Better Nutrition Means Better Deer!

Part 3

With spring not that far down the road, now's the time to be deciding what, if anything, you'll plant for your deer in '95. But before you do, check out this advice.

by Dr. James C. Kroll

In the first two installments of this series, I discussed the basic nutritional needs of deer and various strategies you can use to augment their fall and winter diets. As noted, the whitetail is a very "picky" eater, preferring only the most nutritious forages. Unfortunately, the average hunter still seems to think deer just eat "green stuff." To the contrary, they probably are the most selective feeders in the deer family.

Due to a variety of limiting factors in some habitats, as well as depletion of quality forage by overpopulation, many of our deer ranges do not provide adequate nutrition for optimum antler development and reproduction. The only way these problems can be solved is if hunters and landowners take an active role in improving natural forages.

Last month, you might recall, I discussed the use of cool-season food plots for supplementing deer diets. Deer have two basic stress periods: one in late winter and the second in late summer. In order to be successful, a management program most address *both* stress periods, especially in the South. This month, in the series' final installment, I will discuss ways you can improve the quality of foods available during the hot months.

SUMMER STRESS

Summer is a significant stress period throughout much of the whitetail's range. It also is the time at which there are more demands on their bodies than any other. Does are nursing fawns, while bucks are trying to grow a new set of antlers and stock up for the coming rut. Oddly enough, a mature buck's antlers have just about the same amount of protein and mineral demand as the system of a doe trying to support her developing fawns. So, for both sexes, summer is a time of intense need for protein and minerals.

But at the same time need is increasing, the quality of many native forages is decreasing. In much of the whitetail's range, deer depend primarily on browse for summer feeds. (Remember, browse is the leafy and stem portion of woody plants, trees and shrubs.) Most browse plants have a *determinate* growth strategy. That is, the plant grows during the early cool, wet spring and early summer, then tends to stop growth as the summer dry season develops. *Indeterminate* plants, on the other hand, tend to put on growth each time conditions allow, such as after a good summer rain. The latter group of plants generally provides the best nutrition for whitetails, but these plants are not in great abundance. Weeds (forbs), another preferred food of deer, only grow well after significant rainfall and tend to be rare in hot, dry times. When you couple the tendency of plants to become less palatable by late summer with reduced mineral availability, the whitetail is commonly faced with getting by on a suboptimum diet.

Winter feeding through food plots and supplemental energy feeds (corn, fruits, etc.), does ensure that deer enter the growing season with adequate energy. However, most fall food plots have long since matured by the onset of the summer stress period. Very few plantings will grow all year. To deal with this, you must add an additional planting. That's where summer plots come into the picture.

TYPES OF SUMMER PLANTINGS

Advertisements for various plantings for deer are everywhere you look these days. How is a person to decide which are best for his specific geographic area? Well, there are a number of publications and videos now available to aid in making these decisions. In addition, agricultural professionals, such as those from the Soil Conservation Service and state Agricultural Extension Service, provide technical guidance in developing plantings just right for your circumstances. Here are some general recommendations.

As noted last month, there is no single plant species or variety that will do best in all situations and climates. For this reason, you should rely on *combination* plantings whenever possible. This allows you a "safety net" when conditions are not right for one variety or when deer overbrowse a variety.

After conducting some 20 years of research on the subject, I feel *legumes remain the best forages for supplemental plantings*. I discussed cool-season clovers in the previous installment. Summer legumes seldom include clovers, with one notable exception, which I will discuss later. Instead, most quality summer legumes are in the actual pea subfamily, including cowpeas, soybeans, fall clovers, indigos and summer vetches.

Peas are wonderful forages for deer. Unfortunately, however, they have a tough time standing up to heavy deer browsing. Unless you plant fairly large plots of one or more acres or have a low deer density, there is no justification for

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planting peas. I recommend planting at least 2 percent of your area to peas, and the plots should be well-distributed, in order to avoid concentrating deer.

