

## Preventing Barn Fires

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One of the things that I have noticed in agriculture news lately is the unfortunate occurrence of barn fires across the country. While barn fires are probably never 100% preventable, there are some things that we can do as horse owners that may prevent this disaster, or at the very least minimize the damage and loss of horses. While doing some research in the area of barn fires, I came across some information I found valuable, yet simple enough that it could be done quickly to ensure my barn was up to date on fire prevention.

At the 2008 American Association of Equine Practitioners convention, Rebecca Gimenez, Ph.D. stated that barn fires kill more horses annually than any other type of nonmedical emergency. Of 11,500 agricultural storage facility fires per year, 88% are barns or stables with animals. This results in \$250 million in property losses each year. In 87 horse-barn fires incidents reported in 2006 and 2007, 461 horses died and an unknown number were injured. Like most tragedies, I never think that it could happen to me. Thus, I don't take near as much precaution as I should when it comes to protecting my horses in the event of a barn fire. After much research on the topic, I was able to put together as list of pre-cautions/actions horse owners can take to help prevent barn fires:

***What is the evacuation plan for every horse and person from the facility?*** Have you laid out an evacuation plan and discussed with your family and employees? Horses are known to run back into a barn fire, so simply opening the door is not enough to ensure they will escape. A halter and lead rope should hang on each door so that it is easily accessible and can be placed on the horse and led out quickly. Stalls and barn doors should remain unlocked at all times. Stall and barn doors should also be clear of any objects that may slow down the evacuation process.

***Store hay, shavings, cleaning products, and other combustibles away from the barn.*** These items will help the fire spread quickly and increase the temperature of the fire exponentially. Keep only a small amount in the barn and replenish as needed. If they are to be kept in the barn, cleaning products, oil, and alcohol should be kept in steel boxes.

***Minimize human error.*** Keep "No Smoking" signs visible around and inside barn and demand that there be no smoking in the barn. Also, exercise extreme caution when using welders or cutting torches. The sparks from these items or from cigarettes are enough to ignite a fire. Vehicles should be parked away from the barn. The heat from exhaust pipes have been known to start hay stacks on fire. Furthermore, have an electrician make frequent visits to the barn to check the wiring system for aging and rodent damage. If possible, cut off electricity to the barn if no one is home or around the barn.

***Keep appliances to a minimum.*** Avoid using space heaters or radios that are not battery operated. Overloaded circuits can lead to wires becoming hot and reaching ignition levels. Keep light bulbs caged and switches covered.

***Install lightning rods at the highest point of the barn.*** Lightning rods on rooftop high points are connected by cables that run to ground to divert the energy of a strike away from the structure itself. Some barn owners choose not to use lightning rods, mistakenly believing that they attract lightning, but the devices simply conduct lightning that would have hit a structure anyway.

***Guard against spontaneous combustions.*** Avoid leaving manure piles and insufficiently cured hay around the barn. Because there's no ventilation in damp hay, the heat thrown off by the process builds until the ignition point for the drier surface hay is reached. Hay should be stored on pallets with a small amount of distance between each bale if possible. Though it increases labor and expense, keep only a limited amount of hay stored in the barn.

***Install a warning system.*** Flame and heat detectors with electronic eyes can signal the presence of heat or flame as it is rising, and carbon monoxide detectors are valuable, too. Cheap smoke detectors aren't as useful because they are triggered by air particulates and dust to give false alerts.

***Keep at least one fire extinguisher near or in the barn.*** Tags on fire extinguishers should be checked and contents updated at the local fire department as necessary. An extinguisher should be 10-20 pounds, minimal. Personnel should be trained in extinguisher use, as there is no time for a learning curve when a fire is doubling in size every minute.

***Distance between buildings and barns.*** All outbuildings and barns should be a minimum of 50 feet apart from each other. The greater distance between each building, the less likely a fire can spread from one building to another.

Most horse fatalities are due to smoke inhalation; as a horse panics, rises in heart and respiratory rates increase inhalation of toxic fumes. Thus, is imperative to have the proper plans in place should there be a fire in your barn. Special thanks to Jane Seegal, Rebecca Gimenez, Ph.D, and Nancy S. Loving, DVM for their contributions to this article.

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