

Cultivating Caution Field & Combine Fires

Salah Issa & Bill Fulton



Introduction



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ILLINOIS
Agricultural Safety & Health

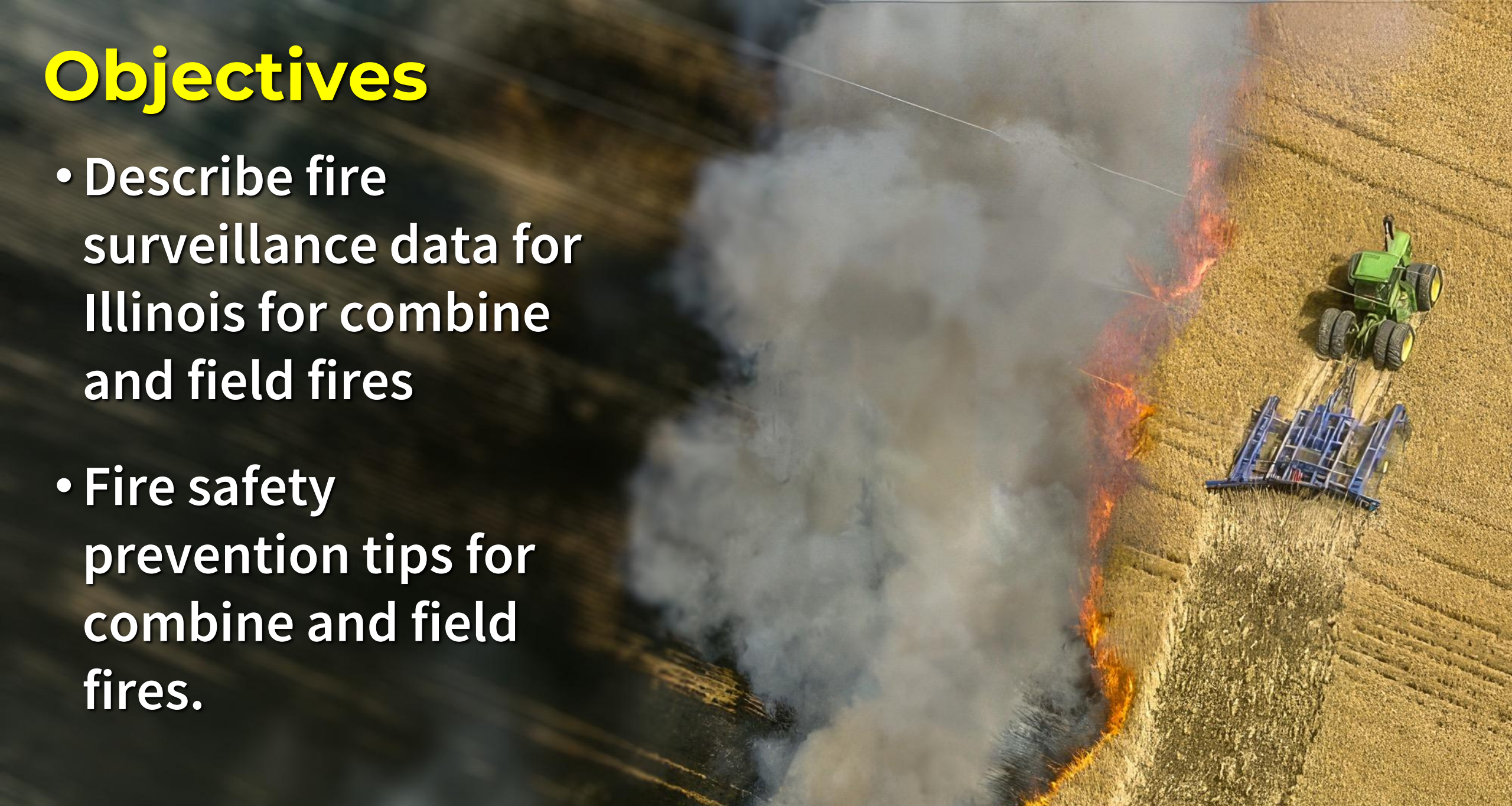


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Objectives

- Describe fire surveillance data for Illinois for combine and field fires
- Fire safety prevention tips for combine and field fires.



Agricultural Safety & Health Program

- News clipping agricultural injury report
- Captures unique cases
 - Grain Entrapments
 - Fire Incidents
- Focused more on the severe cases (+ fatalities)
- Over 30 years of data.

