

# Agricultural Safety and Health Series

## Fire Prevention on the Farm



Oklahoma Cooperative Extension Service • Division of Agricultural Sciences and Natural Resources

F-1724

### Michael Stapper

Project Assistant  
Oklahoma Agricultural Health Promotion System

### Judy Oskam

Project Director  
Oklahoma Agricultural Health Promotion System

**T**he word “fire” strikes fear in the hearts of young and old alike, and rightfully so. Each year devastating farm fires result in lost lives and threatened livelihoods. Even small fires pose a special threat to farms. In a few short minutes a small fire can become a raging inferno if not rapidly detected and controlled. Most farms are not equipped to fight large fires and are relatively isolated from organized fire departments. By the time fire fighters arrive it is frequently too late.

The old saying, “an ounce of prevention is worth a pound of cure” is certainly true with farm fires. This fact sheet summarizes the basics of fire and fire prevention and provides information on how farmers can reduce the threat of fire on the farm.

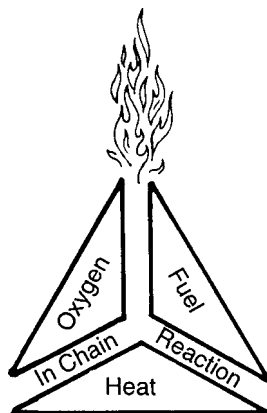
### The Formula for Fire

Fire needs three basic elements to burn— *oxygen* (air), *fuel* (any material that will burn), and *heat* (to ignite the fuel). These three elements interact through a chemical chain reaction to create and sustain fire. *Isolating any one of these elements from the others is the basis for fire prevention.*

### Fire Prevention Programs

A good program of fire prevention around the farm is the best way to avoid a catastrophe. It requires *planning*, *insight* and, most of all, *dedication* on the part of agricultural producers.

The Fire Pyramid



To begin a program, start by identifying and eliminating potential fire hazards around your farm. **Make fire prevention a part of your daily routine and eliminate potential fire hazards.**

### The Key to Fire Prevention

Preventing ignition is the key to fire prevention. *Material that does not reach its ignition point cannot burn.* Numerous heat (ignition) sources are found around the farm. Welding equipment, overheated tractors or electrical motors, electrical shorts, heating equipment and smoking are just a few potential sources of fire. *To reduce the chances of fire, identify and monitor the potential ignition sources.*

### Prevent Fires Through Maintenance And Good Housekeeping

Good preventative maintenance programs combined with cleanliness and good housekeeping can reduce the threat of fire. When performing your daily activities:

- Keep areas clean by routinely picking up feed, seed, fertilizer bags, and other paper.
- Keep tall grass and weeds down around buildings.
- Never pile scrap wood, tree limbs, or other materials near buildings.
- Never store fuels inside a building.
- Clean-up fuel spills that may saturate the ground, wooden or concrete floors.
- Store chemicals, paints, thinners and other flammable materials in one place and away from fire sources.
- Keep tractors and other machinery clean to prevent engine fires that can spread to buildings or equipment.
- Keep electrical motors free of dust, grease, and oil build-ups to prevent overheating.
- Never allow smoking in barns or around flammable materials.

### Plan Ahead for Fire Control

Once a fire starts it can spread rapidly. To reduce property damage, a fire must be *detected* and *controlled* quickly. Protect yourself and your property from fire by:

- Installing and maintaining smoke detectors in barns and other structures.
- Providing an adequate, accessible water supply with nozzles and sufficient hose to reach structures.
- Placing and maintaining fire extinguishers in buildings, on tractors, trucks, and other machinery.
- Installing and maintaining safe electrical wiring systems.
- Posting no smoking signs in and around barns and other buildings.

## New Construction

Buildings and other structures represent a large portion of total farm investments. When designing and constructing new structures, or remodeling existing ones, *keep fire prevention in mind*. If at all possible: use fire resistant building materials, locate new structures a safe distance away from others to prevent the rapid spread of fire, provide an adequate water supply for fire control, and install adequate wiring systems.

## The A-B-C's of Fire Control

There are three basic classifications of fires. Each class is based on the type material (fuel) that is burning and has its own particular methods for control. To *effectively* and *safely* extinguish fires, *accurately* identify the class of fire you are trying to extinguish. Fire extinguishing methods suitable for one class or type of fire may not be suitable (and may be dangerous) if used on another class of fire.

### Class A Fires

Class A fires are fueled by ordinary combustibles such as: wood, cloth, paper, rubber, hay, straw, and many plastics. They burn deep into the fueling material and even after the flames are put out, may smolder and re-ignite. Water is commonly used to extinguish Class A fires. The water soaks into materials to cool them, but should be watched to ensure reignition does not occur.

### Class B Fires

Class B fires involve flammable liquids and gases such as: oil, gasoline, grease, tar, oil-based paints, lacquers, LP gas and acetylene. To extinguish Class B fires, the exclusion of oxygen (smothering) is most effective. Dry chemical extinguishers are recommended because the agent breaks the chain reaction. CO<sub>2</sub> extinguishers may also be used on Class B fires. **Never use water or water type extinguishers on Class B fires — water tends to spread the fire.**

### Class C Fires

Fires involving energized (live) electrical equipment are Class C fires. Included in this classification are fires involving: electrical wiring, fuse boxes, circuit breakers and motors. These fires are typically Class A or Class B fires, but because they are electrically energized must be treated differently. Carbon dioxide (CO<sub>2</sub>) extinguishers are recommended for this type fire because (CO<sub>2</sub>) is non-conductive and does not leave a residue. Dry chemicals used for Class B fires can be used, but leave a residue that can corrode equipment. **Never use water on a Class C fire, because of potential electrical**

**shock.** If it is possible to completely disconnect the electrical power and de-energize the fire area, the fire may be treated as a Class A or Class B fire.

### For more information, contact:

- Your local fire department
- Your insurance agent
- Fire Protection Publications  
Fire Bldg., Oklahoma State University  
Stillwater, OK 74078  
1-800-654-4055
- National Fire Protection Association  
Batterymarch Park  
Quincy, MA 02269-9101  
1-800-344-3555
- National Safety Council  
425 N. Michigan Ave.  
Chicago, IL 60611  
1-800-621-7619

# Project SAFE



**Oklahoma  
Cooperative Extension Service**

---

**OKLAHOMA STATE UNIVERSITY**

Project SAFE is funded through Department of Health and Human Services Centers for Disease Control Cooperative Agreement No. U05/CCU606076-03, administered by the National Institute for Occupational Safety and Health.

For more information about agricultural safety and health, contact:  
Judy Oskam, Project Director  
Oklahoma Agricultural Health Promotion System  
Department of Biosystems and Agricultural Engineering  
Oklahoma State University  
Stillwater, Oklahoma 74078  
405-744-5427

The National Institute for Occupational Safety and Health  
4676 Columbia Parkway  
Cincinnati, Ohio 45226  
1-800-35-NIOSH (1-800-356-4674)

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, sex, age, religion, disability, or status as a veteran in any of its policies, practices or procedures. This includes but is not limited to admissions, employment, financial aid, and educational services.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Charles B. Browning, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Dean of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of \$ 227.00 for 5,000 copies. #9923 0494 JD.