Soybeans are well-known for their attractiveness to deer, especially in agricultural areas such as the deep South and Midwest. In these areas, deer often are viewed as an agricultural pest species, with many states issuing deer-control permits to farmers. In South Carolina, for example, I feel the soybean agriculture is largely responsible for that state's booming deer herd. However, recent shifts from soybean to cotton farming will have a significant negative impact on deer in that state, as well as many others undergoing the same transition. Other varieties of peas and beans, such as velvet beans and mungbeans, have been used sparingly for deer plantings, especially in drier climates. Recently, an Australian plant called Lablab has shown promise in drier portions of Texas, but as far as I am concerned, more research needs to be done to determine its suitability as a cover crop.

The single clover exception is alyceclover, and it really is a false clover. This species is a tropical variety cultivated for many years in Florida as a cattle forage and green manuring crop for citrus. Our research has found it to be an excellent clover for deer. Alyceclover has an excellent growth pattern that makes it well suited for deer forage. It tends to thrive during the hotter, drier portions of the year, reaching full production in late September. It also holds up well to heavy deer browsing, developing a low-growing habit under heavy use.

My friend and colleague Richard Hancock of Florida pioneered the use of alyceclover in summer food plots, especially for no-till plantings (discussed later). He also has helped develop lesser-known varieties for deer and wildlife plots, including jointvetch and hairy indigo. These two legumes are at opposite ends of the spectrum in terms of site preferences. Jointvetch is an excellent forage for wet soils, while hairy indigo is good for dry soils. Of the two, however, I have found that jointvetch is more attractive to deer.

Alfalfa, a legume, is *the* premier deer food! Unfortunately, however, it will not grow everywhere. It prefers soils with a neutral to basic pH and is susceptible to diseases associated with other agricultural crops. A biennial (taking two years to mature), it is an excellent forage, best planted in the fall along with your cool-season plantings. If it will grow consistently in your area, it is the best choice for a legume planting for whitetails.

Although grains such as corn and milo often are planted for deer, their quality frequently is subpar for late-summer needs. Also, seeds such as milo often have chemicals that make them less palatable to deer and other wildlife. Corn is an excellent winter feed, but it really is inadequate for summer plantings.

Less well-known summer plants would include lespedezas, sweet clovers, millets and sunflowers. All are used by deer, but not consistently. These varieties are either expensive or have poor seed availability for broad use.

Grasses seldom are used by deer in summer. Too often hunters and landowners think improved grasses, such as Bermuda and Bahia, are good foods for deer, but this is not so. Deer do not have the proper microorganisms in their digestive tract to digest these plants efficiently and only resort to grasses under stress.

COMBINATION PLANTINGS

As noted in last month's discussion of cool-season plantings, combinations of varieties are the only way to go when developing summer food plots. In the South, using plantings of peas and/or soybeans combined with another legume, such as alyceclover, jointvetch or hairy indigo, is an excellent way to provide high-quality summer forage. In northern climates, cool-season legumes, such as red and white clovers, often persist into much of the summer. In these areas, it might not be necessary to develop a summer planting at all. But even in the North, I tend to recommend separate summer plots of peas or soybeans, mixed with one of the above varieties for "insurance."

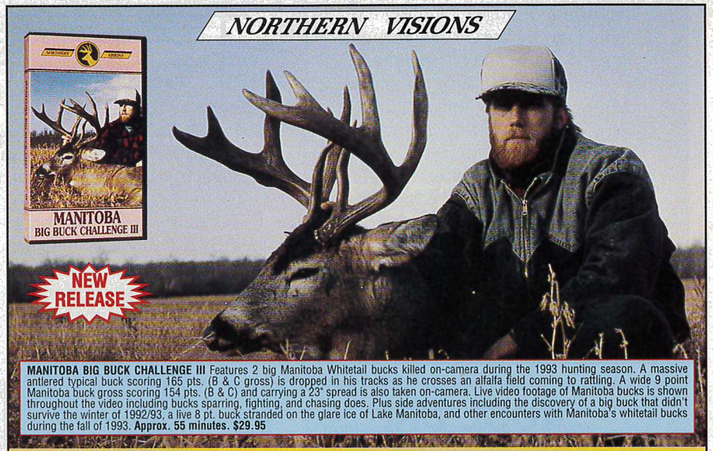
The greatest mistakes made by managers in developing summer plantings include: 1) not inoculating the seed and 2) using the wrong fertilizers. Legumes have a symbiotic

