BUILDING YOUR OWN
'DEER FACTORY'

# Better Deer Forage When You Can't Plant

*Although year-round food plots are clearly the most effective way to boost the number of big, healthy whitetails on your hunting land, sometimes you have to explore other options. Here's what to remember as you do.*

*by Dr. James C. Kroll*

Over the past couple of years, you've read plenty in ***WHITETAIL*** about how improving the herd's food supply can lead to having more and bigger deer on your hunting land. As we've shown, a serious year-round food-plot program is the most effective way to accomplish that goal.

But what about those situations in which you just *can't* plant food plots? Perhaps your hunting land is entirely wooded, and for whatever reason you can't clear much of it. Maybe some other problem is keeping you from growing food plots. Do you just give up and live with the limitations? No way! There's always *something* you can do to improve the forage supply. The challenge lies in figuring out just what the best option is.

***WHITETAIL*** and the Institute for White-tailed Deer Management and Research have spent years developing tried-and-true ways to boost nutrition. Let's take a look at some practical options for improving your herd's diet when food plots aren't an option.

**A DEER'S-EYE VIEW OF THE WORLD**

Ask the average hunter how tall a whitetail is, and he'll hold his hand out at roughly chest height. That's almost 2 feet too tall. Most deer stand from 24 to 32 inches at the shoulder. Even their heads are no more than 48 inches off the ground.

In order to provide good nutrition to your herd, you must adopt strategies that keep plenty of the right types of food within this 4-foot "feeding zone" at all times. (Yes, whitetails can stand on their hind legs and reach higher for food, but they only do this routinely when they can't find enough good food within normal reach.)

**WHAT IS DEER FOOD?**

Deer are the pickiest eaters of all the hoofed animals. Whereas cattle use their tongues to sweep in vegetation, then let their tough stomachs sort out the mix, deer must walk from plant to plant, make a decision on palatability, then pick the tender, growing tips of preferred species.

Although whitetails eat many types of vegetation, they prefer succulent forbs (weeds). There would seem to be no shortage of such plants, but weeds actually are very ephemeral, seldom providing nutrition year 'round. They're especially scarce in the North during the colder months.

Last year's drought in Texas offered a great example of how inconsistent the forb supply can be. There simply was no spring moisture across much of that state, which meant there were no spring weeds to provide protein for does nursing fawns or bucks growing racks. As a result, fawn survival and antler growth were below average.

What do whitetails do in such tough times? They fall back on their old standby: browse, which is the leaves and twigs of shrubs, vines or young trees. Within this group are two basic types of browse plants: (1) *determinate* species, which put on a spurt of growth once a year, then harden up; and (2) *indeterminate* species, which put on growth after each significant rainfall during the growing season.

Obviously, the latter are best, for whitetails much prefer young, tender, growing vegetation. Unfortunately, the first-choice browse plants rapidly are depleted and even can become extinct in the face of a high deer population, such as we now have in many parts of North America.

In addition, many of our forests are maturing, taking them out of "deer production." Remember, almost all old-growth Eastern forests had been logged off by the early part of this century. The second- and third-growth forests that resulted from this were very productive for deer for a number of years, but they now are closing in.

Sunlight is one of the most critical variables in forage production; a shaded understory produces little in the way of deer food. Older forests can yield mast (acorns, beechnuts, etc.), whose fats and carbohydrates help deer make it through winter; however, these fruits are low in protein, which is what it takes to grow big antlers and nourish

*The author says that whenever deer start eating tree bark, it's a sure sign of nutritional problems. Such "forage" is only utilized in tough times. Photo by John R. Ford.*




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fawns. A sound management program must focus on sustained production of high-protein forage, which can't be achieved with heavy reliance on mast.

In most areas, deer experience two annual stress periods: late winter and late summer. If we're to succeed in a food-source management program, we must address both of these periods.

In general, whitetails need roughly 16 percent protein and a 1:2 to 1:1 calcium:phosphorus ratio in the diet for maximum health. Energy requirements exceed 3,000 calories per day in many cases. All of this is a tall order to fill when you don't have food plots, but it can be done.

Have you ever purchased a cheap can of asparagus? When I was a poor graduate student, I could only afford to buy this vegetable when it was on sale. I'd then cook up my highly anticipated meal, fill my plate and dig in — only to find my mouth full of chewy, woody stems! That asparagus was on sale because it had been picked too late; it just wasn't as palatable as it had been earlier in the season. As plants mature, tender cells are reinforced with a woody substance called lignin. This is what gives 2x4s the strength to hold up your house. But neither a 2x4 nor old asparagus is very good to eat!

