



Farm Safety Association

Fact Sheet
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FARM FIRES

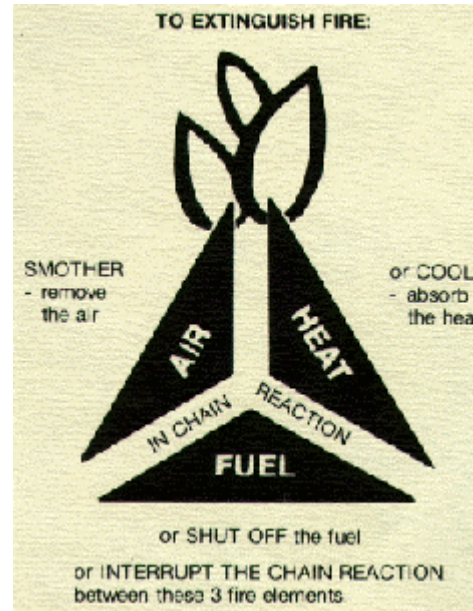
Introduction

Each year in Canada, there are approximately 800 deaths due to fires. While the majority of these deaths are in conjunction with residential properties, many occurred on farms. Fires on farms pose a special threat, unlike an urban or city property that has immediate access to a well organized fire department and an abundance of water. Most farmers are relatively isolated from fire fighting equipment and may lack adequate water for fighting a fire. As a result of this, the economic losses due to fires in farming are severe and out of proportion to the actual number of fires occurring.

The leading causes of fires are: careless smoking; faulty electrical equipment; and, faulty heating equipment. Other causes of farm fires could include lightning and the improper storage or use of flammable liquids. This fact sheet deals generally with the prevention of fires and fire fighting equipment and techniques.

How Fires Burn

An understanding of how fires burn is essential if a fire is to be extinguished. The three (3) major elements of fire are: a) air; b) heat; and, c) fuel. All three of these elements inter-react to create a fire. If the reaction linking the elements is interrupted, the fire will be extinguished.



Fire Classes

The fuel involved in fires varies greatly. Similarly, the equipment used to extinguish fires varies. In order to properly identify different fire types, a method of

classifying fire exists. The fire classifications will determine what type agent should be used to most effectively and safely extinguish the fire.

Fire Classes

Class A Fire - ordinary combustibles, wood, paper, textiles, etc.

Class B Fire - flammable liquids, gasoline, oils, fats, etc.

Class C Fire - live electrical wiring, motors, appliances, etc.

Class D Fire - combustible metals, magnesium, potassium, etc.

Fire Extinguishing Equipment

Fire extinguishing equipment can be roughly divided into two main types, portable and fixed. Permanent fire hoses, overhead sprinkler systems

and hydrants are fixed equipment, and extinguishing equipment that can be moved is considered portable. For a number of reasons, portable extinguishers tend to be more practical for farm use.

Portable fire extinguishing equipment is available in a variety of sizes and shapes. All portable extinguishing equipment is rated or classified for the class of fire they are capable of extinguishing. Choosing the right extinguisher for a fire is extremely important if a fire is to be put out quickly and safely. For example; an "A" rated fire extinguisher can be used to extinguish a Class "A" fire, a "B" rated fire extinguisher can be used on a Class "B" fire, and a "C" rated one for a Class "C" fire, and so on.

Many fires however, can't be classified strictly as one type, they may involve a variety of flammable materials. For this reason, multi-rated extinguishers have been developed. (See Chart.)

Owing to the variety of work conditions that exist on the farm, farmers are advised to use an all purpose, A.B.C. rated extinguisher. This extinguisher uses a dry chemical agent and is capable of extinguishing Class A, B or C fires. The extinguisher is available in a variety of sizes and is not susceptible to temperature extremes.* All portable extinguishing equipment should be strategically located on the farm and checked regularly. Everyone on the farm should be trained in the safe use of extinguishers.

Warning -- Carbon Tetrachloride Extinguishers

For a number of years carbon tetrachloride (CCL₄) was a common type of extinguishing agent. Research has indicated that CCL₄ is not a safe extinguishing agent because when it comes in contact with heat, deadly chlorine gas is given off. All extinguishers using CCL₄ should be destroyed. To be perfectly safe, allow a local fire department to dispose of it.