First responders called to barn fire Thursday

By Dan Kibler
Staff Writer

On my drive to work Thursday, January 23 around 7:30 a.m., I noticed a billow of black smoke south of Clark Center. I wasn't sure if this was a structure fire or perhaps someone burning a large pile of brush. It seemed to be too much smoke for just a brush fire. I turned off of the highway to investigate and determine if I needed to call 9-1-1.

As I got closer to the source of the smoke, I noticed vehicles behind me, one of which had the flashing lights of a first responder. I looked for some place to turn off but could not find one. I was left with no choice but to drive past the scene of the fire which was a barn located at 13356 N. Freedom Church Road. The family seemed to be calm, walking horses across the road as I carefully made my way around the curve beyond the house. It did not appear that any people had been injured by the fire.

Clark County Ambulance Service had already arrived and Marshall Fire Department trucks were arriving. I took a few photos for the newspaper, and proceeded to make my way on unfamiliar country roads until I emerged back at Clark Center.

Marshall Advocate

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2025 Fire incidents Summary

No less than 51 fire incidents occurred in agricultural operations in Illinois

24

Barn Fires

- Many chickens
- 8 goats
- 6 horses
- 5 pigs
- 1 dog
- Lots of Hay

4

Machine Shed/Shop

- 1 Tractor
- 2 Mowers
- Other vehicles
- Other equipment

10

Field Fires

- 420+ acres burned
- Brush, Corn, Wheat
- A Jeep

3

Grain Facilities

- 2 Grain Bins
- 1 Conveyor Belt

10

Vehicle Incidents

- 9 Combines
- 2 Tractor
- 1 Grain Cart
- 50+ acres farmland

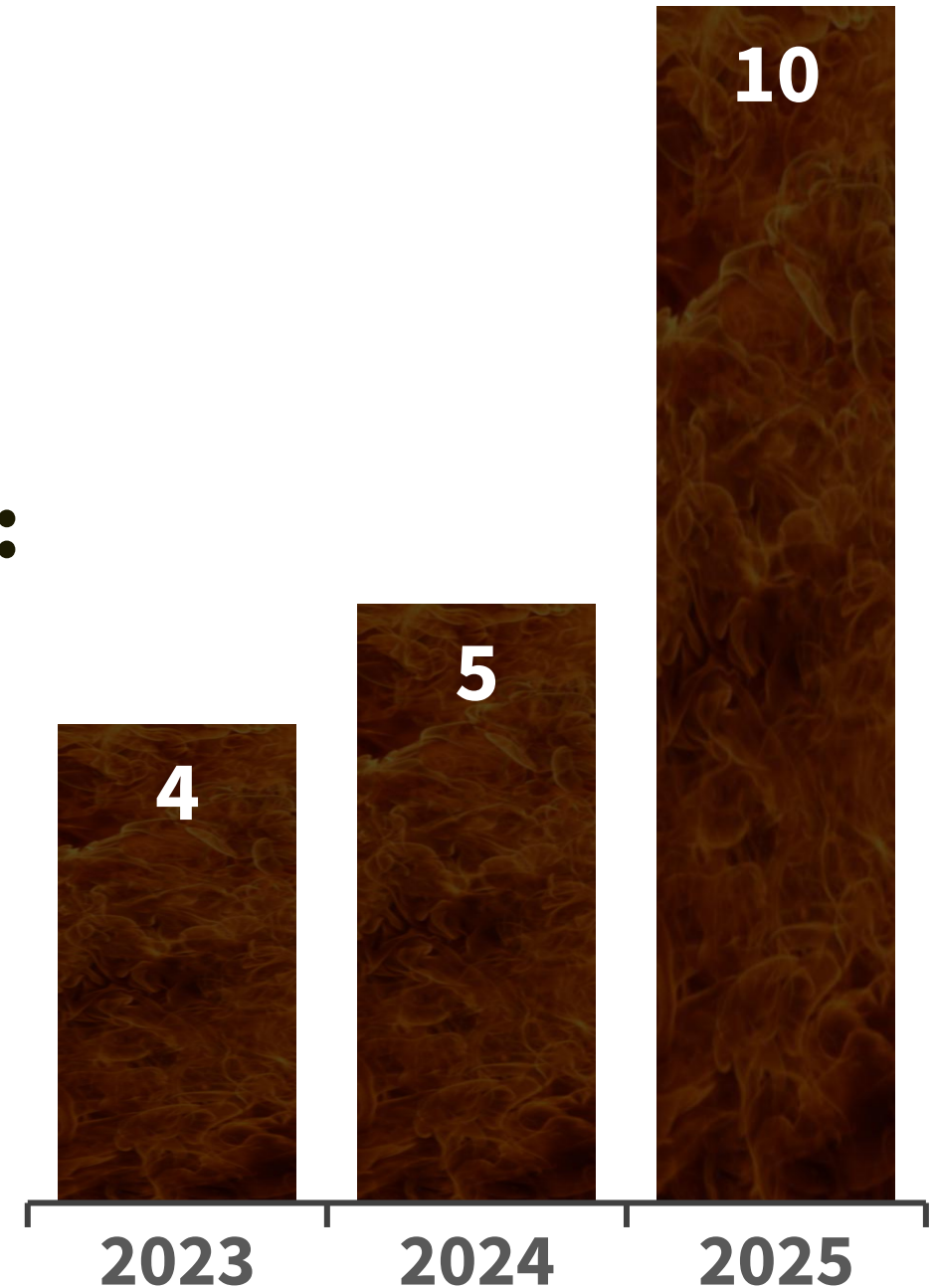
Combine / Tractor Fires

In 2025, a fire started in combine quickly spread to field. The farmer was unable to escape and died inside the cab of the combine.

Combine fire burned 15 acres of farmland and the nearby tractor and grain cart.

