

FARM SAFETY

For Everybody's Benefit

Reduce Farm Fire Risks! Prepare – Plan – Protect

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Farmers with safety plans may extinguish some fire risks in their operations and protect their livelihoods.

Fires are devastating. Farm fires even more so, because of the catastrophic consequences to the business and possibly the herd.

While farmers are well aware of the importance of business, transition and risk management plans, not many have fire safety strategies at their fingertips in the event of a fire. Barn fires spread rapidly, so quick action is critical. And beyond the loss of structures, livestock, equipment and production can be significantly impacted, not to mention the immense stress this places on the entire family.

This Fire Safety feature, with input from firefighters, farmers and others, provides coverage as information and not as comprehensive advice. Farmers should seek individual assessments and guidance from local professionals.

Be Aware of Ignition Points

Farm buildings, specifically dairy barns, have ample supplies of oxygen, fuel and heat, the perfect recipe for rapid fire movement.

With many years of hands-on experience in farming as a herdsman in Richmond, Mike Molema became a full-time firefighter with the Delta Fire Department. He says, "The ideal dairy barn is a big open structure with a lot of ventilation. These aspects create conditions that can cause your entire barn to go up. Every fire starts out small but it doubles in size every 30 seconds. In some areas, it could take 15 minutes or longer before fire trucks are on scene. That gives the fire a long time to grow."

While the causes and origins of many fires are difficult to determine following significant building damage, three leading causes of identifiable farm fires include mechanical or electrical failure, misuse of ignition sources or igniting equipment and construction or maintenance fault, lists an article by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) called, "Reducing the risk of fire on your farm."

"Statistics suggest that over 60 per cent of barn fires start due to some sort of electrical fault," says Dave Clipson, the Ontario director for PrevTech Innovations Inc. The Quebec-based company helps producers apply electrical safety best practices by providing tools to help them view the status of their electrical network.

For example, pressure washing can cause "water to penetrate electrical panels, ballasts, switches and junction boxes. Or wire connectors can come loose in switches. This damage can lead to electrical faults," he adds.

Molema acknowledges that, "Farmers are busy. They are Jacks and Jills of all trades and when something breaks, they are very good at fixing things on the fly.

General maintenance, routine inspections and housekeeping contribute to fire prevention, which starts with maintenance schedules so that equipment and moving parts remain safe and functional.

But a lot of times, those temporary fixes become permanent. This situation can lead to overloaded circuits, causing problems down the road."

Rodent problems can also lead to electrical fires because they chew on hot wires, Molema adds. And some barn environments can compromise electrical components. "Barns can be damp and corrosive, which can deteriorate electrical wiring, cause heat and start fires," says Art Sanderson, executive director for the Volunteer Firefighters Association of BC. In fact, equipment decay from corrosion can occur in barns less than five years after construction, OMAFRA's article says.

The dust, cobwebs and birds' nests that are difficult to avoid in barns can be fire ignition sources. For example, "In feed storage areas, dust can build up on surfaces. These surfaces are not always at eye-level, such as tops of structural components, so may be forgotten during cleaning cycles. Airborne dust could come in contact with an ignition source and cause an explosion and fire," Anderson explains.

Wet hay is another common fire starter, says Kevin Kools, a 15-year firefighter with Coquitlam Fire and Rescue, who grew up on his family's Surrey dairy farm. As a result, farmers should ensure they store feed properly with adequate ventilation.

Other potential causes of fire include misuse of "heating equipment such as space heaters, central heating or distribution equipment; open flame from cutting, welding, or cigarettes; chemical reactions and lighting that is too close to flammable materials," Kools adds.

Reducing your Fire Risk Means Protecting your Assets

"Fire prevention is a process," says Bruce Green. He worked on dairy farms for about 30 years and was a volunteer firefighter during all of those years. Green is now the fire chief for Oyster River Fire Rescue and is based in Black Creek on Vancouver Island.

Indeed, fire safety and prevention initiatives are thoughtful, intentional and require farmer and staff due diligence. For example, general maintenance, routine inspections and housekeeping contribute to fire prevention. Start by developing maintenance schedules to keep equipment and moving parts safe and functional.

