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Hot Weather Affects Pig Performance

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On many Missouri hog farms swine performance may be hurt more by hot weather extremes than cold. Hog buildings are usually designed to handle cold weather while producers may be willing just to "wait out" hot spells.

Hot weather can result in actual death loss but more typically producers experience losses due to poor conception at breeding and less noticeable losses in growth and efficiency performance of pigs. Larger animals (gestation, farrowing breeding and hogs ready for market) start feeling the effects of heat stress even with temperatures in the 70's. If temperatures remain above 85°F for more than a short period of time substantial losses in performance and in reproductive efficiency can occur unless some kind of cooling relief is provided.

Swine have difficulty getting rid of excess body heat. To relief heat stress they depend on heat dissipation to the environment through one of the following ways: radiation, conduction, convection, and evaporation through the respiratory tract (panting). Evaporative cooling from the body surface also works well if some type of skin wetting is provided with adequate air movement.

TEMPERATURE AND MANAGEMENT SHOULD GO UP TOGETHER

Hot weather and ordinary care and management on hog farms can result in large losses. "Ordinary management" is not sufficient when temperatures reach 95-105°F. Outages of electricity, waterers failing, slight overcrowding, are all common occurrences that usually result in no loss. In extreme temperature conditions, they can cause a catastrophe. Extra care to provide shade, making sure sprinklers are working, being certain water is supplied, are all of extreme importance. A reduction in hog numbers per pen under that usually recommended is often desired. Supplemental electrical generating equipment should be part of all confinement hog operations. When all else fails, hogs can be turned out to ponds or dirt lots with water.

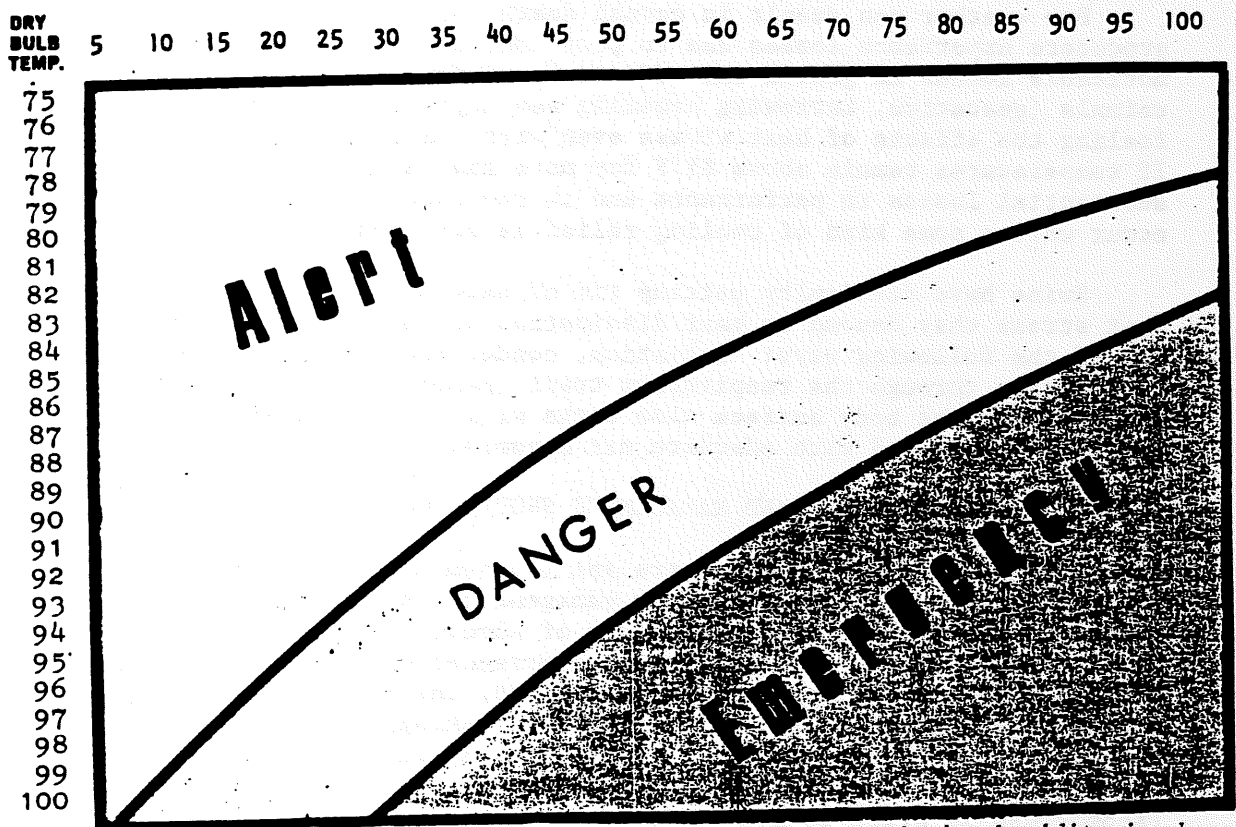
SHIPPING HOGS--LIVESTOCK SAFETY WEATHER INDEX