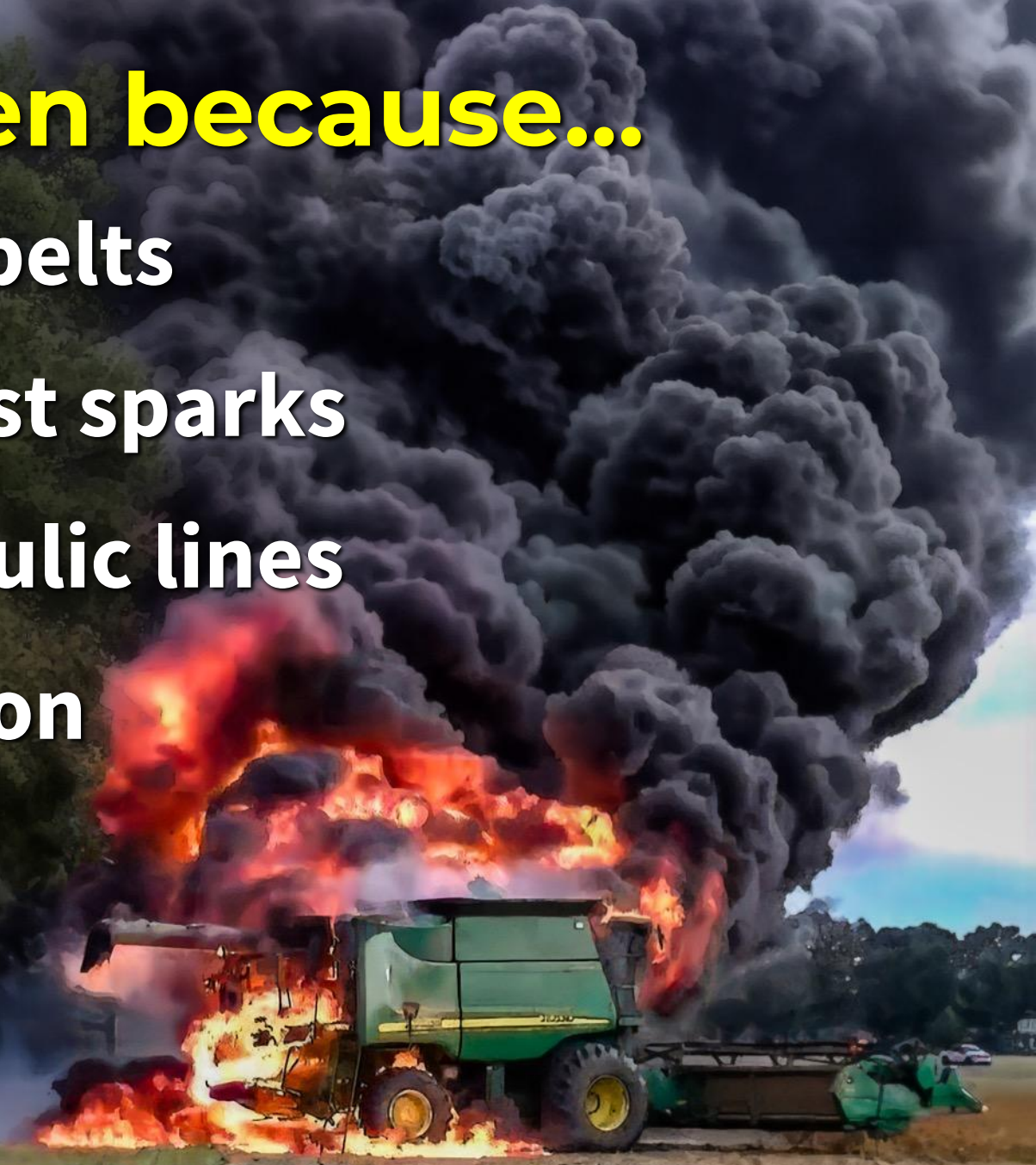
Combine / Tractor Fires

- Usually combines,
4 of these cases were tractors
- Over last three years, causes were:
 - 3 bad/hot bearings
 - 2 Engine
 - Hydraulic leak
 - Ignited field
 - Implement / cropper
 - Arson



Combine Fires happen because...

- ✓ Overheated bearings or belts
- ✓ Static electricity / exhaust sparks
- ✓ Leaks from fuel or hydraulic lines
- ✓ Crop residue accumulation
- ✓ Electrical issues



When are more Combine fires going to happen...

