadsheets) to help farmers with grain drying and shrink strategies.

File A2-31, Estimating the Cost for Drying Corn File A2-32, Corn Drying and Shrink Comparison



CenUSA Bioenergy in 2015*

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CenUSA Bioenergy is an ambitious, University based, USDA sponsored research project investigating the sustainable production and distribution of bioenergy and bioproducts for the central United States. With funding from USDA NIFA, the project includes researchers from Iowa State University, Purdue University, University of Wisconsin-Madison, University of Minnesota, University of Nebraska-Lincoln, University of Illinois at Urbana-Champaign, The University of Vermont, and USDA ARS.

Vision

The vision is to create a Midwestern regional system for producing advanced transportation fuels and bioproducts derived from perennial

grasses grown on land that is either unsuitable or marginal for row crop production. In addition to producing advanced biofuels and bioproducts, the proposed system will improve the sustainability of existing cropping systems by reducing agricultural runoff of nutrients and soil and increasing carbon sequestration.

Objectives

Based on this vision, research efforts are concentrated on ten objectives:

- Developing cultivars and hybrids of perennial grasses optimized for bioenergy production.
Developing sustainable production systems that optimize perennial biomass yields and ecosystem services.
Developing flexible, efficient, and sustainable logistics systems.
Identifying and characterizing sustainable bioenergy systems to achieve social, economic, and environmental goals and understand socioeconomic and environmental consequences of perennial bioenergy systems.



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- Identifying germplasm characteristics amenable to pyrolytic conversion and evaluating performance of pyrolytic biofuels.
- Evaluating policy, market, and contract mechanisms to facilitate broad adoption by farmers.
- Developing procedures for managing risks and protecting health for each component of the biofuel production chain.
- Providing interdisciplinary education and engagement opportunities for undergraduate and graduate students.
- Developing outreach programs for all stakeholders within the bioenergy system.
- Commercializing perennial grasses.

More information about this project is available in the CenUSA Bioenergy [informational flier](#), [Project Narrative](#) and [Project Abstract](#) and in the video, [CenUSA Bioenergy Overview](#).

Projects

Initial projects focus specifically on [breeding](#) new and improved cultivars for use on marginal cropland that can also survive Iowa winters. Concerns with growing switchgrass include issues such as establishing a stand, weed control, successfully harvesting a crop, and storage. In on-farm trials, some of the advantages for producers included control of erosion and weeds, productivity on marginal land, and long-term ground cover.

Post-harvest, CenUSA is looking closer at feedstock conversion and refining, market development, and the differences from current agricultural process that might cause additional health or safety concerns if not properly understood.

With multiple years of production information, more details on production economics is available from CenUSA, including a [Decision Tool](#) showing estimated costs of production.

Next steps

If we know how to grow it, harvest it, and store it, then what is the next step? Why would a producer consider a multi-year crop if they don't see significant profit upfront? Evaluations of growers found there is value in "non-priced" benefits, especially on highly erodible land that might not be well suited for row crop production.

The greatest challenge is developing a market. Producer feedback shows interest in growing perennial grasses; but producers won't commit until there is a market for their grasses. It's a catch-22, as markets won't develop until there is enough product to support them. Uncertainty around biofuels policy in the United States is creating a vacuum for investment in second generation bioprocessing in the United States – so markets for perennial grasses for biofuels have yet to develop. Other niche or commercial markets are possibilities. CenUSA has done beef feeding trials at the ISU Armstrong research farm that show switchgrass can be substituted for hay or corn stover in a beef feedlot ration – replacing the "scratch" portion of the beef ration – with good results. Archer Daniels Midland Company (ADM) and Renmatix have partnered with CenUSA in looking at the commercialization aspect for industrial sugars within each objective. [NewBio](#), a "sister" project to CenUSA also looks at alternative markets for grass energy crops.

Policy changes on the horizon may create opportunities for the CenUSA vision. For instance, Minnesota passed a buffer/riparian strip law this last legislative session that requires buffers along all streams and rivers. Bioenergy grasses would be excellent candidates for the buffers. Adoption of biofuel crops will affect other markets. Further research will evaluate the impact of an expanded advanced biofuel system on regional and global food, feed, energy and fiber markets.

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How to learn more

Details on current projects, newsletters, and further education can be found on the CenUSA website. Blades, a bi-monthly newsletter highlighting various aspects of this large project, is also available to stay informed on the latest research being done as a part of CenUSA. To learn more about the CenUSA vision, read the article "Midwest vision for sustainable fuel production" in the journal Biofuels.

Upcoming events

Field days

- Aug. 24, CenUSA Bioenergy/Vermeer, Iowa
• Sept. 9, Biofuels teacher training, Ind.
• Sept. 21, Bioenergy Field Day, Iowa

Ag Shows

- Aug. 28-Sept. 7, Nebraska State Fair, Neb.
• Sept. 15-17, Husker Harvest Days, Neb.
• Sept. 22-24, Farm Science Review, Ind.

* This project is supported by Agriculture and Food Research Initiative Competitive Grant No. 2011-68005-30411 from the National Institute of Food and Agriculture (RGB 106/128/18).

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Internet Updates

The following Information Files and Decision Tools have been updated on www.extension.iastate.edu/agdm.

- July Corn Basis - A2-43 (12 pages)
July Soybean Basis - A2-44 (12 pages)
Farmland Leasing Overview - C2-20 (Voiced Media)

Current Profitability

The following tools have been updated on www.extension.iastate.edu/agdm/info/outlook.html.

- Corn Profitability - A1-85
Soybean Profitability - A1-86
Iowa Cash Corn and Soybean Prices - A2-11
Season Average Price Calculator - A2-15
Ethanol Profitability - D1-10
Biodiesel Profitability - D1-15

... and justice for all

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