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MAXIMIZE YOUR POULTRY'S WEIGHT GAIN!

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Weight gain (weight of bird divided by days of age) is a way of determining how fast your birds are growing.

Fall is the ideal time for the growth of poultry. In fact, for most growers, the time required for commercial poultry flocks to reach market weight is decreased or the time required is the same and the mean body weight is increased.

Why? Have you ever considered the factors that maximize growth? Are they factors that a producer can control, or are they simply related to the season?

Let's look at some major environmental factors to see how they change with the season and how their changes affect performance.

If I were to list the critical production factors affected by seasonal changes they would be 1) ventilation, 2) temperature, and 3) environmental challenge.

Ventilation is the most critical element of production for maintaining weight gain. The elements of ventilation involve air direction, air speed, and air exchange. During the summertime, air is typically directed toward the birds in order to reduce the effects of high temperature. With no means of cooling other than with air velocity and fogging systems, summer ventilation is used strictly for temperature control.

On the other hand, during the wintertime, ventilation controls minimize air flow. This practice tends to allow air quality to become borderline for air freshness, with increased ammonia, and in some instances, dust. All these effects are deleterious for optimum performance.

The wintertime situation is usually accentuated by the producer's desires for economical production — that is, if air flow is reduced, less heat is required. However, a poorly ventilated house increases ammonia and dust, causes respiratory distress, increases the possibility of a disease challenge, and holds unwanted moisture inside.

Common complaints during the winter are wet litter and ceiling condensation in the houses. This practice is penny-wise and pound-foolish. We should be willing to use some gas and run fans when needed to provide adequate ventilation in our houses.

Houses that have curtain sides and no exhaust fans cannot be adequately ventilated during the winter months. It is almost impossible for producers that depend on natural ventilation to maintain temperature without reducing or restricting air exchange.

This strategy makes air quality poor and reduces growth, performance, and flock uniformity. This is especially true for flocks of tom turkeys or heavy broilers that have a tendency to develop respiratory problems. Many producers have recognized the inadequacies of natural ventilation systems during the winter and are trying some combination of curtains and air inlet vents to increase air exchange and moisture removal while maintaining temperature.

I'm not advocating constantly running fans during the winter without regard to temperature, but maintaining minimum ventilation to control ammonia and dust. Appropriate fan running time and running a sufficient number of fans to promote good air speed, direction, and volume are essential.

If you can obtain a static pressure of 0.08 or 0.10 inches of water column with one fan, that is terrific. If it takes two, then these fans need to be synchronized to run at the same time or be allowed to operate on one timer control.

During wintertime, static pressure is used to produce adequate air velocity to allow mixing in the house. Proper direction of air volume, at the velocity that would allow air to reach the middle of the house, mix with ambient air and pick up moisture from the litter, and then remove ammonia and dust from the house is what is desired to promote growth by optimizing the birds' environment.

The next critical factor for optimizing weight gain is temperature. As you noticed, maintaining proper temperature is inextricably associated with ventilation.

Brooding temperature for poultry is usually set at 88 to 90 degrees F for the first day. This may however, be adjusted due to the size and quality of the chick. Baby chicks and poults lack the ability to maintain their own body temperature for the first 10 days. This means that the temperature during this critical age must be maintained carefully to avoid large fluctuations (2-3 degrees F). Temperature should be gradually reduced and correlated with increases in ventilation rate to allow for adequate air flow, removal of carbon dioxide and moisture, and early stimulation of appetite.

Maintenance of too high brooding temperatures and too low ventilation rates (increased carbon dioxide) causes dopey and lethargic birds that don't start or gain as fast. Room temperatures should gradually be reduced to reach between 68 to 70 degrees F by the fifth week of age.

Fall is clearly an ideal time to drop temperature to comfort levels and maintain them by minimal use of heater and adequate ventilation rates. Although temperatures of 68 to 70 degrees F have been shown to maximize growth for turkey hens and broilers, temperatures as low as 55 degrees F have been shown to be commercially efficient for turkey males more than 14 weeks of age.

The lower temperature stimulates feed consumption and increased air flow associated with the lower temperatures lowers mortality. With the combination of proper temperature and adequate ventilation, litter moisture should be maintained at between 25 and

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