



# Northeast Missouri Ag Connection

*Your local link to MU for ag extension and research information*  
<http://agebb.missouri.edu/agconnection>

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## Missouri Fence Law Change - Impact on Livestock Owners and Landowners

Missouri Senate Bill 844 became law as a result of the Legislature overturning Governor Nixon's veto. This article will address the impacts on livestock owners and landowners.

Senate Bill 844 reads, *"If any horses, cattle or other stock shall break over or through any lawful fence, as defined in section 272.030 and 272.230, and by so doing obtain access to or do trespass upon, the premises of another, the owner of such animal shall be liable for any damages sustained if the owner of the trespassing horses, cattle, or other stock was negligent."* It is designed to replace the former livestock owner's responsibility and liability for their animals with one concise statement.

Following are the potential implications of this law change:

- (1) **Actual and double damages for trespassing livestock no longer exist.** Double damages have very seldom, if ever, been enforced; however, the new statute language would only allow actual damages done in certain cases. While it does not necessarily mean insurance companies will not pay damages, it would appear to allow them to deny claims in most cases.
- (2) **Distraint of livestock no longer exists.** The old law allowed neighbors to distraint livestock, generally on non-boundary fences and after the 1<sup>st</sup> trespass of the livestock, which is no longer allowed. Concerns still remain with livestock owners whose animals repeatedly escape.
- (3) **Under what circumstances do livestock owners face liability for their animals?** The new language states - if the livestock owner was negligent. Negligence could include: (a) a fence that does not meet the minimum standards in the law, (b) watergaps that are left unfixed for days after they are out, (c) a bull/stud/boar/etc. that has gotten out more than once or (d) animals that are malnourished and looking for something to eat elsewhere.
- (4) **This is a good change for livestock owners, right?** This appears to be a good change which can help prevent some lawsuits where someone is trying to get money due to animals getting out (for example on a road). However, it is likely this new law will be tested in many ways over the next few years. Livestock owners will have to be diligent in keeping up their fences.
- (5) **How will it affect non-livestock owners?** In the local option law counties (19 currently in Missouri), it is not going to have much effect since both landowners continue to be legally responsible for their ½ of a boundary fence. In general law counties, both parties of the boundary fence, whether a livestock owner or not, have responsibility to keep brush off the fence from their own property; failure to do so or

removal of existing fences may prevent damage collection.

Missouri's fence law will continue to be very complicated and confusing, even with this change. University of Missouri Extension has an updated guide on the law, Guide 811, Missouri's Fencing and Boundary Laws: Frequently Asked Questions <http://extension.missouri.edu/p/G811> identifies both local option and general law counties. Guide 810 Missouri's Fencing and Boundary Laws <http://extension.missouri.edu/p/G810> will be revised soon. For fence law questions contact your local ag business specialist.

**Source:** *Joe Koenen, ag business specialist*

## Gene-edited Pigs Protected from Reproductive and Respiratory Syndrome Virus

Porcine Reproductive and Respiratory Syndrome (PRRS) was first recognized in the United States in 1987 and has become one of the most significant swine diseases in North America, Europe and Asia. The annual cost of PRRS in North America alone is over \$600 million. Costs associated with PRRS for North America and Europe combined equates to \$6 million per day.

Symptoms of PRRS include respiratory disease (cough and fever) and reduced growth performance in young pigs. While in pregnant sows, infection can result in reproductive failure and persistently infected piglets with low birth weights. Vaccination programs have been unsuccessful in controlling the virus (PRRSV).

The virus is believed to infect white blood cells in the lungs of pigs by way of a molecule called CD163. CD163 is a protein which is generated by a gene of the same name. Through the use of a relatively new technology, researchers from the University of Missouri, were able to produce pigs protected from the virus. This editing technology allows researchers to make precise edit modifications to individual genes. By editing just a few base pairs within the CD163 gene, pigs were produced without a functional CD163 gene, thereby, no longer capable of producing the CD163 protein.

<p><b>In this article.....</b></p> <p>Wild type – refers to pigs with a functional CD163 gene</p> <p>Knock out – refers to pigs without a functional CD163 gene</p>
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Pigs with functional CD163 genes and those without the functional gene were sent to Kansas State University, where they were challenged with the PRRSV. Pigs were inoculated with the virus through both intramuscular and intranasal injections. Pigs were housed together within the same pen to allow continual exposure to the virus from infected pen mates. At the conclusion of the study, the knock out pigs did not become infected with the virus and did not exhibit signs of PRRS. Knock out pigs did not develop antibodies to the virus, as if the immune system never saw the virus; while the wild type pigs all exhibited clinical signs consistent with PRRSV infection.

Further research is needed on different genetic lines of pigs to determine whether growth performance, feed efficiency, and susceptibility to additional pathogens are affected. This study looked at a single strain of the virus; therefore, others will need to be tested in the future. Use of genome-edited animals in agriculture would eliminate PRRS-related economic losses for swine producers and could be used on any number of other disease and production challenges.

A presentation on the subject can be viewed at [https://www.youtube.com/watch?v=\\_vYLkeBUJU0](https://www.youtube.com/watch?v=_vYLkeBUJU0)

**Source:** *Heather Conrow, livestock specialist*

## Protect Plants from the Elements of Winter

Preparing the garden for winter marks the end of the growing season. There are several tasks that must be performed to protect plants from the harshness of winter weather.

