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BUILDING YOUR OWN
'DEER FACTORY'

# Food Plots For Better Hunting

*The right cool-season forage strategy on your land will give you a healthier herd and improved hunting. Here's what our research shows to be effective for fall and winter food plots.*

*by Dr. James C. Kroll and Ben H. Koerth*

How well do the thousands of acres of food plots now being planted for whitetails achieve their purpose?

Before we can answer that question, we must ask another question: What are food plots really *intended* to achieve?

In every situation, we want them to improve deer nutrition. But during hunting season, we also want them to help us improve harvest efficiency. Proper harvest is a key component of sound management, so using the right approach to cool-season plots benefits both the herd and the hunters. Conversely, the wrong approach to cool-season plots can cause you to fall short of your management goals.

Last fall, a good friend and colleague who supervises the management of a large timber company's customer entertainment area invited us over for a cup of coffee. He admitted he had a problem and wanted some advice.

As we sat there at the table, he outlined his dilemma: The deer harvest on the property was way off, and the hunters were starting to complain. Because the property is not far from our Institute for White-tailed Deer Management and Research in East Texas, we agreed to visit the property and make some suggestions.

What we found, upon visiting the site, was that the manager's zeal for food plots had made the hunting more difficult. He had a vast amount of land planted, including every inch of every right of way, natural opening and woods road. Deer had to walk only a few yards in any direction to feed. This had greatly dispersed the herd and had reduced the effectiveness of the many permanent stands dotting the property. Thus, while the herd was in fine shape, the manager was losing credibility with his hunters, who just weren't shooting — or even seeing — many bucks.

Balancing herd health with hunter goals is always one of the challenges in deer management, but it can be done with the right cool-season program.

**PLANT VARIETIES**

The many varieties of forage plants now available differ widely in their production and growth characteristics. Years of research on hundreds of varieties have led us to conclude that none is suited to every situation, and none is productive year 'round.

Basically, we can divide cool-season forages into three distinct groups: cereal grains (oats, wheat, rye, etc.), legumes (clovers, alfalfa, etc.) and other plants (brassicas, chicory, rye grass, etc.).

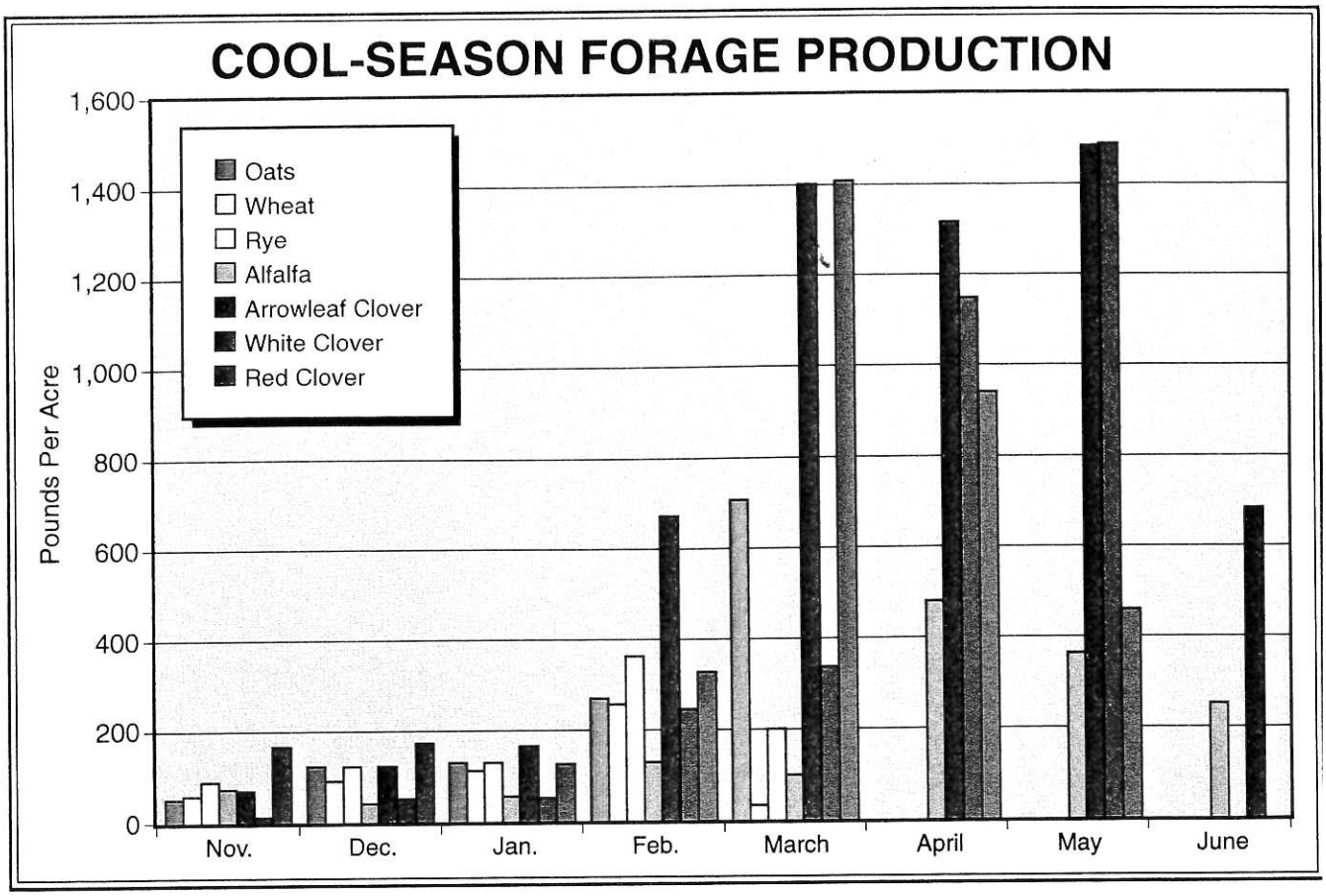
The principal growth strategy for cool-season forages — all of which were derived from wild plants — is to germinate from late summer to early fall and then flower and produce seed the next spring or summer. However, yield and nutritional quality over this time vary widely, depending on plant variety and environmental factors. We recommend combination plantings, which hedge your bets against crop failure and ensure the deer have good nutrition throughout the cool season.