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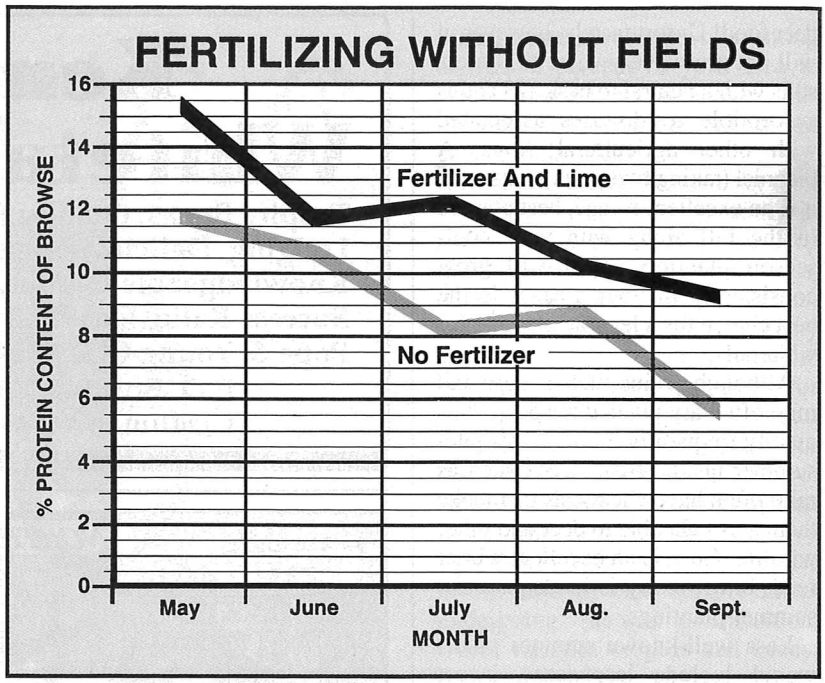
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relationship with tiny bacteria that attack their roots, forming nodules. Once protected within these nodules, the bacteria aid the plant in converting elemental nitrogen to protein. If you do not inoculate your legume seed, the plant is forced to go it alone and does not perform at a high rate of efficiency.

Summer is the time when there is the most competition from weeds in food plots. Addition of high-nitrogen fertilizers to summer plots does more harm than good. Because the legumes (properly inoculated) are fixing elemental nitrogen anyway, there is no need to supply these plants with nitrogen. Addition of ammonium nitrate or ammonium sulfate to food plots encourages weeds and discourages your legumes. So, the best approach is to take a soil sample, then follow the recommendations of your soils laboratory or extension agent.

Summer plots will be growing actively just about the time you wish to plant your cool-season crops (late summer or early fall), so it is a good idea not to have summer and cool-season plots in the same location. I like to have the two side by side so that there always is some forage available, 365 days out of the year. Some managers use a drill to stagger-plant cool- and warm-season plantings through each other.



A research project in East Texas showed that proper fertilization of native browse could boost protein content. (adapted from Bane 1992)

Many times, landowners and hunters do not have access to expensive equipment for making these plantings. That's why Richard Hancock pioneered the use of no-till methods. He and other seed producers recommend using varieties that can be sown on top of the ground and then covered with a mulch produced by mowing the native plants or previous crop. Most of the legumes are well-suited for no-till methods. But no-till requires that you plant at exactly the right time. If you are interested in these techniques, seek assistance.