- Long periods without rain during harvest
- Hot, dry, windy periods
- Excessive dirty crop materials



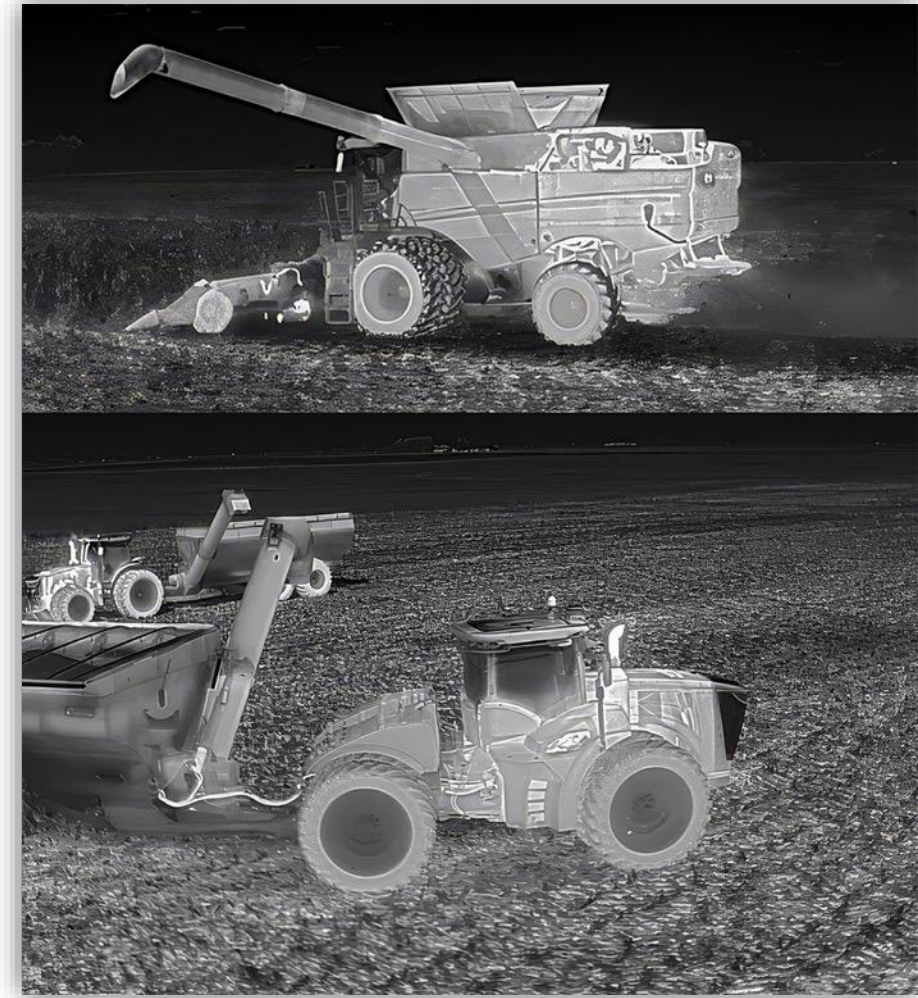
How do you need to prepare if your combine catches fire...

- ✓ Maintain two ten-pound Dry Chemical Extinguishers on the combine and a shovel
- ✓ Have a cell phone readily available
- ✓ Know your exact location including field entrance locations
- ✓ Call 911 even before trying to fight the fire



What the Fire Service needs to realize...