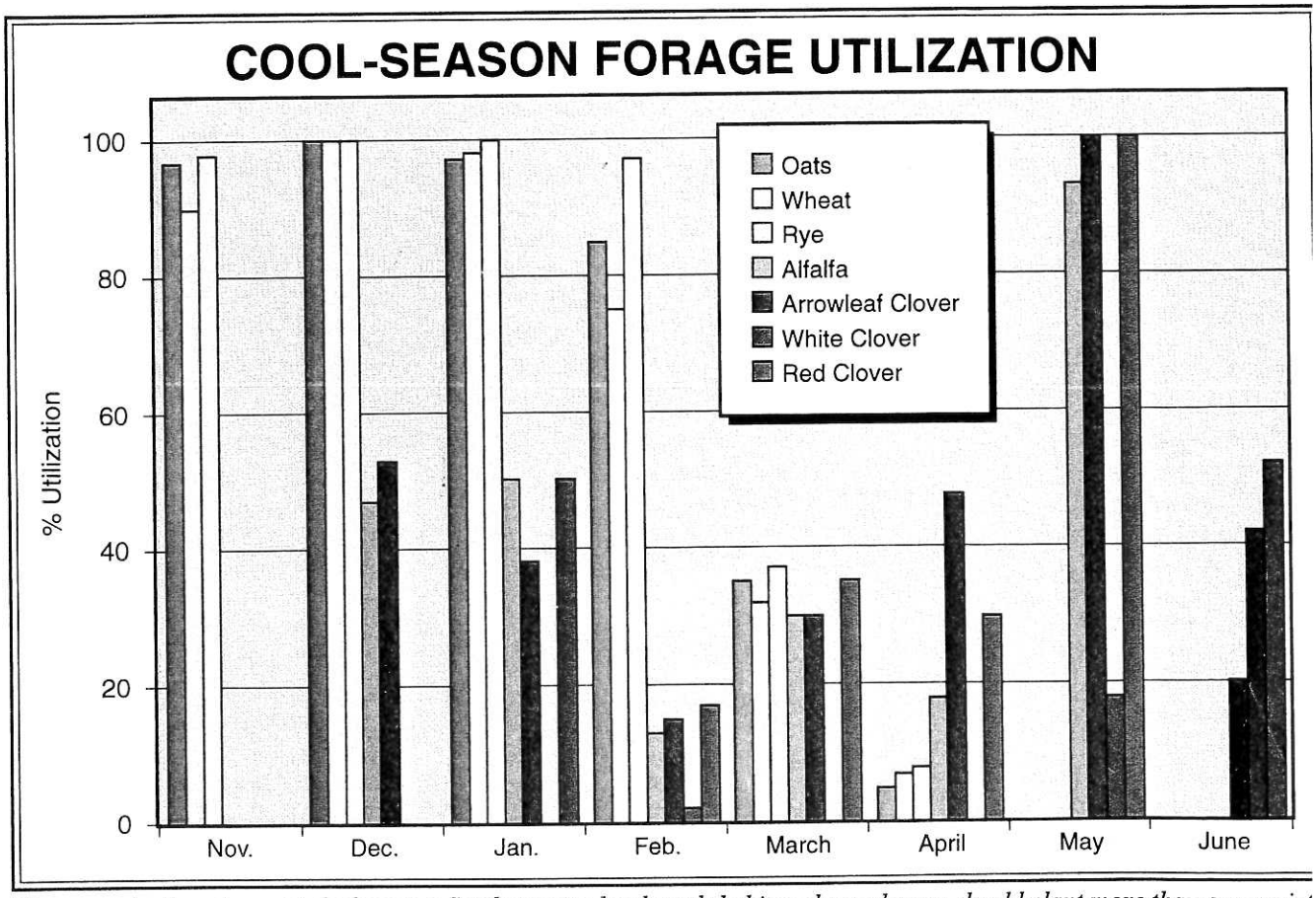
Our research (at our institute, at ***WHITETAIL***'s Fort Perry Plantation in Georgia, Michigan's Muy Grande Ranch and elsewhere) has shown vast differences in forage yields from one plant variety to the next. To illustrate, on Page 45 are two graphs showing the amount of forage available in cool-season plots from November through the remainder of the growing period. (The graphs are based on a study by James' former graduate student, Dr. Billy Higginbotham, in a Southern pine-hardwood habitat.)

