Dr. Deer's™ PRESCRIPTION

Hunkering Down

By Dr. James C. Kroll

If you give it much thought, most management practices for whitetails (feeding, food plots, habitat manipulation, etc.) are based on a "best case scenario." In reality, managers who really know what they are doing manage for the reverse. The spring and summer of 2011 certainly taught a lot of whitetail managers and landowners this lesson. I was talking with my colleague and research associate, Ben Koerth, the other day and the discussion turned to this topic. It began with me pretty much whining about our rain deficit of over one foot, and the days of heat indexes in the 100-plus readings. Then it hit me; the bad year really was a blessing! "Nobody ever learned anything from winning," Ben offered. And, he was right. After thinking about it, 2011 taught us a great deal about managing for whitetails. The harsh conditions provided impetus for starting several new research projects, as well as reviewing results of old projects. So, I thought this column would be about some of the strategies we use to manage for the worst case scenario.

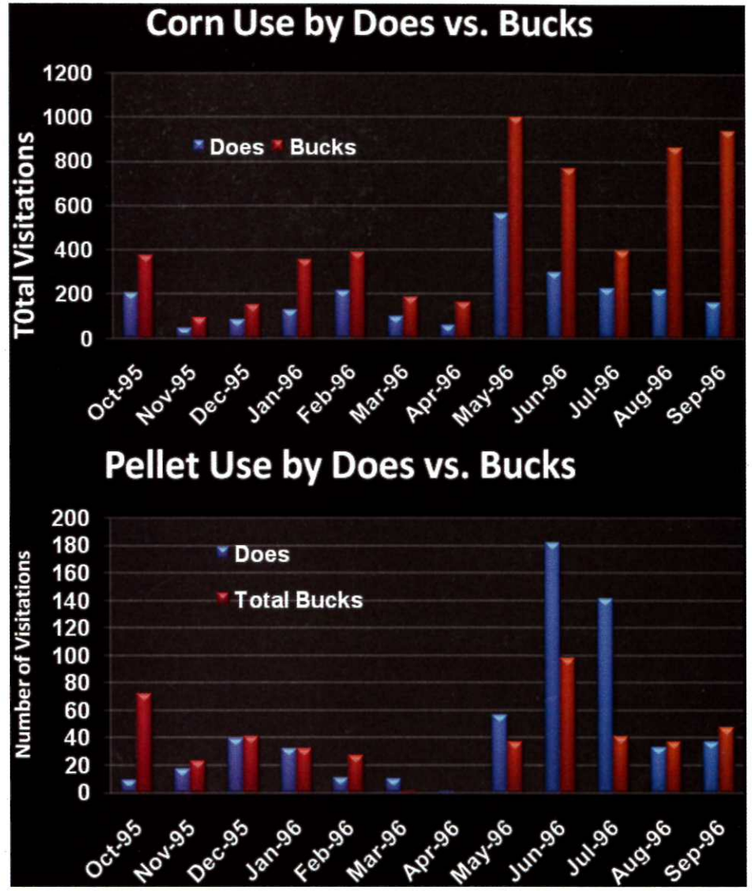
It's not about protein

Warning! I am about to discuss some issues that will make some old time deer managers "spin in their chairs!" Ask any these deer "experts" and they will tell you protein is the most important thing to consider when buying a feed or even analyzing the effectiveness of a particular food plot variety. Digestible protein certainly is important in antler growth, nursing and other physiological needs, but my experience has proven that protein may not be the most important consideration. Long ago, a scientist named Justus von Liebig came up with a scientific law, and you may not know there are very few "laws" in science. In order to be considered a law, a theory or explanation has to stand the test of decades, if not centuries of scientific scrutiny. Liebig's Law simply states, if we list all of the factors that affect a species, the one in least supply will be THE limiting factor. As it applies to deer management, scientists have studied a host of factors affecting health and population growth, and protein is *not* at the top of the list. Deer are marvelously suited to get by pretty well on fairly low protein levels. In fact, they have "learned" how to do this so well, excess protein (over 17-18 percent for mature deer) is eliminated, hitting the ground either as urine or feces. Further, in the winter deer even can do without protein by recycling urea in their body.

So, if protein is important, yet not the limiting factor, what is? In almost every study I have completed over the last four decades, or read about for that matter, digestible energy comes to the top every time. Ask yourself what is going on in the bodies of deer during spring and summer? Does are finishing up gestation of two fawns, then they are required to produce as much as 72 ounces of milk per day to feed these fawns. Bucks are rapidly growing their antlers, which grow at a rate second only to tumors. Cell division and growth takes a great deal of energy. This translates to a whopping energy bill both for bucks and does by midsummer. In fact, studies have shown energy demands by does in summer are double that for winter. Daily energy needs are around 50-80 kcal/kg. That translates to an energy demand often exceeding 5,000 kcal per day! Imagine what *you* would look like on such a diet. Highest energy demand for bucks is during June-August.