- Many of the Combine fires are based in the engine compartment
- Modern Combines have much more polycarbonate sheeting than in the past
- If the combine is on fire, probably there is a field fire as well
- The fire apparatus may not be able to get into the field



Prevention Points...

- Maintenance is key
- Grease and oil bearings, chains, and other parts to manufacturer's recommendations
- Check bearings with an infrared thermometer or thermal imaging camera



Prevention Measures

- Keep equipment clean and free of loose organic debris.
- Clean combines have less issues



Field/Brush Fires

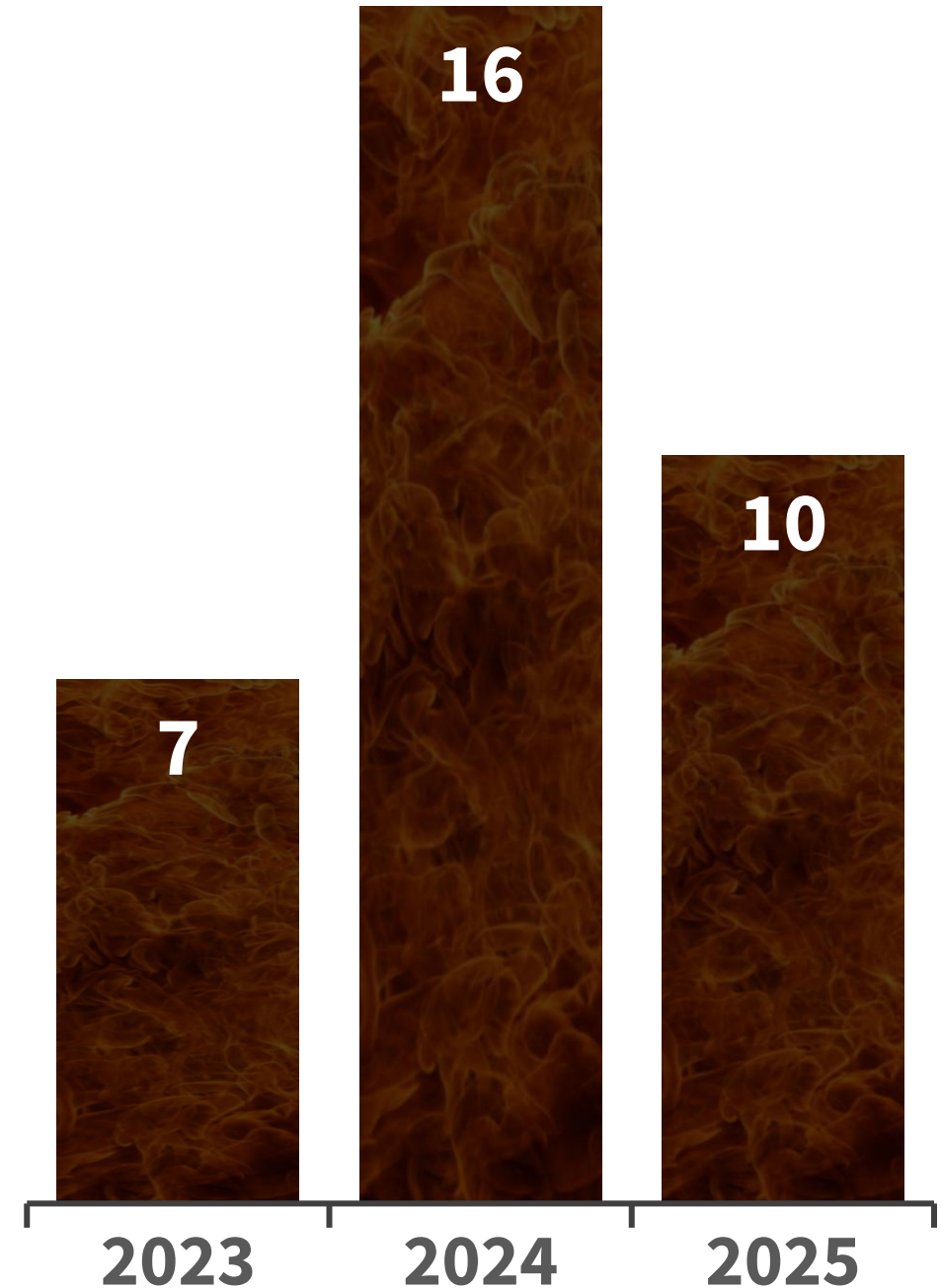
In 2024, a brush fire was started by an owner and spread to about 25 acres of land. An ember also caught a neighboring property ablaze.

