

Poultry Patter

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HOT WEATHER STRESS

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Modern commercial poultry units may have mechanized watering, feeding, and egg gathering systems. Some people think this means they have nothing to do. However, no one has invented a substitute for good poultry management.

Increased efficiencies gained through mechanization must return greater profits by allowing more time for management. Mechanization has lessened the chores in caring for chickens, but someone still has to manage the flock. If you aren't paying enough attention to flock management, you may soon meet economic disaster in the poultry business.

Good management requires a constant check on feed and water consumption, egg production, mortality, ventilation, and any other factors that help keep the birds comfortable. Hot weather causes certain problems that require management changes. These types of changes can't be made automatically because man can't control the weather. You must plan for high summer temperatures. A few hot days in the early summer could seriously affect flock performance if you fail to make the necessary adjustments.

The Bird's Cooling System

The normal body temperature of a chicken is between 106-107° F. The body is covered with feathers which are good insulation material. Even though the bird can loosen its feathers, very little heat is lost through the skin. The chicken does not sweat, so its body must be cooled internally rather than externally.

The cooling mechanism of the chicken is made up of nine air sacs scattered throughout the body and surrounding many of its vital organs. These air sacs act as evaporative coolers and do a good job of keeping the chicken comfortable if you make it possible for these to function.

For the mechanism to work most effectively, the bird must breathe in cool, dry air. As the

inhaled air warms up in the air sacs it will pick up moisture from the lining. Since it takes heat to evaporate water, heat is taken from the tissues and is eliminated from the body with the moisture in the exhaled air. This exhaled air must be removed from the bird's environment so fresh, dry, cool air can again enter the lungs and air sacs in a continuous process. A good ventilation system in the laying house is necessary for air movement so the bird's cooling mechanism can operate properly to reduce hot weather stress.

At house temperatures from 55° to 70° F., there seems to be no stress on the laying hen. As the temperature in the house goes above 85° F. the effectiveness of the cooling mechanism is greatly reduced because the difference in air temperature entering the air sacs and body temperature is narrowed. The air entering at this high temperature won't pick up as much heat and moisture from the air sacs on each breath of air. As a result the bird begins to pant in an attempt to move air through the air sacs at a faster rate. The cooling effect is based on the temperature differential, humidity in the air, and the volume of air moving through the air sacs.

If the bird is unable to remove the heat fast enough, its body temperature will rise. Increases in body temperature bring severe stress. If the body temperature rises 1-1/2° to 3° F. the stress becomes very severe. The vital functions of the bird are curtailed and there is a struggle for survival. Death will result if the condition is not relieved within a short time.

Proper Air Movement Important

In Minnesota during cool nights ventilation should be increased to cool the birds and stimulate feed consumption. Reduce the amount of air brought in during the hottest part of the day, but maintain air movement within the building.

In the laying house proper ventilation plays a very important role in reducing stress. Its summer role differs from winter. In winter you try to bring warm air into the house, usually from the loft. In summer the air in the loft or attic may be 10° to 15° F. hotter than the outside air. Then the air should be brought in from the shady side of the building and in as low an opening as possible.

Chickens can tolerate a wide range of temperature. Work done at Pennsylvania showed that birds kept in an environment with temperature variations from 55° to 90° F. each day out-produced birds maintained at a constant temperature of 55° F. But most studies show the ideal temperature for egg production ranges from 55° to 70° F. It seems desirable for the temperature to fluctuate within this range rather than remain constant.

During extremely hot weather, birds in cages can be sprinkled with water to give some cooling effect. Spraying a mist of cold water into the air inside the house will help keep it cool. A sprinkler running on the roof of the house is another cooling method. If the humidity is high these methods are less effective. When the temperature in the house gets above 90° F. and there is a possibility it will continue to rise to 100° F., you must take action to save your birds.

Adequate Water Supply Essential

A good clean, cool water supply is important during warm weather. A chicken will need twice as much water at 90° F. as at 70° F. This may require more watering space. If you have the minimum space under cool conditions you are going to need more space if each bird has to spend twice as much time drinking water. It is very easy to see that the chicken at the end of the social order is going to find it very difficult or impossible to get enough water. A good manager will be sure that every bird has access to all the water it needs. In some cage houses a time clock controls the water. This time clock schedule may need to be adjusted to allow all the birds in the house to obtain enough water. In a cage house make sure there is enough water at the end of the line to satisfy needs of all the birds in the cage.

Adjust Feed Formulation

During warm weather feed consumption drops off. A good manager will watch feed consumption very carefully since he knows the chicken needs

certain daily nutrients for continuous egg production.

Since chickens eat to satisfy their energy requirements, and the need for energy during warm weather is greatly reduced, some adjustment must be made to maintain good production. Particularly important are adjustments in protein, vitamins, and minerals. It is impractical to order special feed for a given day or week so it becomes necessary to be sure the feed is adequately formulated with needed nutrients for these lower levels of consumption. You can't expect a hen to maintain good egg production when she isn't supplied with all the necessary nutrients.

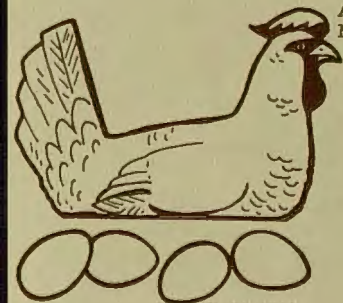
During hot weather all other stresses must be reduced. Declines in quality or drops in production often result from more than one stress factor. During hot weather particular attention must be paid to the reduction of any stress that may adversely affect production.

Never handle birds on a hot day. The extra excitement generates body heat that must be dissipated. Do not bring strangers into your laying house. Keep all dogs and cats out even though the chickens are used to them. They create a certain amount of excitement and nervousness at a time when the birds need to remain relaxed and quiet.

Hot weather's effect on egg quality isn't clearly understood. Shell quality as well as the interior quality is poorer. Summer egg gathering should be done three to four times a day to check quality decline as much as possible. You can't afford to lose egg customers in summer because of poor quality eggs.

Even though you have mechanized equipment, many management decisions must be made to keep that flock in top production. After egg quality goes down, or birds are out of production, it is too late. Good planning and attention to details can help reduce hot weather stress and maintain good production in your laying flock.

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