

BY DR. JAMES C. KROLL

Nutrition, Age And Genetics: The Critical Trinity, Part 3

In parts 1 and 2 of this series we discussed two of the three critical tenets for producing better bucks. Nutrition was the first and most important of the three. Then came age.

Having produced dozens of record-book bucks in my career, I learned quickly that providing year-round high quality forage was *the* most important factor. Strategies for producing optimum forage and cover conditions should be the primary focus. Yet, no matter how good the quality of the food is, if your deer don't grow up they'll never realize their potential. That's why Part 2 presented steps landowners, managers and agencies can take to ensure more bucks reach maturity.

Now comes the last of our three management tenets: genetics. Where does consideration for genetics fall into the overall management mix, and are there strategies for genetic improvement that really work? Let's find out.



PHOTO BY MIKE BIGGS

You can do a lot to provide year-round nutrition and you can protect young bucks so that they reach maturity, but you can't do much to alter the genetics in your herd.

THE "NATURAL" DEER HERD

I define a natural deer herd as one with a balanced age and sex structure. That is the way nature (or God) intended it to be. Why? In such a herd, the forces of natural selection can operate to keep the species competitive and adaptable to environmental change. Whitetails evolved in a dynamic world, in which change was a normal part of existence. Because the species' reproductive rate can double numbers in less than a generation, the herd is able to respond rapidly to positive conditions.

If a doe has two fawns, in good years it's possible for both to survive to one year of age, the time when they are recruited into the herd. Generation time, or the time it takes the herd to turn over, is only about 3 1/2 years. If there are enough bucks available, this rapid turnover rate increases genetic diversity. And the more diverse the population, the more adaptable it is to change.

As noted in the previous article, critics of management strategies such as antler restrictions argue they're imposed solely for "trophy" management. Yet larger-antlered bucks are a byproduct of natural herd management, not the purpose of it! Herd growth is more easily controlled in natural herds, a key point as hunter numbers decline and human encroachment on habitats increases.

THE "SPIKE WARS"

Years ago, when the Texas Parks & Wildlife Department in my home state released its findings from a Kerr Wildlife Management Area study on antler genetics, there was a wave of excitement among laymen and professionals alike. This study reported that spiked-antlered yearlings would not only have lower antler quality at maturity than their forked cousins, but also that these bucks were "genetically inferior"! The recommendation was to shoot every spike yearling you see.

The consequences of this finding still reverberate across the nation, probably causing as much disagreement around campfires as shooting does! But at the time it seemed to be the "magic bullet" everyone was looking for. Why worry about nutrition and age when all you had to do was cull spike yearlings?

That was in the early 1980s, when I was developing our research program at Stephen F. Austin State University in Nacogdoches, Texas. When I set up the Institute for White-tailed Deer Management & Research at SFA, I had two goals: (1) to conduct only *relevant* research on whitetails that focused on the needs of individuals trying to manage and/or hunt deer on their land; and (2) to develop an extension program to get the results of our research to hunters/managers as quickly as prudent science would allow. This led me to become a part of ***North American Whitetail*** early in its history.

So when TPWD came out with its spike results, I incorporated this material into my management program and (unfortunately) into the many articles

and presentations I produced annually. A short time later, however, contradictory results from another study done at Mississippi State University made me question the wisdom of shooting spikes. Dr. Harry Jacobson, who was to become a valued colleague, reported no relationship between what a yearling sported on his head and what he turned out to be at maturity.

This new research made me put a halt to the practice of culling spikes, at least until further research cleared up the issue. Well, that was over 20 years ago, and things still aren't totally clear.

RESEARCH AGENDAS

Unfortunately, the quality of science today is influenced by personal agendas, as well as the potential for fame and fortune. Look at the concept of global warming as a good example. Another good example is chronic wasting disease (CWD). When CWD first came to public attention less than a decade ago, reports led many to believe that it would quickly lead to an end to whitetails and whitetail hunting. Now that the dust is clearing, however, it does not appear to be the Armageddon predicted.

