



SPONTANEOUS IGNITION OF HAY

LOSS CONTROL BULLETIN

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Hay fires are a leading cause of barn and storage building fires every year. These fires usually result in a total loss of the building and its contents.

Spontaneous ignition of hay is likely due to excessive moisture in the stored hay. In order to prevent spontaneous ignition, proper harvesting procedures and storage practices must be followed.

CAUSES

The presence of excessive moisture allows bacteria and other microorganisms to grow, which creates heat in the stored hay. This heating process starts to dry out the surface of the hay in the surrounding area. This heat can kill most bacteria and microorganisms, but if there are bacteria present that can live at higher heat levels, they will continue the process of heating. Temperatures can be reached at which, when mixed with the right oxygen content, the hay can spontaneously ignite. Most hay fires happen in the first six weeks after baling. This is most likely because the hay was not cured properly after it was cut.

PREVENTION

Pay attention to the weather when planning your hay-cutting schedule. After the hay is cut and baled, the best method to prevent spontaneous ignition is the most obvious: Remove excessive moisture. The ideal moisture content is between

15 and 20 percent and hay should be cured to a moisture content below this level before it is stored. Using specialized equipment, such as conditioners can help to remove excessive moisture and dry the hay faster.

Hay stored for longer than six weeks still has the potential to get wet which could allow this process to happen at any time. Hay storage barns or buildings should be weather tight and sealed.

If hay is to be stored outside it should be covered with plastic or another material that will prevent moisture from getting inside. If the bale is uncovered, store them individually to allow air circulation around the bales. Do not place the bales directly on the ground. Storing the bale on gravel or on objects will prevent ground moisture from penetrating the bale and will also allow air to circulate underneath the bale.

HEATING OF HAY

During the first six weeks of storage, the temperature of the bales or stacks should be monitored at least twice daily. A probe and thermometer should be used to monitor the temperature in the center of the bale or stack of hay. Drive the probe into the bale or stack and then lower the thermometer into the probe. The thermometer should be left inside the probe for 10–15 minutes.

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TEMPERATURE INTERPRETATIONS

Below 130 degrees F	Continue to observe daily.
130-140 degrees F	Temperature unstable. Recheck in a few hours.
150-175 degrees F	Temperature likely going to go up. Move the hay to provide additional air circulation and wet it down to aid in cooling. Continue to monitor temperature regularly.
175 degrees F	Fire is imminent or may already be present near the probe. Call fire department. Do not move hay any further as additional exposure to air could ignite the hay.

CONTROLLING A FIRE

Once temperatures reach more than 175 degrees F, do not move the hay. Exposure to additional oxygen could result in the fire quickly growing out of control. If there are flammable objects nearby (such as fuel tanks), evacuate the area immediately. Allow the fire department to do their job. When they say they have the fire under control and think the hay can be moved, move it to a safe location away from any buildings or other combustible materials.

PREVENTION IS EVERYONE'S BUSINESS. TRUST IN TOMORROW.® CONTACT YOUR AGENT TODAY TO LEARN ABOUT OUR LOSS PREVENTION PROGRAMS.

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