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Feathered Facts

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Dear Extension Friends,

Thank you for your continued interest in poultry and the information provided by UF/IFAS Extension. This issue of *Feathered Facts* focuses on breed selection for the small operator and a myth about poultry. Many poultry breeds are well suited to the environment in Florida, and the main concern of most small operators is production capability. Good management is always important no matter which breed you select. As always, if you have additional questions, please contact me via the information on page 4 of this newsletter.

Sincerely,



Michael
Michael A. Davis, Ph.D.
Director / Agriculture Agent
UF/IFAS Extension Baker County



Breed Selection for the Small Operator

There are many reasons for raising poultry, but most people want eggs, meat, or a combination of these from their flock. Once you have made the decision to have a small flock, the next question should be “What do I want from my birds?”. The answer to this question will help you determine what type of birds you will need. There are many different breeds of chicken, but they are not all created equally when it comes to egg and/or meat production.

When deciding on a breed, you may come across the terms “hybrid” and “heritage”. Hybrid breeds are

crosses that will typically exhibit the best traits of both parent breeds. Hybrid breeds will usually have a higher production potential and greater flock uniformity. Heritage breeds are older breeds. Heritage breeds will usually have a lower production potential and lower feed conversion than hybrids, although this is not always the case.

Additional information on heritage breeds can be found by visiting The Livestock Conservancy at <http://www.livestockconservancy.org>.

Information about other breeds can be found on [Henderson's Handy Dandy Chicken Chart](#).

Common Poultry Breeds

Breed	Plumage Color	Egg Shell Color	Rate of Lay	Additional Information
Barred Plymouth Rock	Black & White Barring	Brown	Excellent	One of the oldest breeds. Excellent dual-purpose bird.
Black Sex-Link	Black with Gold Hackle & Breast	Brown	Excellent	Cross of Rhode Island Red and Barred Plymouth Rock.
Brown Sex-Link	Dark Red with Black Tail & Wings	Brown	Excellent	Cross of Rhode Island Red and White Plymouth Rock.
Gold Sex-Link	Light Red with White Tail & Wings	Brown	Excellent	Cross of Rhode Island Red and Rhode Island White.
Red Sex-Link	Dark Red with Black Tail & Wings	Brown	Excellent	Cross of Rhode Island Red and Delaware
Rhode Island Red	Very Dark Red	Brown	Excellent	Very old breed and popular dual-purpose breed.
Black Australorp	Black with a Greenish Sheen	Brown	Excellent	Excellent small flock producer, very hardy.
Amerucana & Araucana	Multicolored	Green/Blue	Excellent	Nicknamed "The Easter Egg Chicken".
White Leghorn	White	White	Excellent	High production egg layer, not good for dual-purpose.
New Hampshire Red	Chestnut Red	Brown	Very Good	Popular dual-purpose breed, fast grower.
Silver Laced Wyandotte	Silvery-White, edged with Black	Brown	Very Good	Old breed, popular in cooler climates.
White Plymouth Rock	White	Brown	Very Good	Medium-sized, dual-purpose breed.
Golden Laced Wyandotte	Golden, edged with Green/Black	Brown	Good	Old breed, popular in cooler climates.
Buff Orpington	Rich, Golden Buff	Brown	Good	Large breed, quiet disposition, popular backyard breed.

Growth Hormones in Chickens: Myth or Reality?

Merriam-Webster defines a hormone as a natural substance that is produced in the body that influences the way the body grows or develops; also a synthetic substance that acts like a hormone. The general public's awareness of hormones (including the levels of hormones in our environment and the food that we eat) is continuously increasing. I receive numerous questions about poultry concerning growth, management, nutrition, and other areas regularly, but the one query that always comes up is: "Why do poultry companies and feed companies put hormones in poultry feed? Is that why they grow so fast?". This question indicates that a misunderstanding has occurred because it leads with the word "Why". The truth is that no hormones have been allowed in poultry production (it is illegal) since the 1950s.