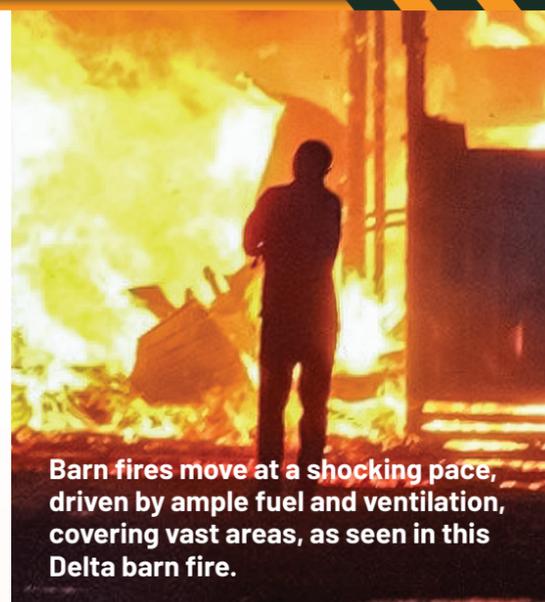
"Regular barn inspections can help identify areas that need special attention," Sanderson says. "Maintenance of all equipment, especially electrical components, is also important to maintain a safe working barn. Heat caused by malfunctioning equipment or wiring is a serious threat."

To help prevent electrical fires, "Make sure that wiring is done by a professional and all electrical work is up to code," says Kools.

Always have a professional inspect electrical work to ensure components meet requirements to properly function in the environment they are placed, such as damp or corrosive areas of the barn, Sanderson adds.

Reduce the probability of human error where possible, Molema says. "If you have employees who smoke, have a designated area for them to do so. You are just asking for trouble if they are permitted to smoke in the barns."

Farmers who use ignition sources, such as welders or grinders, to repair stationary equipment while inside a farm building greatly increase the risk of fire. In this situation, farmers should ensure they remove all combustible materials from the area and establish a fire watch **during and following the job.**



Barn fires move at a shocking pace, driven by ample fuel and ventilation, covering vast areas, as seen in this Delta barn fire.

Farmers should also ensure that they properly store, label and locate liquid fuel and propane tanks according to applicable codes. Clear labelling provides important information to employees and firefighters.

Producers building new barns or retrofitting old buildings could "use non-combustible materials, such as steel and fire-rated doors," Molema adds. He suggests installing sprinkler systems, which cannot prevent or extinguish fires, but **can slow fire movement** until firefighters arrive on scene.

Make Fire Safety a Priority

Farmers should dedicate time to develop detailed fire safety plans, Molema says.

Some items that farmers can highlight in this plan include:

- evacuation routes and areas for livestock and a plan to keep cattle away from the burning building
- meeting area for family and staff to ensure that all people on site are accounted for during an emergency
- building and farm maps so that when firefighters arrive, they know locations of animals, chemicals, manure pits, fire extinguishers, etc.

To assist with cattle evacuation in the event of a barn emergency, gates should open **outwards**. "The cows come up to the gate to escape and farmers can't swing the gates inwards with the cattle standing there," Green says. And "make sure you know the emergency contact number you need to call in the event of a fire. It should be 9-1-1, but won't be for all areas," he adds.

Every farm should have a designated leader in the event of an emergency. With this approach, "Everyone isn't trying to do his or her own thing. Stick to and implement the plan with one person in charge," Molema says.

Perhaps the most effective tool to have when a fire starts is a fire extinguisher. But just having one on site is not enough, Molema asserts. Make sure they are the right type, tested annually and that employees know how to use them, he adds. "When a fire breaks out, panic sets in for a lot of people and they may not exercise common sense. Staff members may forget where things are, so if everything is clearly marked and easily accessible, that can help them act quickly and safely," Molema says.

Farmers can contact their local fire departments for more information on fire prevention and firefighters can provide farm fire safety tips. In addition, the Canadian Farm Builders Association is an organization that offers fire safety resources and a directory. "Fires can happen anywhere at any time, so you want to be prepared," Molema concludes.

