

## Are Your Birds Productive?

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Exhibition poultry has done much, since the split with the commercial industry, to conserve many breeds of chicken that otherwise would have been abandoned. Where would Minorcas, Wyandottes, Spanish, Faverolles, Houdans, and others be without an organized effort to preserve their good body structures? This effort to maintain quality structures, by exhibition against a well thought-out standard, has given owners something to do with the birds and it has given a place to compare and trade breeding stock.

But, and this will take a bit of hard consideration, has the exhibition industry preserved the productive traits of these breeds? When someone contacts you for New Hampshires, do your birds grow quickly (16 weeks or less to maturity)? Do they lay well (200+/- eggs per year)? Are they fecund (80-90% fertility, 90+% hatchability)? Are they pets or livestock?

If rare breeds of poultry are to be used productively again, and if the years of conserving them are to count for something, they must be productive when they are needed. All it takes is for a few people to be dissatisfied with your stock and the whole breed may suffer by being passed by, again. Now is the time to start looking over your flock and start selecting for productivity as well as for exhibition qualities.

All breeds have histories of use and have, historically, excelled at particular jobs under particular conditions. Dominiques were noted for being a dual-purpose breed (laying a little better than producing meat) that was a master at rustling-up a large portion of their own feed when allowed to range. Javas were once considered THE eating chicken, laying fairly well, and also rustling much of their own feed. (In fact, most of the older chicken breeds, pre 1835, are noted for maintaining a breed type, with distinct characteristics, and fending for themselves.) Jersey Giants were once very well gifted at producing meat and eggs, though with a little more management than the first two mentioned breeds. New Hampshires were developed from Rhode Island Reds, but were selected for faster feathering and faster growth. Their descendant, the Delaware, was the premiere broiler breed on the Delmarva Peninsula until the Cornish/Rock replaced them in the 1950s. Minorcas are known for laying the largest white eggs, and plenty of them, and for their ability to range open pastures. Buckeyes were known to produce surprisingly meaty bodies with extra large thighs and wings, and did so even in the coldest of climates. Chanteclers also were bred to tolerate cold well, laying a large number of eggs. Wyandottes, Plymouth Rocks, and Rhode Islands all dominated the pre-industrialized American chicken industry, with a reasonable amount of care. Let's not forget the Leghorns and Anconas, two breeds noted for the highest of egg-laying ability combined with vigor that was unsurpassed. And finally the Naked Neck, a breed of chicken that is as close as they come to being immune to most diseases.

There are other examples, but the point is to look at what you are breeding and ask yourself if you are preserving the productive traits associated with this breed. Sometimes

these characteristics cannot be seen by looking at the shape alone; the caretaker must observe them over time. If you are not preserving the main productive traits of the breed you may well be washing away a century (or more) of selection.

So what can you do? To start with you should research the breed you are interested in and find out as much about it as you can. How was it used? What was it noted for? Then go back to your stock and observe. Do all of your birds behave as noted for the breed? How well do they lay or how fast do they grow? What do you need to improve, and do any of your birds have it?

The next step is to improve your flock's productive traits. There are a number of productive indicators that you can use to improve your flock. Some you may be familiar with, others may be new to you. Please take the time consider all of them and how you can improve your flock by using them. It would be a mistake to think that your birds are already as productive as they can be – try to take them a step further.

What are these productive indicators? For the commercial industry, primary traits of productivity would include: rate of growth, feed conversion, rate of lay, consistency, and fecundity (both fertility and hatchability). For your purpose we should add: vigor, longevity, disease resistance, survivability/intelligence, breed character, and flavor of meat and/or eggs. All of these traits are important, but the level of importance will vary according to breed.

Rate of growth and feed conversion. How long does it take your young birds to grow to an age where you would be proud to serve them for dinner? As fried chicken? As a Sunday roast? How long does it take your pullets to mature to the point of laying their first egg? Some breeds are noted for the speed of their growth. Fast growing can mean a big difference in profits when raising market broilers or layers – product to market faster on less feed. Some things to watch would include: Appetite – the more they eat the faster they grow. Keeping accurate records is the only way to be sure of which birds grow best for you – select for breeders those that grow faster. Avoid mistaking fast growth for large finish size. In some breeds, like Jersey Giants, the birds that reach the largest size put frame on first, then meat; early, meaty birds will not grow to the large size the breed is noted for.

Other points to remember when selecting for rate of growth: Appetite equals fast growth. Birds with wide feathers grow at a faster rate than birds with narrow feathers. Birds with narrow feathers are apt to be slow to grow back-feathers during the first 6 weeks of life. Extremely slow or excessively fast maturing chicks tend to suffer higher mortality than chicks, which grow at a “normal” rate.

Rate of lay. Healthy and productive chickens can lay in the range of 150-200 eggs per year. E. Lea Marsh, of White Leghorn fame, believed that this was a goodly number of eggs for a bird you could expect to be productive for MANY years. The commercial Leghorn has been bred to lay over 300 eggs, but they do so for a very limited lifetime with no consideration for the stress this cause on their bodies. Mr. Marsh even suggested

that the commercial industry periodically purchase exhibition stock that layed around 200 eggs per year for improvement of the health of their layers.

