

Dear Hog-Handling Update subscriber,

As the heat rises, handling and transportation practices become more important. Below is a special summer issue from 2010 that offers some practical tips for dealing with the summer heat.

If it's your first time reading this issue, I hope you find it helpful. If you received it last year, hopefully it serves as a good reminder that as it gets hotter, it is important to consider these fundamentals of summer handling and transport.



The *Hog-Handling Update* is a monthly informational email from Elanco Animal Health focused on pig handling and transportation. The author, Dr. Matt Ritter, is a swine technical consultant with Elanco. With hands-on experience loading more than 50,000 pigs and a Ph.D. in pre-slaughter stress, Dr. Ritter combines academic and practical approaches to advancing the industry's knowledge.

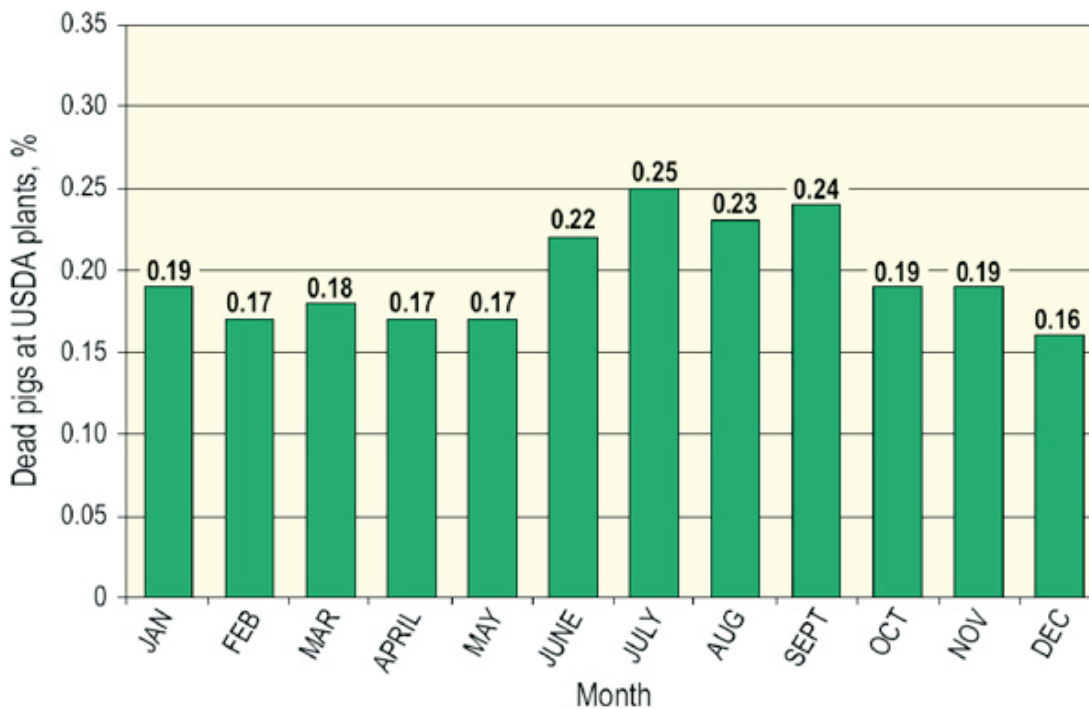
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## Special Report: Practical tips for beating the heat

The percentage of dead pigs at USDA-inspected plants are reported by the Food Safety Inspection Service (FSIS) as "swine condemned ante-mortem for deads," and these national statistics are available to the public via the Freedom of Information Act. Figure 1 illustrates the monthly incidence of dead pigs (dead on arrival and dead in pen) at USDA-inspected plants for the calendar year of 2008.<sup>1</sup>

