Small flock enterprises continue to increase in popularity in the United States. Consumer interest in heritage poultry breeds for meat is resulting in increased production. Research to help farmers price their product appropriately will help them in the creation of business plans for their enterprises. Increasing the market share of these poultry entrepreneurs will aid them with both profitability and heritage breed preservation.

Poultry Production Parameters: The Heritage Delaware

Who cares and why?

The raising of small flocks in the United States has increased significantly in popularity. Small flock owners keep chickens not only for egg production but also for meat. Along with this increase in popularity, small enterprises have emerged that raise heritage breeds for meat production.

There has been some research done on fast vs. slow growing commercial hybrids, but very little research is available to assist growers in deciding upon which heritage breeds to raise. The lack of information about performance characteristics means that farmers have very little information to use in order to make pricing decisions or when creating a business plan. Heritage meat chickens are very slow-growing. Farmers do not know how long it takes to grow a flock to a final body weight that is similar to that of a broiler. Therein lies a risk that farmers may underprice their product by basing prices on production data for commercial hybrids.

Starting in the 1920's and 1930's, the newly emerging meat chicken industry started by breeding pure lines of several different breeds of chicken.

By 1935, there were efforts at crossing Barred Plymouth Rocks males with New Hampshire hens resulting in what was called Barred Cross chicks. The Delaware chicken breed was developed in the 1940's on the Delmarva Peninsula as a result of the specific breeding efforts of George Ellis in Ocean View, DE. Shortly thereafter the breed fell out of favor as a meat bird as the Cornish cross was further developed by the broiler industry.

The breed is once again in demand, but is difficult to locate as good breeding stock for meat production because the breed has been selected only for show. Little data about the growth performance of the breed is available after 1940's and 1950's as there was greater interest in the breed for its unique plumage genetics. Given the significant changes and improvements to poultry diets, growth performance data is out of date in relation to the Delaware birds that are available for purchase today.

What has the project done so far?

The objective of this study was two-fold. The first objective was provide farmers with data on performance characteristics, feed efficiency, and carcass yield for Delawares in comparison to fast-growing broilers using modern feeds. The second objective was to determine the additional amount of time it would take to raise the Delawares until they achieved the same live body weight as 6 week-old fast-growing broilers. The production information may be used to write their business plans, make good management decisions, and to price product accurately.

Our study was able to determine that, given the modern feed available at today's feed stores, it will take a Delaware 15 weeks to grow to the same live weight as that of a 6 week old broiler chicken which is 2.5 times longer. The overall FCR for broilers

and Delawares in this study was 1.75 and 3.46, respectively. That means it took broilers 1.75 lb. of feed to create a pound of meat while it took Delawares 3.46 lb. of feed to make a lb. of meat. For a pen of 30 broilers to reach market weight it took an average of 230 lb. of feed, whereas it took Delawares 460 lb. of feed.

Based upon the amount of feed consumed by the two breeds, and the price per bag of feed at the time of the trial, the cost to feed the broilers was $87.58 and the price to feed the Delawares was $170.13. It is estimated that it would cost 1.94 times more to feed the Delawares. Since the cost of production for the Delawares, based on just the price of feed, was nearly 2-fold greater, farmers should price their final product accordingly.

There was a statistically significant difference between the two breeds of chicken with regard to their carcass weight and dressing percentage. The average weight for the broiler carcasses was 3.26 lb. whereas the average weight for the Delaware carcasses was 3.00 lb. The dressing percentage for the broilers was 68.08%. The Delaware dressing percentage was lower at 64.61%.

Impact Statement

Research on Heritage chickens, such as the Delaware breed, have yielded information about the ability of the breed to gain weight efficiently and use feed efficiently using modern feeds.

This research has indicated that in comparison to raising broiler chickens in small flocks, farmers will need to charge twice as much when pricing their heritage breed product.

Growth rates and carcass yields for the Delaware breed are significantly lower. Farmers will need to feed Delaware chickens twice as much feed to reach market weight.

What research is needed?

Additional research is needed to determine which breed performs best in the living conditions, both indoor and outdoor, in the Mid-Atlantic Region. Since many of the small flock producers in the region also raise their birds on pasture or in organic systems, more information is needed about the performance of these breeds on different types of pasture.

Want to know more?

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Strategic Priority: Animal health/Products/Production
Additional links: http://www.umes.edu/ard/Default.aspx?id=46285
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