In Colorado, the epicenter for the disease, deer and elk herds are thriving. But the disease (condition) did have one positive effect: It generated millions in research funds and support for state and federal agencies charged with overseeing response to CWD. Many careers were made on CWD, and a great deal of power was given to agenda-driven biologists. For example, supplemental feeding as a management practice is unpopular with many professional biologists, and CWD was the "hammer" to stop it in many states.

A POLITICAL FOOTBALL

By the time folks like me began to question the spike theory, a great deal of money and numerous careers had been generated on both sides of the aisle. In Texas, support of the Kerr study became a "litmus test" for loyalty. To question the results was tantamount to treason! Yet, it always has been my strong position to strive to be a true scientist, loyal to no position or philosophy.

We decided to conduct a long-term project in South Texas to test whether or not spike yearlings in the wild were inferior to forked yearlings. Over the last 12 years, research associate Ben Koerth and I captured as many as 700 bucks a year using a helicopter and net-gun. Had it not been for the generosity of a dozen landowners in five Texas counties, this extremely expensive project could not have been completed.

Most of a buck's antler and body growth is complete by age 4 1/2, and this is the time he fights his way into the breeding pool. This is the group of mature bucks that holds dominance for up to two years and accomplishes a lion's share of the breeding. (No matter what you may have heard or read, the breeding pool does indeed produce the most offspring.) What we discovered was this: By maturity, bucks that were spikes and 3-pointers as yearlings turned out to be every bit as good as yearlings with 4-plus points. The results rocked the Lone Star State. The emperor had no clothes!

DENOUNCING OUR STUDY

Unlike both the Kerr WMA and

Mississippi State studies, ours was done in the wild, using deer doing what your deer are doing: running from coyotes, dealing with drought, trying to make a living under variable conditions. It wasn't a genetics study; rather it was aimed at answering the basic question: Can we look at a yearling buck and predict what he will be at maturity?

The response from the pro-spike culling forces was quick and direct. A team was quickly put together to critically analyze our work. I never anticipated this response from a research project. The main criticism was that we allowed the ranchers to harvest bucks while the study was under way.

The implication? That hunters had skewed the results by culling some of the smaller-racked bucks, thus preventing some "inferior" deer from being recaptured and impacting our results. To see if this had affected the results, we re-analyzed our data. Statistical analyses revealed bucks that had been spikes or 3-pointers as yearlings were no less likely to have been "culled" as a 2 1/2- or 3 1/2-year-old than those with forks.

Our research and publication of results further revealed a major flaw in the Kerr study: Hopefully by accident, the bucks used in it had been hand-selected, *after* researchers saw how they had performed at age 3 1/2! Some bucks that were poor performers were added to the spike group; some forked bucks that didn't perform well were dropped from the forked group. In short, the study was seriously compromised. No study by any other group of scientists has ever duplicated the Kerr results.

WHAT IF WE WERE WRONG?

Let's say spike yearlings *are* inferior. Should we cull yearling bucks? Our data and that of other scientists clearly show almost half of buck fawns and yearlings leave their birthplaces as adults. During our study, it wasn't uncommon for young bucks to be recovered on other ranches. In fact, by our calculations not even a 10,000-acre ranch can keep all its young bucks under control. They simply leave.

Given this, if you decide to cull yearlings for whatever reason, where will the survivors go and what happens to the bucks your neighbors leave? They get *your* bucks and you get *theirs*!

There is yet another problem. We conducted computer simulations that took into account the natural year-to-year mortality of bucks, and culled them with various numbers of points as yearlings. And we found that if we culled *all* yearlings that did not have at least 6 points, we ended up with NO mature bucks! So, whether our research is valid or not, it really doesn't matter. Culling young bucks makes no sense, regardless of their antlers.

BACK TO BASICS

So, what can you do to improve buck quality in your hunting area? Start by increasing the quality of their food, using strategies discussed in Part 1 for both native and cultivated forages. Then, of course, let young bucks walk. As noted in Part 2, *every* B&C buck was once a yearling! This is why I wholeheartedly support antler restrictions. The practice has the dual benefits of producing natural age and sex structure, with the side benefit of producing bigger antlers. That's a win-win in my book!