Under drought conditions, both native and cultivated forages simply are not growing. A non-growing plant is producing and storing very little in protein or digestible energy. In fact, some South Texas browse plants are drought deciduous, meaning they drop their leaves under drought conditions. When you couple this with disappearance of nutritious forbs (weeds), there is little in the way of protein or digestible energy during a drought. Since food plots also are not growing during this time, that leaves supplementation, but how much and what kind?

We completed a study a number of years ago in which we allowed wild deer to assemble their own diets. We erected clusters of feeders, one with protein, one with corn, another with salt and the last with commercial mineral. At present, we are repeating this study under drought conditions. The deer in the previous study had food plot forage and growing conditions were normal. To our surprise, corn use was highest in May to September for bucks and considerably less for does during the same period (see graph). Corn contains about 90 percent digestible matter, 14.2 MJME/kg DM, eight percent protein and only 2.4 percent fiber, making this a highly digestible food item. Now for years, biologists like me have "bad-mouthed" feeding corn; worrying about things like acidosis and low protein. Yet, our research has shown deer actively sought corn as a supplement and preferred it to "protein" pellets, when given a choice. Can we write this off to them not knowing what is good for them or what they need? I do not think so!

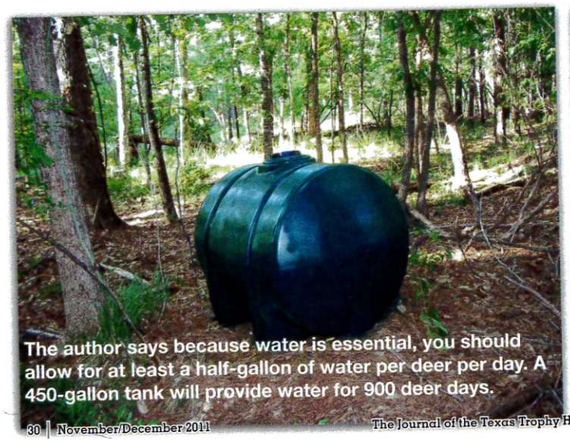


Results of the author's studies on corn and protein pellet use in deer indicate, when given a choice, deer sought corn as a supplement and preferred it to protein pellets from late spring to late summer. He says providing feeds free-choice to deer during summer may be sound extreme weather management.

So, am I proposing a total change in how we feed deer? I am proposing feeds with higher energy are preferred during gestation, nursing and antler growth (spring-summer). Perhaps providing feeds free-choice during summer, especially in drought times, so deer can choose what they need may be a sound extreme weather management program. In years past, this means you might be able to cut costs by offering corn, as well as pellets, yet the "green mania" in this country has driven corn prices to the point I am paying less for a balanced deer feed than for corn!

One of the problems I personally have observed over the last few years is over-feeding of high protein pellets. On several south Texas ranches, for example, I have been called on to determine the cause of mature buck deaths. On opening the rumen of these bucks, the entire cavity was filled with pellets. Feed normally is considered a supplement, yet under drought conditions, it becomes a total feed. Providing a very high protein feed in normal years allows managers to get away with a dangerous practice, in my opinion; one that catches up with them when deer consume too much! It makes more sense to me to provide deer with a 16-17 percent protein feed, and provide energy supplements.

It commonly is reported 12-15 deer per feeder is adequate. Well, that depends on the sex of the deer using the





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feeder. Bucks will dominate a feeder, excluding younger bucks and does. I generally recommend a free-choice feeder per 80 acres, or one feeder per 8-10 deer.

Are there other supplements useful in stress conditions? We often have added alfalfa hay to our supplemental feeding program. This feed also is quite expensive, and deer tend to waste portions of it. Years ago, we developed a product for a company called Haylage or Chaffhay, which was a silage feed of alfalfa, molasses and yeasts. The feed was eaten during dry times by deer and highly preferred, but quite expensive. Since pelleted rations are essentially cooked feeds, I think adding alfalfa hay to your complete program is a good idea. We try to make our feeding stations "one-stop shopping" for our deer. Everything they need can be found in one location, including my next topic, water.

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Water, THE essential factor

In an earlier article, I discussed the importance of water to deer. We construct water distribution systems so this critical element can be provided at the rate of one station per 80 acres minimum. Here at the Institute for White-tailed Management & Research, we installed simple water storage tanks, connected to water troughs with float valves during the 2011 drought, and saw immediate results. Since my earlier article, some commercial feeder companies have added portable water facilities to their product line; and, I heartily endorse this development. You should allow for at least a half-gallon of water per deer per day. So, a 450-gallon water tank will provide water for 900 deer-days. Cost for such a system is around $400. Water is essential in helping deer deal with drought. In addition, supplying water at the density above will reduce social stress caused by strange deer watering at an unfamiliar source.

Currently, we are working on new ways to bank forages for summer and drought use at an economical price. Hopefully, I will be able to report on progress in the future. As deer management matures and weather conditions remain unpredictable, being creative and planning for the worst case scenario will mean the difference between success or failure.

