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PRESS RELEASE

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By UNMC, Central States Center for Agricultural Safety and Health, Omaha, NE

Photo Credit: Joshua Michel

TIPS TO PREVENT COMBINE FIRES

Recent drought conditions increase potential for combine fire during this year's harvest.

No one wants equipment to go down during harvest, especially if it's due to a combine fire.

To help manage and prevent a combine fire, Joshua Michel, Iowa State University Extension and Outreach Field Agronomist, recommends practicing several safety principles before and during harvest season.

"Look at your local forecast," Michel says. "When dry conditions persist, windy conditions increase potential for combine and field fires. That's especially true when winds are strong and humidity is low. There's a lot of dry corn stalks and bean residue, things are dustier, and all it takes to start a fire is a spark from an engine, overheated bearing, or contact with the exhaust manifold."

As technology advances, today's combines are larger and more powerful, which means they generate more heat during operation. Fire needs two sources for combustion: heat and fuel.

"You can't get away from the heat a combine generates," Michel says. "That means we have to do a good job of removing the fuel source that's near the heat. Keep that combine clean, especially around the engine compartment. Use a high-pressure washer or compressed air to get rid of caked on oil and grease. Get any crop residue and dust off. The cleaner you keep it, the less potential there is for fire."

Other maintenance tasks that help reduce fire risk include checking coolant and oil levels every day, especially if the combine features an engine turbo charger. During operation, there may be wear and tear on some areas which could lead to an oil or coolant leak.

“A good practice is to frequently blow off any leaves, chaff or plant material,” Michel says. “You could use a leaf blower if a pressure washer or compressed air isn’t available. It’s best to get that done at the end of the day. If you wait till morning, dew may make it more difficult to get the plant materials off the machine.”

In addition to clearing the exterior of the combine, search for plant material that wrapped up on the machine near bearings, belts, or any place where friction occurs since friction is what produces heat.

“Check the exhaust system and make sure nothing is leaking, including fuel, oil, any hoses,” Michel says. “Inspect and clean any recessed areas near fuel tanks and lines. I know I sound like a broken record, but keeping the machine clean is the best way to prevent a fire.”

When it’s time to refuel, take 10 to 15 minutes to allow the combine to cool down. This reduces the risk for gasoline or diesel fuel volatilization and igniting fumes.

“Research suggests that, if we have dry conditions, which we see this year across much of the Midwest, coupled with wind speeds in excess of 20 to 30 miles per hour, combine and field fires are nearly inevitable,” Michel says. “As dry as the growing season has been, things dry out even more in fall. Producers may want to consider if they can delay harvest until we have some moisture on the ground.”

Michel notes that even a shower that brings a tenth of an inch of rain can help significantly reduce fire risk.

“Obviously, producers still need to get into the field, but whatever can be done to reduce the risk of fire will be beneficial,” Michel says.

If fire does break out on a combine or in a field during harvest activities, Michel encourages producers to immediately call 911.

“If you believe something is smoldering or you see fire, don’t hesitate to call 911,” he says. “Fire fighters are happy to find that you were able to contain the fire or that it turned out to be nothing. That’s a much better situation than arriving to find that a combine or field is engulfed in flames.”

A fire like these doubles in size in less than one minute, making every moment critical before fire fighters arrive. Burning embers will quickly spread fire downwind, causing a fire to rapidly become uncontrollable.

“If you’re able to fight a fire on the ground, work from the black area, where the field is already burned,” Michel says. “Never try to fight a fire if you can’t do so safely.”

Preparing for a potential fire includes keeping two ABC-type fire extinguishers on the combine. A smaller 10-pound extinguisher should be placed inside the cab or right next to the cab door. A larger 20-pound extinguisher should be located close to the ground on the combine exterior.

“Two to three times during the year, invert those extinguishers so the powder doesn’t all settle in the bottom,” Michel says. “The combine vibration will cause the powder to settle, which means it may not work properly when you need it.”

Other preparations that are key to successfully managing a combine or field fire include listing the 911 addresses for each field. Having this at hand will allow emergency services to reach the field more quickly.

Most farm equipment is covered by insurance, however, in today's economy, obtaining necessary repairs or equipment replacement could be challenging and take a significant amount of time.

"Do all you can to prevent a fire," Michel says. "Even if you think you smell something, it's better to call for help first, then inspect to see what's happening. No one will complain if they reach the field to find there's no fire to put out or you've managed to control it with your fire extinguisher."

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