In 2025, a wheat field burst into flames due to high winds and hot temperatures. Firefighters initially arrived to 5 acres of harvested wheat burning. By end of operation, 80 acres were burned, two firefighters were treated for heat exhaustion.

Field/Brush Fires

Over last three years, causes were:

- 6 Out of control burn
- 2 Machine
- Embers
- Rekindle
- Weather
- 1 Oil Flare
- 1 Arson



Field Fire Characteristics

- Will move with the wind
- Will move with the amount of fuel
- More than likely, they will form a point or head
- Field fires can give off extreme radiant heat
- Flame length in harvested crops can reach 7 feet in length



Fires Characteristics

- Flame length in unharvested crops can exceed 16 feet
- Field fires can spread moving uphill
- In these cases, flame length can double or even triple



What should you do

- Call 911, get the Fire Department headed your way
- Have a disc or other tillage tool hooked up in advance. A fire break can be made well ahead of the fire
- Get any other equipment to the burned area well out of the way
- Don't try to till right next to the fire. Fires move fast and can engulf you and the equipment

What should you do

Further more, a field fire is consuming a lot of fuel, using a lot of oxygen. It can consume the oxygen your tractor engine needs to run and stall the engine.

Consider keeping a water trailer or truck filled and ready during harvests when a high potential exists for fires.



What should you do

Kits are available to equip auger wagons with a water tank and pump in case of a field fire



What the Fire Department may do

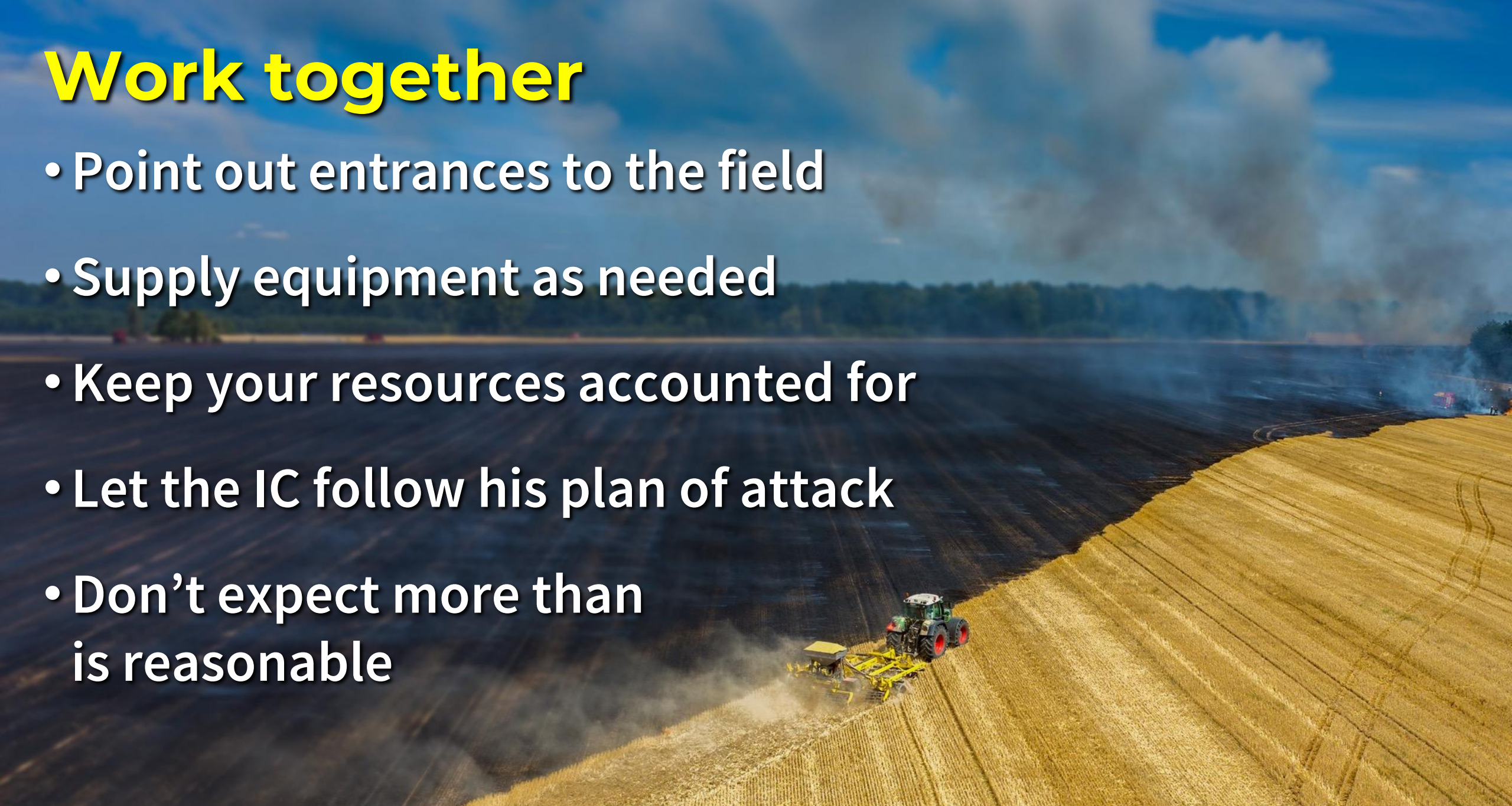
- They may deploy four-wheel drive apparatus to the point or head of the fire on the burned side of the fire
- In some cases, they may determine to use a road, creek, or waterway as a stop point to contain the fire
- An Incident Commander will be in charge of the operation