Whitetails don't like tough browse any more than we do, so they seek out the tender, actively growing parts of preferred plants. Thus, one of the keys to growing healthy deer without the benefit of food plots is to keep native plants growing actively longer each year. While you can't change the climate to lengthen the growing season, there are various ways to encourage plants to generate more growth. Let's look at a few of them:

**PRESCRIBED BURNING**

The American Indian learned soon after he reached this continent that fire could be used as a management agent. In fact, the forests found by Columbus and other early Europeans literally had been shaped by the native Americans. Their strategy was to set fire to the forest in middle to late summer, then perhaps again in winter. This killed back woody plants in the understory, making them sprout new growth. In addition, intentional fires promoted the growth of weeds and grasses that only germinate after such an event.



*A prescribed burn is an intentional fire, conducted only under the right conditions, that boosts the growth of deer forage. Photo by Michael Skinner.*

The resulting forests of the 1500s were open woodlands through which one could see for a great distance. Fires also improved hunting by making game more visible, and they reduced such parasites as ticks.

Of course, fire can't be used in every situation. For example, bottomland forests shouldn't be burned, and there are obvious problems with trying to burn woods adjacent to metropolitan areas. And so many folks now are building houses in the woods that we face a "Catch 22" situation: Because of development, we can't burn to reduce fire danger, which in turn ultimately *increases* fire danger. Still, where it can be used safely, fire remains a great deer-management tool.

In many parts of North America, the age of the forest is a good criterion for deciding which areas to burn at which times. Woods more than 15 years of age generally are potential burning areas; by then they normally have begun to shade out the understory, reducing the available forage supply. Fields and grasslands also can be burned when there's a need to remove a buildup of thatch (dead vegetation) on the ground.

The term *prescribed burn* denotes a controlled fire, which is very different from a wildfire. A prescribed burn is conducted under ideal environmental

conditions and is controlled by a system of constructed fire breaks. In many states, a forestry commission forester or other licensed professional also must be involved in the process.

The normal procedure is to establish fire breaks, using a disk or small bulldozer, around the area to be burned. I prefer to do this in autumn, as new breaks can be planted immediately to a mixture of cereal grain and clover. These "food plots" not only provide forage for the cool season but also form green fire breaks for when the burn is conducted.

Most game managers conduct late-winter or early-spring burns. This time of year is relatively safe for burning, and it permits immediate response of the vegetation. Late-summer burns conversely are much more dangerous, but they produce more natural results.

Most prescribed burns are conducted as *back fires*, ignited in such a way as to back the fire slowly *against* the wind. This actually burns hotter than a *head fire*, which moves quickly *with* the wind.

I'm often amused at the type of news report that declares, "More than 80 acres of woodland were destroyed today by a wildfire." In reality, fire only rejuvenates the habitat. Within a few weeks (if not days) following a prescribed burn, you'll see tiny sprouts all over, as woody plants sprout from their bases and grasses and weeds germinate from seed. By midway through the next growing season, the entire area will be a lush tangle of highly nutritious deer food. In fact, fire tends to favor the better deer foods, such as legumes, giving them a leg up on the competition.

Good browse grows quickly; in fact, depending on the geographic area, the plants can grow beyond reach of deer within four or five years. I like to divide the managed area into 80-acre habitat blocks, then divide those blocks into even smaller subunits. I then burn the suitable subunits every three to four years. By carefully scheduling your burns, you can have native forage in various stages of growth at any given time, ensuring a steady food supply.

I exclude fire from bottomlands and any dense areas I want to keep for screening or thermal cover. (See the July issue.) But a burned area adjacent to a stand of dense cover is a powerful combination that provides "one-stop shopping" for deer.

### TIMBER MANAGEMENT

Foresters want to have trees growing in every available inch of space. This translates to total canopy closure, which translates to little or no deer food at ground level. In order to get light to the forest floor, you must remove some trees.

Unfortunately, most landowners resist timber harvest, as they think this will reduce habitat quality. To the contrary, *a well-managed timber stand provides better deer habitat than does a so-called "natural" timber stand.* If you have dense stands of timber, thin them as soon as it's practical to do so. This not only will produce more forage but will also increase the growth rate and vigor of the remaining timber.

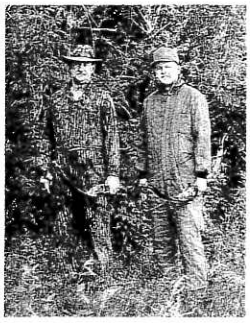
In the South, the positive effects of a timber thinning will last from three to five years, while in the North it will take seven to 20 years for the canopy once again to close in. Consult with a forester in planning such operations. Stagger your thinnings in much the same way as the prescribed burns, to ensure that *at least* 20 percent to 25 percent of the area is in high forage production at any given time.

