BUILDING YOUR OWN
'DEER FACTORY'

Do Your Deer Need Supplemental Feed?

Whether you have food plots on your hunting land or not, consider the benefits of a sound feeding program.

by Dr. James C. Kroll & Ben H. Koerth

Since we began this series in fall 1997, the hunting public's interest in deer management has increased rapidly. Among the results is that many of you now are working to turn your land into better whitetail habitat.

The cornerstone of the strategy we recommend has been, and will remain, food-source management: that is, providing deer with all the highly nutritious forage they can eat, and doing so on a year-round basis. This is best done with cultivated food plots, as well as manipulating native forages through the use of fire, fertilizer and forest/range management techniques. But what if weather, soil or some other factor keeps you from implementing a forage strategy? Is there an alternative to growing the food your deer need?

The answer is yes, and it's called supplemental feeding. Let's discuss this often-controversial practice and see how it should fit into the herd-management equation.

WHY FEED?

We recently received copies of a cartoon pamphlet published by the Wildlife Management Institute entitled: *Supplemental Feeding: Just Say No!* The motivation for such a publication, we assume, comes from the general public's desire to feed wildlife when times are bad.

There are many unhappy stories about overly zealous feeding of wildlife. Each year, tons of "food" are distributed to various wildlife species by well-intentioned folks, with the purpose of helping the animals. However, in many cases, such activities are questionable at best.

In Michigan, for example, feeding and baiting of already high deer populations have led to an epidemic of bovine tuberculosis in the wild deer herd. When the animals are concentrated around feeding stations, deer that have TB – a disease most often spread through the air – are better able to pass it along to uninfected members of the herd.

Such problems are indeed exacerbated by feeding. Yet, when we consider the concept of supplemental feeding of game animals as part of a sound management program, the story often is quite different.

Many game agencies are faced daily with an increasing number of deer-human problems. As one biologist in the Northeast recently told us, "I don't care what you guys do about managing deer on private lands – my concern is what to do to keep them out of the grills of Oldsmobiles!"

In addition, deer have been linked to the spread of not only bovine TB but also Lyme disease, Rocky Mountain spotted fever and ehrlichiosis. Thus, it's not surprising that the idea of feeding wildlife to augment populations frightens many wildlife professionals.

There are two emerging "camps" of biologists: those who favor intensive management and those who don't. Some biologists recognize the many benefits of managing for a thriving herd of healthy deer, while others don't favor planting food plots or even manipulating native forages. Clearly, there's a need to resolve these issues. So let's discuss the argument for supplemental feeding, hopefully dispelling some well-entrenched dogma in the process.

There's a big difference between *supplemental* feeding and *replacement* feeding. Replacement feeding ignores the need for forage management and tries to circumvent natural ecological processes and principles with a "welfare" program for wildlife. This is the type of feeding we see most often during harsh winters and droughts, when it's highly supported by the non-hunting public. Many folks just can't stand to see nature take its course.

Pleas for funds to save a threatened population of deer or elk are just too much for the average citizen to ignore, and dollars pour in to "save the herd." In addition, there are some managers who, in their zeal to produce trophy bucks, attempt to take the "fast track" by pouring huge amounts of feed to the herd. Neither is a proper use of feeding.

As we write this, much of North America is in a protracted drought. Even the best-managed deer herds are suffering to some degree from its

Some managers prefer timed feeders, particularly if time and labor constraints make it hard to keep free-choice feeders filled. Which type is best for your situation depends on several factors. Photo by Mike Biggs.

effects. At our Institute for Whitetailed Deer Management and Research in Texas, as well as at ***WHITETAIL's*** Fort Perry Plantation in Georgia, our experimental food plots had a tougher time than usual in 2000. Cultivated forages didn't do very well, and native plants also have suffered; even some of our largest oaks are beginning to die.

But despite such weather problems, our research herds are doing well. Why? Because supplemental feeding is part of our management program. Feed has been a big help to these herds and others we've worked with many times over the years.

Some critics might ask: Why not just hold the herd at lower numbers, so that when tough times come, there's still enough forage to carry the animals through in good health?

Determining how many deer the habitat will support in good health can be tricky. While the concept of "carrying capacity" often is discussed by biologists, it remains nebulous and seldom supported by research.

One of the reasons is that carrying capacity is a moving target, changing yearly or even seasonally. No one ever would have predicted the level of stress many herds have endured recently. In fact, we feel that in order to get some Southern deer through the recent drought cycle in optimum condition, we'd need to hold those herds below huntable levels. In such dire circumstances, supplemental feeding is the only practical way to prevent serious ecosystem damage.