What the Fire Department may do

- Coordinate the use of your equipment with the Incident Commander
- You may want to point out a close water supply in case additional water is needed
- The Incident Commander (IC) is in charge, let him do his job...

Work together

- Point out entrances to the field
- Supply equipment as needed
- Keep your resources accounted for
- Let the IC follow his plan of attack
- Don't expect more than is reasonable



Field/Brush Fires Prevention Measures

Watch the weather.

- Never burn during high winds
(over 10-12 miles an hour)

Have a contain area before you burn, Firebreak by:

- mowing
- discing

Prevention Measures

Keep roadside trimmed near highways.

Always call it in to your local fire department.



Know your firefighting department

- In the heat of the moment:
 - Facilities might not have addresses
 - Describing location of fire might be difficult
 - Difficult to alert firefighting team of all hazards at your farm.
- It is important to invite your firefighter department to your farm
 - Get to know them
 - Get feedback from them.
- Provide firefighting team knowledge of your farm.

National Farm Medicine Center

farmmapper.org



FARM MAPPER

Farm Mapping to Assist, Protect and Prepare Emergency Responders

This project explores using digital maps of farming operations to provide emergency responders on-site information about hazards and resources. The goal is to expedite responses to farm emergencies and protect responders who may be unfamiliar with an individual farms layout. A brief [video tutorial](#) of the platform is also available.

Login

Register

Username OR Email

Password ([Forgot Password?](#))

[Login](#)

Farm Mapper

farmmapper.org

The screenshot displays the Farm Mapper web application interface. On the left, a 'General Collection' sidebar lists various safety hazards and equipment. The main area shows an aerial map of a farm with several icons placed on it, including a green 'X' hazard icon, a blue 'H' icon, and a green 'CAUTION' icon. On the right, a 'Farm Details' sidebar provides information for 'Heiman Holsteins' at '11875 US 10, CHILI'. The details include fields for phone number, employees (5), residents (2), beef head, and dairy head.

General Collection

Click to select an item, then click a location on the map to place it.

Equipment

- Warning icons: Exclamation mark, Chemical, Fall, High voltage, Off, High voltage, Tractor, Slipping, Fire, Manure, Staging area, Water, Skull and crossbones.

Measuring Utilities

Features / Item Icons

Animal Collection

Farm Details

Heiman Holsteins
11875 US 10, CHILI

Phone:

Primary contact phone number.

Employees:
Number of farm employees.

Residents:
Number of residents at farm.

Beef Head:
Number of beef head on farm.

Dairy Head:
Number of dairy head.

Know your Fires and Extinguishers



Common
Combustibles

Wood, Paper,
Fabric, Cloth,
Plastic



Flammable
Liquids, Gases

Gasoline, Oil,
Grease,
Propane,
Solvents



Energized
Electrical

Wiring, Panels,
Appliances,
Electronics



Combustible
Metals

Magnesium,
Titanium,
Sodium, Zinc



Commercial
Cooking
Equipment

Cooking Oils,
Fats, Grease,
Animal Fats,
Vegetable Oils

Fire Extinguishers

- Maintenance is important
 - Inspect bottle, handle, hose, and gauge for proper working order
 - Month and Year put in service current (annual)
- Extinguisher product still free-flowing inside bottle (turn upside down and/or shake)





