Why the Rapid Growth Rate in Today’s Chickens

Two questions people often wonder about poultry are: “Why are chickens grown to such an enormous size in an industry setting?” and “Does the industry use hormones to help the chickens reach this large body size?” These are very good questions. It is true that chickens currently grown in the industry are drastically bigger than those grown years ago. This difference is illustrated in Figure 1.

However, hormones are not the reason for this size difference. Rather, the research and knowledge the industry has gained over the past years has allowed producers to grow larger chickens. In fact, hormone supplementation is illegal and not approved for poultry in the United States. In addition, the cost of such supplementation would far outweigh the value of the chicken, even if it were legal.

The chicken that is bought out of the grocery store comes from birds called broilers. Broilers are strains of birds used in the poultry industry, and their only purpose is to produce a large amount of meat in a short amount of time. If the industry is able to grow a big bird in a short amount of time, it will cost less to produce, which in turn creates an inexpensive and delicious product for the consumer.

So again, if these chickens are not fed hormones, how do they reach such large sizes in such a short amount of time? The main reason broilers are getting bigger and growing faster is genetic selection.

A good analogy is dog breeds. Dogs can be as small as only a few pounds, like chihuahuas, or as big as 100 pounds, like Great Danes. Furthermore, some Great Danes are much larger than other Great Danes. The larger Great Danes are selected and rebred so that the best of the breed can be achieved. This is known as genetic selection and is the same process used to create large chickens.

Another factor is the large number of chicks that be produced in a short amount of time. For example, a regular chicken farm in the United States has four to eight chicken houses with 25,000 to 36,000 chicks in each house. Every year, the United States produces about 8.6 billion broilers. This fast turnaround time gives the industry a very large pool of chickens to selectively breed. This is why genetic selection in chickens is much faster than with other types of livestock.

Figure 1 illustrates genetic selection in chickens. The two carcasses are the result of feeding and raising two different types of chickens under the same condi-
Breeding scientists continue to select chickens with better growth rates, more efficient feed conversions, and stronger immunity to disease. This quick genetic selection for the best possible broiler bird has resulted in a large bird that can grow very quickly and be very cost efficient.

Another reason poultry breeders are able to grow bigger chickens is that poultry nutrition has improved tremendously in the last several decades. Through nutritional research, we have discovered what ingredients broilers need in their feed in order to maximize their growth rate. A typical broiler feed includes regular grains, such as corn (a major energy source), soybean meal (a protein source), vitamins and minerals (for better immunity), and enzymes.

Contrary to popular belief, enzymes are not hormones. Enzymes are used to help chickens digest phosphorous and protein. Enzymes also reduce environmental pollution by breaking down the phosphorous and nitrogen in broiler waste. Chickens are fed formulated diets with balanced nutrients. More is known about broiler nutrition than the nutrition of any other animal. Several of the vitamins we know now were first discovered with the chicken as a model.

Discrimination based upon race, color, religion, sex, national origin, age, disability, or veteran’s status is a violation of federal and state law and MSU policy and will not be tolerated. Discrimination based upon sexual orientation or group affiliation is a violation of MSU policy and will not be tolerated.

Information Sheet 1950
Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. GARY B. JACKSON, Director

(POD-10-12)