NON-PLANTING METHODS

Suppose you are in a situation that does not lend itself to making plantings for deer. Does this mean there is nothing you can do? Not at all. At the Institute for White-tailed Deer Management and Research, recently completed research showed you could apply fertilizers to native plants and achieve excellent results. Application of a balanced fertilizer such as 13-13-13 (nitrogen-phosphorus-potash), followed by monthly applications of nitrates yielded a significant increase, both in plant nutritive quality and utilization by whitetails.

This technique allows you to produce "invisible" food plots, useful in areas with high hunter densities and pressures. By going to a small opening or right-of-way in the forest and applying fertilizer, you have, in

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Periodic mowing or burning of native vegetation also yields good results in the right situations. Young regrowth is highly nutritious. The American Indian used these methods to manage deer habitats hundreds of years before Columbus arrived here.

MINERALS

Because summer stress causes deer to experience a high demand for minerals such as calcium, phosphorus and sodium, it makes sense that providing these important nutrients will help your herd. If you are planting food plots for deer, the fertilizer and lime you are applying probably are all the deer will need. But if you are not planting, or if the area is particularly lacking in these nutrients, you might wish to supply minerals. Unfortunately, there is confusion about which ones to use.

Normally, deer do not need more than 20 percent sodium (salt) in a mineral. Above this amount does the deer little good and probably harms them as much as it would you or me. The most important minerals for whitetails are calcium and phosphorus, both important to nursing and antler growth.

A loose mineral, such as dairy cow mineral, with a 1:1 or 1:2 calcium: phosphorus ratio makes an excellent deer mineral. It should not be in block form, however, because deer really do not like to lick anything. Pouring loose mineral in a hole or providing it in a trough is the best approach. I suggest you leave the mineral out year 'round so that they will have it when they need it. Most use occurs in late spring and summer, in response to forages with a great deal of water content and hot weather. I recommend using a mineral station at each food plot, just as insurance.

FEEDS

The most expensive way to supplementally feed deer during the summer is using feeds and rations.



Bucks have a great need for protein in the spring and summer, when minerals are being converted into antler. Photo by Richard P. Smith.

Whereas food plots will cost about a penny per pound, feeds cost 20 to 30 cents per pound! But in areas where you cannot grow food plots due to climate problems, you are left with little choice. If this is your situation, you can provide one free-choice feeder, such as a covered trough, per square mile (minimum) during the period from spring green-up to fall. After this time, deer are not in need of protein supplements.

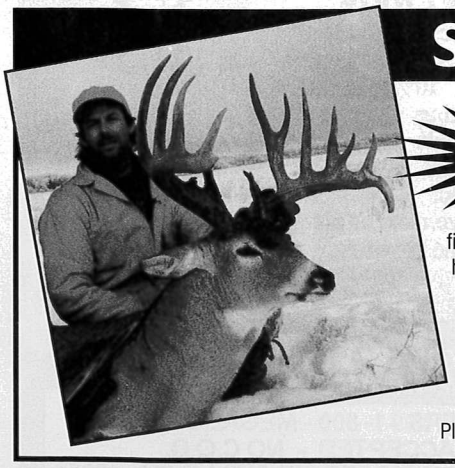
One of the most significant mistakes made by folks feeding deer supplements is overdoing it on the protein content of the feed. Deer do not need more than 16 percent to 17 percent protein in a supplemental feed. In fact, anything much above this amount creates some potentially serious physiological problems. Also, you should avoid any feed that uses urea as a nitrogen source.

CONCLUSION

I know this three-part series has thrown a great deal at you in a short amount of space. But I hope it has served to give you an introduction to the concept of supplementally feeding deer. As demand for quality whitetails increases, the future belongs to the hunter or landowner who is actively involved in the life of these wonderful animals. As a longtime whitetail manager, I will tell you there is no greater satisfaction than seeing a newborn fawn nursing its mother in a food plot or watching a big, mature buck munching contentedly on the clover you planted last fall.

FOR YOUR INFORMATION

Dr. Kroll's Institute for Whitetailed Deer Management and Research has a variety of materials available on food plots and supplemental feeding. For more information, contact the institute at Box 6109, Dept. WT, SFA Station, Nacogdoches, TX 75962.



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