### FERTILIZATION

Applying fertilizer is one of the easiest ways to improve the nutritional quality of nonagricultural deer foods. The best way to do this is by taking a soil sample of the area and having it analyzed by the local extension agent. The resulting lab report will provide recommended application rates for the three primary fertilizer ingredients: nitrogen (N), phosphorus (P), and potassium (K). You'll probably get a really weird look from the extension agent when you tell him that you want a recommendation for fertilizing native plants, but don't be deterred.

Several years ago, we found that we could *double* the nutrient content of native plants by periodic applications of fertilizer. In our research, we applied a balanced (N:P:K) fertilizer just before spring green-up, then followed up with monthly applications of 100 pounds per acre of ammonium nitrate until first frost.

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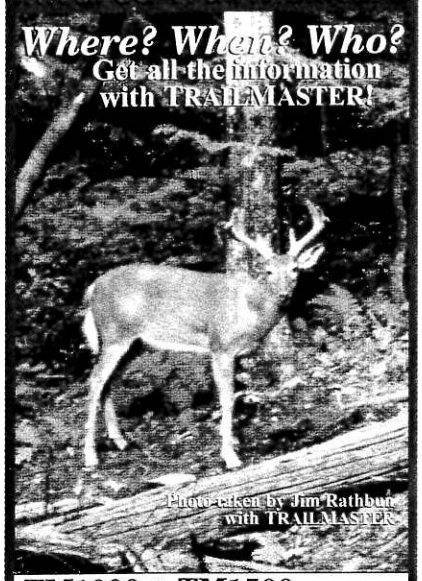


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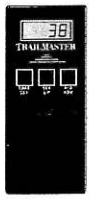
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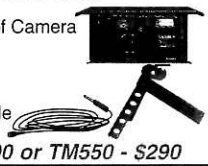


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openings are the best places to use fertilizer. Roadsides and meadows can be mowed periodically to maintain proper forage height, then fertilized to boost nutrient levels. At Fort Perry Plantation, the magazine's facility for deer-management research in Georgia, we use a spreader truck to apply fertilizer to the abundant blackberries, greenbrier and other forage plants along our road edges.

In the South, some managers have adopted the practice of spreading poultry litter, because it's such an inexpensive way to fertilize. Most state agriculture departments have published analyses and recommendations for poultry and other livestock litter, so check with your own agency for advice on that option.

## FORAGE SPECIES

If there were such a thing as a "perfect" deer forage plant, it would:

1. grow year 'round;
2. maintain high nutritional levels year 'round;
3. tolerate drought; and
4. stand up to heavy deer browsing.

Now, there is no such plant for all situations. However, in many areas, at least one widespread species comes pretty close: Japanese honeysuckle (*Lonicera japonica*). We recently conducted extensive research studies on this non-native plant, which has become naturalized in many Southern and Midwestern states, and the results have been encouraging.

While Japanese honeysuckle grows reasonably well in shade, it really thrives along roadsides and in small clearings, where there's more sunlight. The problem lies in establishment. There are few commercial sources for this perennial vine, and its popularity with deer makes it difficult to establish. Although honeysuckle will stand up beautifully to heavy browsing pressure once established, deer literally will pull the young plants out of the ground.

Cutting way back on deer numbers makes honeysuckle establishment easier. However, that runs counter to the goal of having the maximum number of big, healthy deer on your managed land. A better approach might be to plant large areas (1 percent to 2 percent of the total managed area) or to fence deer out of newly planted areas.

One commercial operator recently has developed a system involving an elaborate subsurface fertilization with liquid nutrients and a "tent" of 2x4-inch welded wire to keep deer out of the new plants. We've studied this method for three years now and feel it has potential, especially for those who can't use food plots. Other first-choice browse plants, such as blackberry, also show promise with this method.



*Japanese honeysuckle can be hard to establish where deer densities are high. Wire enclosures can give it a chance to get going. Photo by Michael Skinner.*

Here at ***WHITETAIL***, we're careful not to tout any single plant as the answer in every situation. There is no such plant! But if you can't plant a significant acreage in food plots, and if your hunting land is in the southern two-thirds of the U.S., you might look at adding Japanese honeysuckle to your herd's menu.

## CONCLUSION

There's always something you can do to improve the forage supply; you're limited only by how much effort you're willing to put into your program. But even if you have plenty of plantable acres with which to work, I still recommend that you implement some of these habitat-management ideas. In the long run, they'll help you reach your management goals more quickly. **(Editor's Note:** Next month, the author will help you determine how many of which bucks you should harvest from your managed land every season.)