Hogs are particularly susceptible to hot weather when extra handling or loading in the process of shipping to market is done. On many radio stations, a livestock weather safety index report is used to alert livestock producers to hazardous weather conditions. The following chart is used in determining the degree of the emergency in issuing these reports. It is based on temperature and humidity. Particularly in the EMERGENCY state, all handling stress should be kept at a minimum

for hogs. Animals need to be where they can get a free circulation of air, and shade provided. Water available for drinking and sprinkling is desirable if it can be arranged. Avoid the use of cold water that might "shock" hogs if used in large quantity. Hogs that are to be loaded should be loaded onto wet bedding to reduce heat stress during transit and all movement should be kept to a minimum.

LIVESTOCK WEATHER SAFETY INDEX

RELATIVE HUMIDITY INTERVALS (%)



Temperatures above 100 are always "Danger" and if the relative humidity is above 80-85 per cent, the situation is "Emergency".

EFFECT OF HEAT ON GAINS AND FACILITY USE

Extremes of temperatures either hot or cold will effect average daily gain and feed required per pound of gain. This has been documented in controlled research trials as well as being a common observation of hog farmers. The following experimental data (table 1) illustrate the degree of depression in gains and increase in feed requirements at various temperatures.

Table 1. Effect of Temperature on Rate and Efficiency of Growth of Swine

<u>Temp. (F)</u>	<u>ADG (Lb)</u>	<u>F/G</u>
32	1.19	9.5
41	1.17	7.1
50	1.76	4.4
59	1.74	4.0
68	1.87	3.8
77	1.59	3.7
86	.99	4.9
95	.99	4.9

Management procedure will do considerable in taking the edge off of these high temperatures. Even with good management, one needs to plan for some reduction in performance, and consequent changes in scheduling facility usage.

WATER IS CRITICAL FOR HOGS IN HOT WEATHER

Animals must drink large quantities of water in hog weather if their evaporative heat loss system is to help them cool off. Table 2 lists the summer water requirements for swine. Water should be kept as cool as practical in order to achieve best weight gains in summer. Cooled water can slightly increase daily weight gains in very hot weather. Thus, water direct from a well is preferable to water stored in an above ground tank for an extended period or from a shallow farm pond.

Table 2. Typical Summertime Water Requirements for Swine*

<u>Type of animal</u>	<u>Water per head per day, gallons</u>
Sow - litter	8
Nursery pig	1
Growing pig	3
Finishing hog	5
Gestation sow	6

*Includes water use for drinking and moderate water wastage. Water cooling systems may increase usage.

Substantial cooling is possible by wetting pig's skin and allowing the water to evaporate. The old system of pasture wallows worked well. Today sprinkler systems can be economically constructed and operated on thermostat-controlled timers to efficiently wet the animals and allow them to dry. These may be designed to run 1-2 minutes every 30 minutes when the temperature is above some set value (typically in the 80-85°F range).

A drip system allowing about 1 gallon of water per hour to drop on the shoulder and neck of sows in crates works well during hot weather to reduce stress from heat.