The idea of supplemental feeding is to permit your deer to "top off the tank," so to speak. In order to maintain a level nutritional plane, deer will seek out supplements to make up the differences between what they need and what's available in planted and native forages. It's for just this reason that we place a feeder near each of our food plots.

"GOOD" SUPPLEMENTS

What's a proper feed, and how should it be supplied to your herd?

We spend a great deal of time in the Midwest working with various whitetail-management programs, and it's amusing – though somewhat disconcerting – to see the vast array of items sold as "deer feed" there. Turnips, sugar beets, carrots, corn (on or off the cob), peas, soybeans and alfalfa top the list. None of these is a fully balanced supplement.

Root crops and corn are primarily carbohydrate sources, and marginal ones at that. Alfalfa does provide a quality protein source – it's one of the staple protein sources in pelleted feeds – but it's a poor carbohydrate source and lacks the extra vitamin and mineral packages that make pelleted rations a full-meal deal. And peas and soybeans are so high in protein – up to 34 percent — that you literally can kill deer with them under some circumstances. So what *does* make a good supplemental feed?

Many rations now commercially available are aimed specifically at improving deer nutrition. Most provide an adequate supplement, but others probably do more harm than good. So it pays to study ingredients before you buy deer feed.

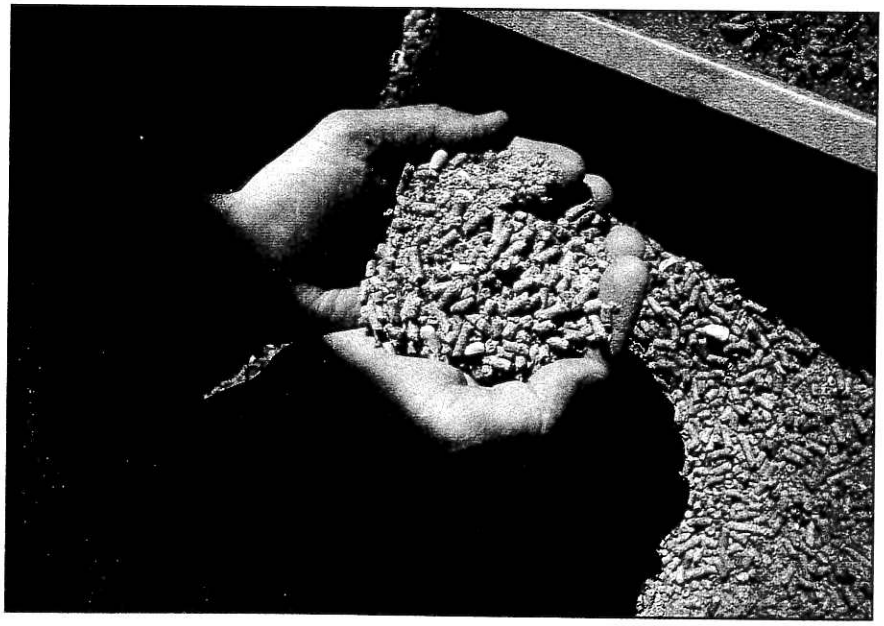
Although there are many feed components to consider, the one drawing the most attention is protein. Landowners and deer managers have been told that deer need a high level of crude protein to grow big antlers and a good fawn crop. Unfortunately, many believe the old adage, "If a little is good, a lot is better," and they let that hurt their feeding program.

Our research has shown *wild deer need no more than 17 percent protein for optimum growth.* A pelleted ration containing this amount of protein will serve deer quite well. Unfortunately, deer seldom eat more than a pound or two of feed per day, so we need to consider what they're getting from food plots and the native forage in their diet.

With good food plots, deer could be getting enough protein from these forages alone. If they're feeding solely on native forages, however, they're likely getting short-changed. So, a ration that's 20 percent protein generally works well in the wild. When this is mixed with lower-protein native forages, the deer's diet averages out to somewhere around the 17 percent optimum.

We've seen folks feed rations that contain as much as 30 percent crude protein. This is a serious mistake! Such high protein levels can damage a deer's kidneys, create severe stomach problems and, in the end, waste a lot of money. We strongly suggest you never exceed the 20 percent limit.

Protein alone doesn't make a good whitetail feed. Other important components include energy, fiber and minerals. Energy is measured as

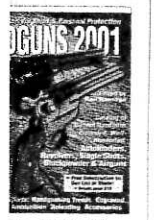


A balanced feed in pellet form is ideal for helping your herd deal with forage deficiencies. Mixing in some shell corn (which deer tend to prefer over pellets) can help get them adjusted to the idea. Photo by Gordon Whittington.