**Figure 1. Percentage of dead market pigs at USDA-inspected plants by month for the calendar year of 2008<sup>1</sup>**

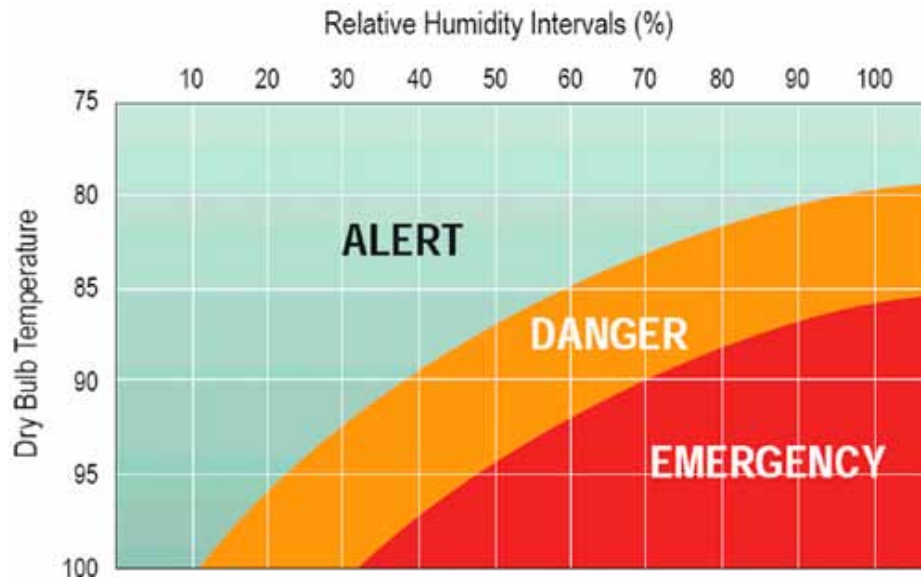


In 2008, the percentage of dead pigs at the packing plant was 0.20% (2009 numbers were not available at press time). However, the percentage of dead pigs at the packing plant was the highest during the months of June, July, August and September. This special report outlines several practical tips for minimizing stress throughout the marketing process during the summer months.

## Preparation and Communication

1. Three recent studies have suggested that withdrawing feed for 12 to 24 hours prior to loading may reduce transport losses.<sup>2,3,4</sup> However, please note the following:
  - a. Make sure the total feed withdrawal period prior to harvest does not exceed 24 hours, as this may negatively affect hot carcass weights.<sup>5</sup>
  - b. Loads arriving at the plant towards the end of the second shift may be subjected to overnight lairage, which could result in an additional 12 hours of feed withdrawal—plan accordingly.
  - c. Feed withdrawal should only be implemented on the pigs being marketed. If this is not possible, do not withdraw feed prior to loading.
2. Prior to loading, prepare the facilities for load-out:
  - a. Turn misters off inside the barn.
  - b. In a tunnel ventilated barn, turn fans down to equalize the pressure. However, remember to return the fans to their original settings immediately after loading.
  - c. Spread an absorbent material (wood shavings, barn lime, rice hulls, feed, etc.) on wet and slick floors to prevent pigs from slipping and injuring themselves.
  - d. Have a garden hose hooked up and ready to shower pigs inside the trailer.
  - e. If feasible, place large fans near one side of the trailer during loading to force air through the trailer to cool pigs while the trailer is not moving.
  - f. Designate a resting pen for pigs having difficulties walking and/or showing signs of stress.
3. Prior to loading, prepare the truck and trailer for loading:
  - a. Make sure the truck is full of fuel prior to arriving at the site.
  - b. Access a weather report prior to loading. Review the Livestock Weather Safety Index (Figure 2) and your system's standard operating procedures for bedding and showering pigs. Drivers should adjust trailer settings to match the environmental conditions at the farm.
  - c. Equip trailers with an internal sprinkler system. Test the sprinkler system and make sure each sprinkler is functioning properly. Make any necessary repairs prior to loading.

**Figure 2. The National Pork Board's Livestock Weather Safety Index<sup>6</sup>**



4. Loading crews and drivers should discuss the following information prior to loading:
  - a. Number of pigs to load, estimated weight of the pigs, and barn cut
  - b. What plant the load is being shipped to
  - c. Any special loading instructions (culls, split-load, etc.)
5. Adjust load size according to trailer length, pig weight, and weather:
  - a. During the summer months, loading densities should not exceed 58 lbs / ft<sup>2</sup> <sup>7</sup>
  - b. Develop a "cheat sheet" for the number of pigs to be loaded into each compartment for common pigs weights in your system (i.e., 250 lbs, 275 lbs, 300 lbs)
  - c. See Elanco's loading density calculator

6. Develop a loading strategy that minimizes the distance pigs are moved during loading. If it is not feasible to minimize the distance pigs are moved, utilize the following strategy:
  - a. Load pigs from the front of the barn onto the top deck
  - b. Load pigs from the back of the barn onto the bottom or middle decks