Water -- And Lots Of It

While portable extinguishing equipment is an effective way to extinguish small fires, they are of little or no use in extinguishing a large fire. Water,

and lots of it, is the best means of combatting a large fire. For this reason every farm should have a pond located no closer than 100 feet from major farm buildings. Before any major farm building is constructed, plans should allow for adequate spacing between buildings to prevent the spread of a possible fire.




Fire Detection Equipment and Warning Systems

Today, a variety of fire detection and warning systems exist. There are two main types of fire detection equipment; heat sensors and smoke sensors or detectors. Heat sensors are relatively expensive and are used primarily in industry to trigger sprinkler systems. They provide a relatively short warning period. Smoke sensors or detectors have become extremely popular in recent years owing to their reliability and low cost. They also provide a good warning period. Smoke detectors can also be connected by means of a remote system to a central point, for example a farm house. In many Canadian jurisdictions, building codes now specify that all newly constructed dwellings must be equipped with an approved smoke detector.

A Fire Emergency Procedure

When a fire breaks out in a house or a farm building, everyone must be evacuated from the building immediately. Normal exits may be blocked; therefore, it is compulsory that emergency exits exist. Doors and windows should be closed when escaping a fire, failure to do so may cause air drafts which will fan the fire.

Once everyone is out of the building, call the fire department. Give your name, address, and the exact location of the fire. Have the person you're talking to repeat your instructions. Never allow anyone to re-enter a burning building!

Use and other information:	TYPE OF EXTINGUISHER				
	WATER TYPE		CARBON DIOXIDE	DRY CHEMICAL	MULTI-PURPOSE A-B-C
	Stored Pressure	Water Pump Tank	CO ₂	Dry Chemical	Dry Chemical
CLASS A FIRES: Wood, paper, trash having glowing embers 	YES	YES	NO	NO	YES
CLASS B FIRES: Flammable liquids, gasoline, oil, paints, grease, etc. 	NO	NO	YES	YES	YES
CLASS C FIRES: Electrical Equipment 	NO	NO	YES	YES	YES
EFFECTIVE RANGE	30' 40'	30' 40'	2' 5'	5' 20'	5' 20'
USUAL OPERATION	Squeeze handle or turn valve	Pump handle	Full pin, squeeze handle	Full pin, squeeze handle	Full pin, squeeze handle
SUBJECT TO FREEZING unless protected with antifreeze solution	YES	YES	NO	NO	NO
INSPECTION PROCEDURE	Check air pressure every 3-4 months	Discharge and fill with water annually	Weight annually	Check pressure indicator	Check pressure indicator

* A:B:C dry chemical extinguishers that are exposed to sub-zero temperatures for prolonged periods of time may freeze. Special cartridge activated extinguishers should be used for sub-zero applications.

Farm Fire Safety Rules

- never permit smoking in barns or near any flammable materials.
- never refuel engines inside a building or while the engine is hot or running.
- avoid spontaneous combustion in hay by making certain that all hay is properly dried before putting it in the barn.

- all electrical installations, wiring, etc. should be inspected and approved by the hydro authority.
- only burn rubbish in an incinerator equipped with a spark arrestor. The incinerator should be located 100 feet from any major buildings.
- all major farm buildings should be equipped with lightning rods in accordance with the Lightning Rod Act.
- crop dryers should be equipped with adequate controls that will automatically shut off blowers or dampers when temperatures get too high.
- pesticides should be stored in a separate building and clearly identified by means of a warning sign.
- fuel should never be stored inside a building.
- field burning should not be carried out under any circumstances.
- have your local fire department check your operation regularly.

The information and recommendations contained in this publication are believed to be reliable and representative of contemporary expert opinion on the subject material. The Farm Safety Association does not guarantee absolute accuracy or sufficiency of subject material, nor can it accept responsibility for health and safety recommendations that may have been omitted due to particular and exceptional conditions and circumstances.