Rate of lay can be a confusing term as it has had several meanings over the years, some imprecise. It seldom means what it sounds like – the number of eggs a hen will lay in a period of one year. Often it has meant the period from the pullet's first egg until she stops to moult (thus early hatched pullets who moult in the fall have been considered less productive). It sometimes is measured from an arbitrary date, such as the beginning of October until the end of September. In current industrial housing the amount of light, and dark, the chickens receive is regulated; under this system the number of days in a year changes.

You may not be in a position to try and measure the actual rate of lay of your chickens, but that doesn't prevent you from improving the laying ability of your flock. The good news is that the actual rate of lay for a hen has little precise significance in determining the rate of lay of her offspring. This is because many issues factor into the equation that determines how well a hen lays: age, month of hatch, housing conditions, broodiness, winter pause (slowing of the egg laying frequency during periods with less light), exposure to disease, infestations of parasites, even the weather can have an effect on rate of lay. In other words, a hen with the genetic potential for high production is not always able to demonstrate her actual ability.

So what can you do to select and improve your flock for better production? Try these ideas: Monroe Babcock (creator of the Babcock B2000 commercial layer), and others, recommended using hens for breeding that lay before 10 am. He noted that these birds tend to lay more eggs and were generally healthier and longer lived. Saving eggs for incubation that were layed before 10 am (even if you only save eggs on the weekend for setting) can improve your flock's egg production over time – just be sure to collect the rest of the eggs at dark, for eating! When you pair mate, keep track of your most productive hens. Sons from these hens should be favored and mated, when possible, to other hens that lay near the top for your flock. Compare only hens of the same age. First and second year egg production should guide selection for egg production. Hens with high records from these two years should be used as long as productive. Birds that are fast in molting tend to lay better - band fast moulting hens. Hens that drop all of their feathers at once tend to be out of production for less time. Keep track of this trait and encourage it in your flock. Birds that molt early are usually the poorest layers. Poor layers tend to stop laying in July and take a long time to molt. In most birds the feathers during molt are usually shed in the following order - head, neck, breast, body, wings and tail (in some individuals a few tail feathers may drop before the wing feathers). It takes 6 weeks for a wing feather to grow in either poor or good producers, but the good producer grows more feathers at a time thereby completing the molt faster. First year hens that lay 25 or more eggs during August and March (in the year following that in which they were hatched) tend to be better producers. A hen in heavy production will have good width between the pelvic bones and will have soft, velvety skin and a soft, pliable abdomen. Pullets that tend to come into production between 180 and 215 days of age tend to develop into excellent layers.

Some other interesting facts: Eggs from the best layers tend to hatch as well or better than those of poor layers. Evidence indicates that breeding from only yearling and older hens increases longevity and reduces mortality. Second year egg production is usually reduced from first year by 20%. Egg size and body size are correlated. Pullets that begin to lay early tend to lay smaller eggs. February is the month that maximum first year egg size is obtained regardless of when the birds were hatched. Overly large eggs result in chicks, which have faults such as extruded yolks and other incubator related weaknesses (which is why hatcheries prefer pullets to hens – smaller size of the first year eggs). This means that to have viable production in older hens overly large eggs are to be avoided. Malposition accounts for chicks that do not make it out of the eggshell – this is inheritable.

Consistency and Breed Character. In a statement from about 1953, A.L. Hagedorn, a poultry geneticist, said, “Selecting for type alone has reduced productivity in Game Bantams and selection for productivity in production Reds and Leghorns has reduced type quality.” The birds should look like a good representative of its breed, but some variability should be allowed. The point most important to stress here is that those traits long associated with the breed be preserved – like the flavor of Rhode Island Red meat.

Disease resistance is relatively simple to breed into your stock. The old-timers used to say to never use a bird in the breeding pen that had been medicated that year. As many have said before, cull sick birds and after a few generations you will no longer have any illness in your flock. If you have one male that doesn't get sick when the rest of the flock suffers a cold, mate from that one male. Simply use healthy birds as breeders and stop using otherwise excellent birds that have had health concerns. Jim Rines said many times, “Your flock will have only what you tolerate.”

Vigor goes hand in hand with disease resistance. Selecting for vigor requires choosing from amongst the dominant cockerels and pullets for replacement breeders, selecting males and females that have bright red combs, without dark tips, selecting birds with bright, strong eyes with well formed irises (many diseases, in particular leucosis, will prevent the iris from forming in a nice round shape). Birds that are very active, and those that have thick, well-rounded shanks tend to be more vigorous.

I hope some of these ideas will prove useful as you start planning your breeding goals and choosing your breeders. Remember, tomorrows breeding stock depends on what you do today!

Comments and suggestions always welcome. Don Schrider, Communication Director, American Livestock Breeds Conservancy, P.O. Box 477, Pittsboro, NC 27312, (919) 542-5704, [www.albc-usa.org](http://www.albc-usa.org).

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