

Materials for the 2004 NC FFA Poultry Judging Contest Written Test

Broiler breeders are the parents or hatching egg producers from which commercial broiler chicks are produced. Genetically, most male line broiler parent stocks are pure lines. The female lines are usually a two-way cross. Therefore, both parent lines tend to be quite homozygous but for different traits making their offspring heterozygous, expressing so-called hybrid vigor for market production. These crosses are often called terminal crosses because they are now heterozygous and would not breed true, in broiler production they are really terminal crosses because they are all slaughtered. This system gives broilers that perform well for the grower and the integrator but have a certain amount of built-in obsolescence since the parent stock must be replaced with similar parent stock from the breeder.

Broiler breeders are grown after they are hatched on a program of both feed and light restriction. This program is used to prevent these young breeders from becoming overweight and less desirable as future breeders. Light restriction starts as early as six weeks of age and the breeders are usually exposed to 8 hours of light and 16 hours of darkness through 18 weeks of age.

This is the reason behind the breeder houses being windowless and using dark-out techniques such as black curtains and light traps over the fan outlets to control and prevent the influence of outside light. The lighting inside the houses may come from incandescent, fluorescent or sodium vapor lights controlled by a time clock.

When these young breeders are approximately 18 weeks old they are moved to the laying house where they are light stimulated to 14 hours of light and 10 hours of darkness. Breeder houses utilize partial slat floors. These slats cover the outside one-third of the house on both

sides of the house and the center is a typical dirt floor covered with shavings. The slats are elevated two feet above the floor and the feeding and watering systems are over the slats. Since the birds spend a lot of time on the slats the nests are easily accessible from the slats. This system is used to produce hatching eggs that are as clean as possible since we do not wash chicken hatching eggs.

Broiler breeders are kept by the integrator on contract farms that pay the producer on a per dozen basis. Currently producers are paid from 30 to 36 cents per dozen of eggs produced with the variation being from strain of chicken being used or the company involved in the contract.

The productive life of a broiler breeder is normally 36-44 weeks after they are moved to the layer house. A good breeder hen should produce about 180 total eggs during her production period. Normally, about 160 of these are hatching egg quality and can be incubated. Hatchability of settable eggs is between 80-85%, so 128-135 chicks are projected per hen. Normally, hatching eggs have a value to the integrator of \$1.50 to \$1.75 per dozen eggs. Broiler breeders are mated at a ratio of 1 male (rooster) to 10 females (hens) and housed at a density of 2.0 square feet per hen. They are limited fed during the entire production cycle to keep them reproductively fit.

Broilers are young tender-meated chickens of either sex and are generally slaughtered at less than 8 weeks of age. These broilers are hatched from the eggs produced by the broiler breeders and have a value at hatching of about 20 cents each.

Broilers are reared in contract houses that are built to a width of 40 feet and a length of 500 feet, these houses have dirt floors covered with shavings and may house as many as 26,666 chicks at a density of .75 square feet per bird. In recently built houses they use what is called

tunnel ventilation. This system draws air into one end of the house through a pad that has water circulating through it that helps cool the air. This cooled air is then exhausted out the other end of the house creating a negative pressure, which pulls additional air into the house while pulling built-up heat out of the house. These houses are either solid sided or operated with the curtains up.

All equipment, including the heaters, feeders, and watering systems are suspended on cables to allow them to be raised as the birds grow and to winch them up to the ceiling for load-out of the birds and clean-out of the houses.

These new houses use dimmers on the lights and well as time clocks to control the activity of the birds and improve the feed conversion of ratio.

Modern day broilers are slaughtered at ages from 35 to 60 days of age with weights ranging from 3.5 to 8 pounds live weight, depending on their end use. The lighter weight broilers go into fast-food or frozen dinners that use cut-up broilers that are sold by the piece. Larger broilers are used in increasing numbers to provide boneless breast for fast-food sandwiches, restaurants, and grocery stores.

All broilers are produced under contract, these contracts vary slightly from company to company. They essentially pay the contract grower between 4 and 5 cents per pound for the broilers they grow, so broilers generate an income of \$200 to \$300 per thousand broilers produced. The gross income from a broiler house per year is on average about \$25,000.

Broiler consumption has grown rapidly over the last fifty years and now (2003) has exceeded 80 pounds per person, becoming the leading meat consumed. Beef consumption is around 66 pounds, pork 64 pounds, and turkey about 18 pounds. Broilers provide consumers

with high quality, low-fat, reasonably priced products available in a variety of forms from whole carcasses to ready-to-eat fully cooked items.

Nationally, the United States now produces over 8 billion broilers about 28 broilers for every person in the U. S. Currently, we consume about 25 of these broilers and export the equivalent of about 3 broilers, primarily as leg quarters.

Broiler production is concentrated in the southeastern portion of the U.S. Both Arkansas and Georgia produce about a billion broilers each with Alabama a close third. North Carolina produced about 775 million broilers in 2003, which makes us fifth or sixth in broiler production.

The broiler industry is concentrated in fewer and fewer companies each year. Currently, Tyson Foods has about 30% of the broilers, Pilgrim's Pride 20%, Gold Kist 15%, and Perdue 12%, so these four companies produce roughly 75% of all broilers.

The 2004 FFA Poultry written test will come from this overview of broilers and broiler breeders.

GOOD LUCK!!!

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