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digestible energy, the amount actually available to the animal. But again, more isn't always better. Corn can provide so much digestible energy that the deer's stomach acidifies to the point of destroying its ability to digest food. A buildup of organic acids kills the beneficial microorganisms that help the animal digest plant material. Fiber often helps to counteract too much energy, so a good deer feed should have a balance of protein and fiber.

Minerals come in two basic types: macronutrients and micronutrients. *Macronutrients* include phosphorus and calcium, and as the name implies, are used in relatively large quantities. *Micronutrients* include sodium, magnesium, selenium, copper and zinc, and are used in tiny amounts.

Again, a little information can be dangerous. Recently, there has been a lot written about the importance of selenium to antler growth. We recently were asked to treat several captive breeder bucks that showed signs of heavy metal poisoning. Guess what? They'd been fed a homemade feed concoction that contained lethal amounts of selenium.

The moral here is to stick to the established norms for all feed components, especially macro- and micronutrients. The amounts used in the better livestock feeds should work for your deer herd as well.

FEEDER TYPES

There are several good ways to provide supplemental feed. For years, we've fed supplements in homemade, covered troughs. But it takes considerable labor to keep the troughs full and clean over the year. For this reason, you might opt for one of the many commercially available feeders that hold larger amounts of feed.

There are two basic designs of deer feeders: free-choice and timed. Free-choice feeders permit deer to eat as much as they want, when they want it. Timed ("spin-cast") feeders, which distribute a set amount of feed at a predetermined time, are adequate for drawing deer to a spot, but they don't put out enough feed at one time for many deer to derive real nutritional benefits. They do work well for baiting deer during hunting season, where that practice is legal.

In most areas, a deer will consume about two pounds of feed daily. This, of course, varies with time of year and range conditions, ranging from less than a pound up to eight pounds.

FEEDING COSTS

Economics always is a concern in wildlife management. On average, it will cost about 25 cents per day per deer to supplementally feed. That might not sound like much, but consider the total cost to feed each deer for a year. You can expect each to eat, on average, about 700-800 pounds annually, at a cost of about $100 per deer. A property containing 200 acres, with a deer density of one animal per 10 acres (20 deer total) thus would require an annual budget of $2,000 for supplemental feed. This is a substantial management cost.

No matter what the laws are regarding baiting deer in your area, we normally recommend you not place feeders where you plan to hunt.

WHERE TO FEED

Our years of scientific research on deer activity and movements have repeatedly shown that *deer have a minimum summer home range of about 80 acres.* Thus, we recommend you "divide" your property into blocks containing about 80 acres. (Of course, if you control less than this amount of land, you'll have to go with whatever acreage is available.)

Within each 80-acre block, we try to provide "one-stop shopping" for our deer, including adequate cover, water and food. This includes manipulating native forage for maximum growth and nutrition, planting at least one or two acres in food plots (where climatically possible) and providing a supplemental feeder. (Water often is the most difficult habitat element to supply in each 80 acres, so a reasonable compromise is one water source per 160 acres.)

No matter what the laws are regarding baiting deer in your area, we normally recommend you not place feeders where you plan to hunt. Your deer will have an easier time getting the supplemental nutrition they need if you don't hunt near the feeders. You want the herd to feel comfortable and safe when they feed. A feeder placed in thick cover will provide nutrition without unduly exposing the herd to hunters.

We try to set up sanctuaries for deer, especially on any tract of limited acreage, so the animals can escape hunting pressure without having to leave the property. It's often wise to place a feeder in such a spot. Just remember not to go near it, except to replenish the feed supply.

IS FEEDING ACCEPTABLE?

Is supplemental feeding a good management practice, or is it just another shortcut that ultimately leads to ecological damage? The scientific literature doesn't conclusively support either position. The answer probably revolves around a person's motives for feeding and how a feeding program is implemented.

We can't judge the motivations of others, but we can comment on the positive impact sound supplemental feeding has on ecosystems. Our many years of combined experience in deer management have brought us to the conclusion there can be a place for supplemental feeding in a program, provided the manager pays attention to all of the key components of sound habitat and herd management.

WHITETAIL's own Fort Perry Plantation has proved to be a valuable field laboratory for studying the role of supplemental feeding. While the mainstay of the food-source program there remains forages (cultivated and native), feed provides a hedge against difficult growing conditions.

More than once this backup food source has helped the deer through a drought, reducing browsing pressure on the native habitat in the process. As a result, the Fort Perry ecosystem is far healthier than that on other local tracts, and we feel this speaks well for our management philosophy – including supplemental feeding.

(**Editor's note:** As we've stressed throughout this series, limiting the harvest of young bucks is one of the best ways to improve herd health on a piece of land. Next month, we'll show how mandatory size limits on bucks are helping to improve some herds around North America.)