Most hormones that the public tends to be concerned about are growth hormones and hormones that are associated with sexual development including testosterone, progesterone, and estrogen. Estrogen typically garners the majority of the attention since this hormone is widely available in hormone supplements and birth control pills and because it plays a role in sexual development. Hormones exist in two different forms, as a steroid hormone or as a protein hormone. This form has a direct effect on the way that the hormone can be administered. Steroid hormones can be taken orally and still retain their effectiveness. An example of this is the estrogen in birth control pills. Hormones that exist in the protein form cannot be administered in this way as they would be broken down and metabolized in the gastrointestinal (GI) tract of the animal. Because of this, these types of hormones actually lose their efficiency to affect the body as a hormone. Most growth hormones are actually in the protein form, so they cannot be administered orally. To be effective, protein hormones must be in a steady supply during the course of the day, so this means that there must be multiple injections of the hormone per day or there must be an implant that steadily releases the hormone over time.

All of the information above still does not answer the second part of the original question: "Why do poultry grow so fast?". There are three main reasons why we see the rapid growth rate in commercial poultry today: 1) selective breeding, 2) nutritional research, and 3) environmental conditions in poultry rearing. Primary breeders of poultry have taken advantage of the short turnaround time for poultry generation to selectively breed the biggest and best females with the biggest and best males to get the meat chickens (broilers) that we have today. The same type of selective breeding happens with bird breeds that are destined for table egg laying operations. Since chicken eggs hatch in 21 days and it only takes about 5 months for these chicks to become sexually mature, the selective breeding process can work much faster in chickens than in cattle or hogs. Research is also constantly being conducted into the nutritional requirements of poultry. This research helps the feed companies to devise a feed formulation that addresses the optimal levels of energy, protein, lipids, vitamins, and minerals that are needed for optimum performance in either meat or egg production. This is why there are so many choices of feed for different age poultry and different production type. Finally, commercial poultry producers constantly strive to have the optimum environment for their animals to allow the genetic potential and nutritional advancements to express themselves.

Finally, there are a couple more things to think about concerning hormones. For many years, many of the hormones that the public are concerned about (testosterone, estrogen, and progesterone) were erroneously believed to only come from foods of animal origin. This thought process meant that if you did not eat foods of animal origin, then you would not ingest these types of hormones. In fact, many plants produce compounds called phytoestrogens that can influence the body. It is also important to remember that the natural production of hormones in a human typically exceeds the amount of hormones that are ingested into the body. Animals that we use for meat production (and egg production) will naturally produce hormones and some of these will survive all of the processes to get the finished food product to your table. However, poultry are never given natural or artificial hormones for growth acceleration or any other activity. The fact remains that it is illegal in the United States. Hormones that do naturally occur in meat animals tend to be in higher levels in the fat than the lean. The table on page 4 shows the natural estrogen production of humans as related to birth control pills and to certain foods.

Estrogen Comparison Table

The table below lists the daily endogenous (natural) estrogen production of humans as related to birth control pills and to certain foods. The information in the table was adapted from *Chickens Do Not Receive Growth Hormones: So Why All the Confusion?* (T. Tabler, J. Wells and W. Zhai, Mississippi State University, 2013)

Estrogen Source	Amount (in nanograms)	Estrogen Source	Amount (in nanograms)
Pre-pubertal human female (daily)	54,000	3 oz. Soybean Oil	168,000
Pre-pubertal human male (daily)	41,500	3.5 oz. Soy Protein Concentrate	102,200
Adolescent human female (daily)	93,000	1 Cup Soy Milk	30,000
Pregnant human female (daily)	3,415,000	3 oz. Wheat Germ	3,400
Non-pregnant human female (daily)	480,000	3 oz. Eggs	2,625
Adult human male (daily)	136,000	3 oz. Cabbage	2,016
Low-dose birth control pill	20,000	3 oz. Ice Cream	520
Regular-dose birth control pill	30,000–35,000	3 oz. Peas	340
High-dose birth control pill	50,000	3 oz. Potatoes	225
		3 oz. Steak (implanted)	1.9
		3 oz. USA Chicken Fat	1.8



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