How to Use Fire Extinguisher

PASS Method



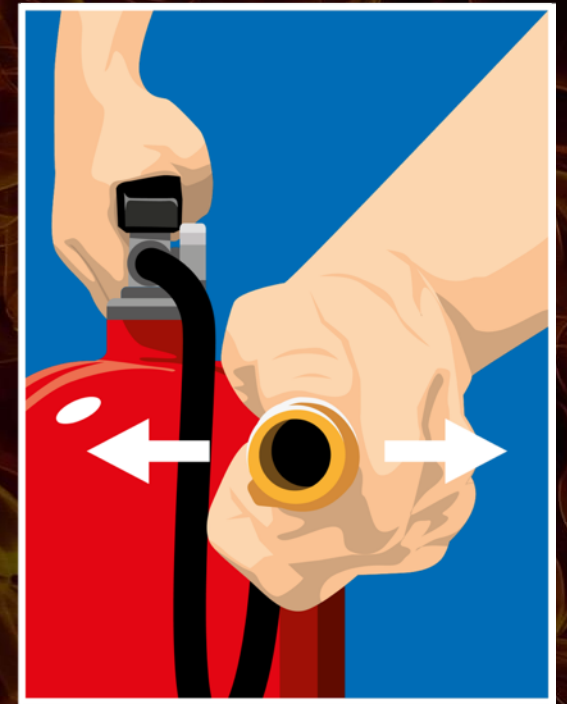
PULL



AIM



SQUEEZE



SWEEP

Watch area for re-ignition and repeat steps Aim, Squeeze, and Sweep if needed
When in doubt, **EVACUATE IMMEDIATELY!**

Conclusion

- A fire can start anytime; preparedness is crucial
- Prevention can
 - Reduce chance of fire
 - Reduce impact of fire



<https://www.fsi.illinois.edu/>

University of Illinois Extension is running an active campaign to address combine fires during harvest season.

www.facebook.com/reel/1087727963595128



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Safety is key to a successful harvest.

Decrease farm, field, and equipment fires this harvest and every day with continued maintenance and cleaning.

Find more tips for reducing risk, understanding signs, the importance of having a safety plan, and how to respond in a farm fire emergency with Cultivating Caution's Field Fires session.

The webinar begins at 11 a.m. on Sept. 9. There is no cost to attend.

Registration is required and is available at the link below.

🔗 Register for the free series, including Sept. 9 Farm Fires at event link in bio.

🔗 Download the Farm Fire Risks fact

www.instagram.com/reel/Dcv2JN_JB-D/

Download the Farm Fire Risks fact sheet at <https://go.illinois.edu/FarmFireRisks>



Illinois Extension Farm Fire Risks and Prevention



Combine fires are one of the most common and expensive types of fire incidents in production agriculture, but certainly not the only type possible. A variety of factors, including the environment, can increase the risk of farm fires around a farm operation. Increased awareness, preparation, and making time for safety checks can assist in

Practices Contributing to Fire Risk

Environmental

- Little precipitation.
- Low soil moisture.
- Low relative humidity.
- High wind.
- High temperature.

Around the Farm

Steps for Preparedness

- Check the weather forecast. If conditions are expected to be dry and windy, wait.
- Ensure the address is clearly visible from the road.
- Know the exact field identification and location.
- Access to water, fire extinguishers, and fire blankets.
- Access to equipment to create potential fire breaks.
- Maintain, clean, and monitor equipment for fire potential.
- Smoke detectors in buildings with alerts connected to a phone.
- Have a plan for all livestock.

Resources

Weather and Climate

- [US Drought Monitor](#)
- [Observed Precipitation](#)
- [Soil Moisture Estimates](#)
- [National Weather Service Local Forecast](#)
- [National Forecast](#)
- [Temperature and Precipitation Outlook](#)

Farm and Fire Safety

- [Fire Potential Outlook](#)
- [Crop Conditions](#)
- [Harvest Fire Safety Tips](#)
- [Farm Fire Prevention Guide](#)

WEATHER SERVICE
IOWA STATE

IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

N EXTENSION

NOAA NIDIS

Upcoming 2026 Cultivating Caution Webinars

- October 14: Farmer Mental Health
- November 11: Manure Pit Gases

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Agricultural Safety & Health Research Lab

We are dedicated to reducing risks and improving safety in farming through research, innovation, and education.



<https://go.illinois.edu/ISSA-lab>

Grain entrapment is a frequently fatal agricultural hazard that occurs when workers enter silos to clear blockages, a problem that has recently seen a disproportionately high number of cases in Illinois. To combat this issue, the program is researching high-pressure air extraction methods, developing machine learning models to predict entrapments, and offering specialized safety training.