**Raising the Modern Turkey**

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Modern turkeys are the product of decades of genetic improvement. The focus of selection programs has been on increasing average daily gains, breast meat yield, and improving feed efficiency. Fitness and welfare traits need to be balanced with the commercial traits to ensure strong and healthy turkeys. The science of genetics will continue to accelerate future changes. This means that "optimal" conditions represent a moving target. What use to be good enough is no longer good enough! Observant, flexible and innovative approaches by the grower are required to fully benefit from evolving genetic potential.

The average weight of a commercial tom from 1966 genetics was 17.3 lbs at 140 days. The average weight of a commercial tom in 2003 was 34.3 lbs at 140 days. (Havenstein et al., 2007) The average weight of a commercial tom in 2019 was 45 lbs at 140 days. As the turkeys have gotten larger, the frame has also increased in size. With larger birds there is more white meat on the carcass and the organs have also increased in size. However, the increase between body size and organs has not been linear, so the ratios between supply organs and demand organs has not stayed consistent. Supply organs supply vital nutrients and manage metabolic processes (these include heart, lungs, GI tract, liver, and kidneys). Demand organs require nutrients, oxygen and other resources for growth and maintenance (these include brain and nervous system, muscle, immune system, and reproductive system). The modern turkey is a very different animal from the bird raised in 1966, and even in 2003.

Selection for genetic improvement has evolved with time, and is very dependent on technology. The use of technology has led to improved accuracy of data collection, allowed selection for new traits, and has reinvented the way health and robustness traits are measured. These high performing animals require a higher level of management to help avoid possible problems associated with higher growth rates.

Managing the Modern Turkeys

Some rules have stayed the same. Turkeys need feed, air, and water. The farms need to be visited, biosecurity needs to be followed, and performance needs to be monitored. Just as technology has helped the selection process at the primary breeder level, technology can help at the commercial level as well. Technology can be an asset to help drive informed decision making and assure compliance. An example is the use of an infrared camera to identify hot and cold spots in a brooder barn. Another example is the controller that can be used to measure feed, water consumption and temperature. Technology is changing all the time, and the next new tool might come from an unexpected place; don't be afraid of change.

Pre-placement checks need to be made to assure the facility is ready for poults. That includes the actual facility, shavings, rings, water, feed, stoves/heat source, ventilation and temperature, and lighting. The first two weeks of a bird's life are the most critical. Invest the time for pre-placement checks to have the facility ready before the poults arrive to reduce stress. Pay attention to details, as good processing results start in the brooder house.

Feed is the most expensive part of raising turkeys, and remains a vital input through the life of the flock. Every age requires adequate feed space, and proper location of feeders to help intake. Poults require supplemental feeders to encourage intake, but remove when the poults are big enough (protect the investment)! Feed form is important to crumble and pelleted diets and feed texture is important to mash diets. Feed should be fresh and clean, and formulated to meet the needs of the growing bird.

While not as expensive as feed, water is the most important nutrient through the life of the flock. Water should be sanitized, and confirmed sanitized. It should be fresh and clean, and provided in drinkers that are clean. There should be sufficient drinking space, and the drinkers or water lines should be placed appropriately to allow sufficient access. Drinkers or water lines should be properly adjusted for the size of the bird, and this will contribute to cleanliness.

Biosecurity protects the turkeys' health and your investment. Every farm should have a biosecurity plan that is appropriate to the level of risk. Having a written and tailored biosecurity plan will protect the assets in case of a major health challenge, such as avian influenza. Educate all employees, vendors, feed truck drivers, fuel truck drivers, and anyone who has access to the farm of the rules and back up with annual training. Control and limit who and what comes onto the farm and in contact with the birds, and keep records with a visitor's log. Properly clean and disinfect buildings during downtimes, vehicles whenever they enter the farm, equipment whenever it is brought onto the farm. Inspect in and around the farm frequently.

Bird health is the core of biosecurity and welfare programs which drives good performance. Proper vaccination procedures should be in place for every facility. As a part of this procedure it will advise what products to use, proper dose and administration, and appropriate age of birds which the vaccine should be administered. Cocci control should be in place, and should be confirmed effective with routine postings. Blood tests should be used routinely throughout the life of the flock to ensure vaccines are working, as well as to monitor other potential diseases that are not part of the vaccination program.

The modern turkey is high performing, and requires an investment of time and effort to ensure good performance. Make farm visits count - protect your investment, measure and monitor inputs, and address the changing needs of the flock. Routine monitoring should include reviewing growth rates, livability, temperature and humidity of facilities, ventilation, appearance (sound and activity) of the flock, and daily consumption of feed and water. Routine monitoring can identify a problem early and allow prompt resolution. Intense management is more critical now than ever before for these high performing turkeys.