## Loading, Transportation, and Unloading Procedures

1. Minimize stress when removing pigs from the pen. Two handlers should enter the pen in a calm and quiet manner. Handlers should remove pigs from the pen by using sorting boards and paddles. Never use an electric prod in the pen. Do not get in a hurry—be patient. If a pig is showing signs of stress or is difficult to remove from the pen, leave this pig alone and select the next largest pig in the pen. After 4 to 6 pigs are in the aisle, one of the two pen handlers should take these 4 to 6 pigs to the next handler in order to prevent filling the aisle full of pigs.
2. The number of pigs a handler moves from the barn pen to the trailer has a major impact on dead and non-ambulatory pigs at the packing plant.<sup>8</sup> Move pigs in groups of 4 to 6 to reduce the frequency of wedging and jamming in the aisle. Research has shown that pigs jammed or wedged in the aisle during handling are more susceptible to becoming non-ambulatory.<sup>9</sup> The frequency of pigs becoming jammed or wedged in the aisle during loading is likely to be dependent upon aisle width and the weight of the pigs. As a general rule of thumb, the handler needs to be able to reach the first pig. If this cannot be accomplished by moving groups of 4 to 6 pigs, then the handler should take smaller groups to the truck.
3. Minimize use of electric prods during the loading process. It is well established that aggressive handling with electric prods increases the rate of non-ambulatory pigs.<sup>10</sup> However, a recent study reported no differences in rectal temperature or blood acid-base balance for market-weight pigs moved at their own pace for 164 feet through a handling course with plastic livestock paddles or with two shocks from an electric prod.<sup>11</sup> Therefore, the number of shocks that a pig receives from an electric prod during the loading process (from barn pen to trailer compartment) should not exceed two shocks per pig. To accomplish this, only the person moving pigs out the doorway should have an electric prod. Everyone else in the loading crew should use plastic livestock paddles and sorting boards.
4. Controlled research has demonstrated that the vast majority of fatigued pigs will recover within 2 to 3 hours, if the stressors are removed.<sup>12</sup> Watch for pigs having difficulties walking and displaying physical signs of stress (open-mouth breathing, skin discoloration, muscle tremors, and/or abnormal vocalizations). Place pigs displaying these symptoms into a recovery pen and allow them to rest for a minimum of 3 hours prior to loading. If a pig has not recovered after 3 hours of rest, this animal needs to be euthanized by using safe and approved methods (i.e., captive bolt gun).
5. The driver and loading crew need to communicate the number of pigs needed to fill each compartment as drivers may make adjustments during the loading process.
6. If pigs are having difficulties climbing the internal ramp of the trailer, place them in the bottom rear compartment (doghouse) of the trailer instead of loading them on the top deck.
7. Showering inside the trailer for 5 minutes immediately after loading during hot weather can reduce the skin temperatures of pigs by 10%.<sup>2</sup> Use Table 1 as a guide for when and how to shower pigs during loading in the summer months.<sup>13,14</sup> Please note this is a guide based on best industry practices, and controlled studies are needed to validate these recommendations. If the temperature is 60-80°F, wet the bedding prior to loading. If the temperature is above 80°F, wet the bedding prior to loading and shower the pigs after loading for approximately 5 minutes—just long enough to get the pigs and the absorbent material wet. Avoid showering pigs to the point that water is standing in the trailer, as this water will most likely run out of the trailer and onto the road once the trailer leaves the farm. Remember that evaporative cooling in pigs requires both wetting the pigs and wind moving across their backs. Therefore, it is essential to get the truck on the road after the pigs have been showered.

**Table 1. General recommendations for showering pigs during the summer<sup>13,14</sup>**

Temperature	Bedding - Shavings	Boarding	Sprinkler Use
60° - 80°F	2 bags/deck	0%	Wet the bedding before loading
> 80°F	2 bags/deck	0%	Wet the bedding before loading, shower pigs for 5 min. after loading

8. Do not pour large amounts of cold water onto a hot pig as this may put the pig into shock and result in death.<sup>13</sup>

9. Once the trailer is loaded, get the truck on the road as soon as possible. Keep the truck moving and avoid unnecessary stops. This is extremely important because the temperature inside the trailer increases when the truck is not moving.<sup>15</sup>
10. Avoid long waiting periods at the plant prior to unloading by doing your best to meet your scheduled dock time. A positive relationship has been reported between waiting time at the plant prior to unloading and transport losses,<sup>15</sup> and this suggests that transport losses increase as waiting time at the plant increases.
11. Prior to arrival at the plant, determine the current weather conditions at the plant and check on the anticipated wait time prior to unloading. Communicate with plant personnel and determine if your trailer will have immediate access to canopies, fans, and/or water hydrants. If you will not have immediate access to these cooling resources, develop an alternative plan that may include keeping the truck moving until the plant is ready for your pigs.
12. Unload the trailer at a slow and calm pace by using sorting boards and plastic livestock paddles. Do not use electric prods during the unloading process.

## Handling Help?

Elanco Animal Health offers a variety of animal-handling resources including:

- Load-site assessments
- Loading crew and driver training
- Facility design evaluations
- Standard Operating Procedure (SOP) development
- Developing databases to track transport losses

To learn more about Elanco's animal handling resources, contact your Elanco representative or send your questions or comments to [dr.ritter@hoghandlingupdate.com](mailto:dr.ritter@hoghandlingupdate.com).

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