Start with cleaning up the garden. Remove spent flowers and vegetables, and if not diseased or insect infested, add them to the compost pile. Cut back faded or dead foliage on perennials after the first hard frost; unless, they add color to the garden in the dreary winter months or provide seed for the birds. Leave dead foliage on chrysanthemums. Research has proven chrysanthemums not cut back over-winter better than those whose foliage has been removed.

Apply a 2-4 inch layer of mulch around perennial plants, shrubs and bulb beds to protect them from the elements of winter. Sources of organic mulch include shredded leaves, pine needles, wood chips, or gravel. Do not use un-shredded leaves which may mat down and suffocate plants. Bulb beds can be covered with evergreen boughs.

Modern, bush-type roses (hybrid teas, floribundas, and

grandifloras) require protection during the winter months. Exposure to low temperatures and rapid temperature changes can severely injure and often kill unprotected roses. Hilling or mounding soil around the base of each plant is a way to protect bush-type roses. Mound soil 10 to 12 inches high around the base of the canes. Place additional material such as straw or leaves, over the mound of soil. A small amount of soil placed over the straw or leaves should hold these materials in place. Prepare modern roses for winter after plants have hardened from several nights of temperatures in the low to mid-twenties. Most of the time ‘Knockout’ roses typically do not need this kind of protection, but some ‘Knockout’ roses have been winter killed. ‘Knockouts’ which have experienced winter damage in the past should be protected.

Strawberry plants are susceptible to winter injury. Temperatures below 20<sup>0</sup>F may damage the roots and crowns of unprotected plants. Repeated freezing and thawing of the soil through the winter months can heave unprotected plants out of the soil and cause considerable damage. Apply 4-5 inches of straw mulch in late November or early December to strawberry beds. Allow strawberry plants to harden or acclimate to the cool fall temperatures before mulching the bed.

Southwest Injury is a very common winter injury to young trees in northern Missouri. Prevent Southwest Injury to young trees by wrapping newly planted, smooth barked trees, especially sensitive varieties like maples, crabapples and fruit trees with a light colored tree wrap. Late November or early December is the ideal time to wrap trees. Oak trees and other native hardwood trees typically do not need to be wrapped. Tree wrap can be purchased from a garden center or farm supply store. When wrapping trees, start at the bottom of the trunk and wrap up, overlapping the wrap. Wrap up to the first branch and then tape it off.

Protect young trees from hungry rabbits which often gnaw on the bark of many woody plants. The best way to prevent rabbit damage to young trees is to place a cylinder of hardware cloth (1/4 inch mesh wire fencing) around the tree trunk. The hardware cloth cylinder should stand about 1 to 2 inches from the tree trunk and 20 inches above the ground. The bottom 2 to 3 inches should be buried beneath the soil. Small shrubs, roses, and raspberries can be protected with chicken wire fencing.

For more information, contact your local University of Missouri Extension Center.

**Source:** *Jennifer Schutter, horticulture specialist*

## Keeping Grain in Condition

Management is required to keep grain in good condition once it is placed in storage. Because of differences in temperature between the grain in the bin and the outside air, air inside the bin migrates.

With cold outside air, the air inside the bin moves downward along the outside wall and then upward toward the center of the bin. The air that comes up through the center of the bin will carry some moisture as it contacts the cool grain in the center of the bin. Moisture will then condense and cause the grain in this area to go out of condition and crust over.

The crusting will keep air from flowing through the mass of grain and making it impossible to keep the grain in condition. To prevent this problem, grain should be cooled to about 40 degrees F in the fall and warmed to about 60 degrees F in the spring. This will minimize migration of air through the bin.

What are safe storage moistures?	
Grain	Maximum Safe Moisture Content (percent)
<b>Shelled Corn or Grain Sorghum</b>	
Sold by spring	15.5
Stored up to one year	14.0
Stored more than one year	13.0
<b>Soybeans</b>	
Sold by spring	14.0
Stored up to one year	12.0

**Check grain weekly.** Use a grain probe and a thermometer to check the temperature by probing below the surface of the grain in several places. Record these temperatures to monitor changes. Moving air through the grain can help in determining grain condition. If a musty odor is detected, problems may exist not detected by inspecting the grain or checking the temperature. If problems do occur, fans may need to be run to dry the grain. In some cases, grain may need to be removed from the bin.

Covering the fan intake when it is not in use can prevent air from moving through it and minimize insect and rodent problems.

**Should air be pushed or pulled through the bin?** There is no right or wrong answer — it depends. If air is pushed through the grain, moisture is most likely to condense on the cold roof. This can cause some moisture problems with grain at the top of the bin. An advantage of pushing the air is if grain spoilage does occur, it will most likely be at the top of the bin and is easier to detect.

When air is pulled through the bin, the moist air coming off the grain can condense on floors and on grain near the floor. This can block ducts and plug the aeration

system. If air is pulled air through the grain, one should wait until several feet of grain has been placed in the bin to avoid pulling fines into the duct.

**Leave the fan on long enough.** Anytime a drying or cooling front is started through the grain, make sure the fan runs long enough to move the front completely through the grain. When the temperature of the air coming through the grain is equal to the outside air, drying or cooling is complete.

**Source:** *Kent Shannon, natural resource engineer*

## **Missouri Livestock Symposium - Dec. 2nd & 3rd**

Kirksville, MO (*Middle School, 1515 S. Cottage, Grove*)

Details/Schedule: <http://www.missourilivestock.com>