The upper graph shows early-fall forage production varying by less than 20 pounds per acre for some plants to more than 500 pounds per acre for others. Also, while the peak growth period didn't occur until late spring to early summer, when the plants were maturing, some peaked far earlier than others. Still, on the surface, all were at least somewhat available during gun season, which in the study area ran from November into January.

The lower graph shows something else a manager needs to know: average utilization, as a percentage of the total amount of forage available for each variety. What's most significant about the results is that they show utilization of cereal grains was high and then trailed off into spring and summer.

Why? As cereal grains approach maturity, they divert available nutrients from leaf growth to flower and seed production, and the protein content,




*These graphs, based on a study done in a Southern pine-hardwoods habitat, show why you should plant more than one variet of deer forage in your cool-season plots. Cereal grains are winners early in the growing season, while legumes come on stron later. Of course, plant performance and attractiveness do vary from place to place. Graphs by Allen Hansen.*

energy content and digestibility of the forage rapidly drop. But this doesn't occur at the same time everywhere. In the South, most cereal grains mature in late spring, while in the North they do so in late summer or early fall. Thus, there can be geographic differences in cool-season forage yields.

There also are marked differences in preference from one variety to another. And these preferences change over time, as a result of each forage's changing nutritional quality. This attractiveness is expressed as a "preference rating."

If we combine a plant's production of forage per acre with its preference rating, we get its "usefulness value." When we do this for a number of cool-season forage varieties, we come up with some interesting results, as shown in the accompanying graph.

As you can see from this graph, when we combine the attractiveness of a variety with its forage production, the legumes rank relatively low from midfall into midwinter. Cereal grains are just more "useful" to deer — and thus, to hunters — at this time of year.



*Rye is a favorite of managers in many areas. This cereal grain is attractive to deer and grows well before winter sets in. Photo by Michael Skinner.*

Why, then, would we even consider planting legumes in cool-season plots? The answer is simple: Their usefulness seriously increases in the weeks and months *after* hunting season. In the South, legumes' forage production, palatability and nutritional value all rise dramatically in late winter into early spring, even as the usefulness of cereal grains is falling. This shift also occurs farther north, though later.

Herein lies another value of planting more than one variety of plant. If your combinations are chosen correctly, you'll have different varieties growing and maturing at different times. As one matures, taking it out of production, another is just starting rapid growth, taking on the burden of providing high-quality forage for the herd.

Now that we have some idea of our options for cool-season plantings, let's look at some other decisions we must make regarding forage production this time of year. We'll start with how much to plant, and where to do so.

## A FOOD-PLOT HARVEST STRATEGY

Let's go back to the earlier example of our friend who manages that timber company land for guest hunting. While his zeal for food plots was admirable, it led him into making two mistakes.

First, he had far more forage than was needed to feed the number of deer on that tract. He had roughly a deer per






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is time of year. : even consider l-season plots? heir usefulness the weeks and season. In the ge production, onal value all ate winter into e usefulness of This shift also ough later. alue of planting f plant. If your sen correctly, rieties growing at times. As one of production, ; rapid growth, a of providing the herd. me idea of our a plantings, let's isions we must e production at l start with how ere to do so.

**LOT RATEGY**

earlier example ages that timber- t hunting. While was admirable, two mistakes. ore forage than number of deer ughly a deer per

20 acres but enough food to support several times that density.

If you've been following this series in *WHITETAIL*, you know that one of the points we stress is that with enough food and cover, it's possible to have high numbers of deer without seeing declines in individual deer size or health. Thus, it's hard to criticize any manager for growing too much prime forage. You *should* plan on growing more food than your deer can eat in order to provide a "safety net" in the event of a difficult growing season, but in the case of this piece of land, there was so much excess food in so many places that deer became too hard to hunt.

Our years of research at Fort Perry have shown that 1 acre of productive year-round food plots can provide as much deer forage as 100 acres of typical forest. This means *an acre of food plot will meet the total nutritional needs of at least three deer.*

There are two basic ways to use this knowledge. First, you can take a current population estimate for your land (gained through conducting a herd census, as discussed in past issues) and work up an estimate of how many acres of plots are needed to feed those deer that are now present. For example, planting 3 percent of your land to food plots should support a population density of at least nine deer per 100 acres (a deer per 11 acres) in good health.

***Our research into whitetail behavior (which includes tracking radio-collared wild deer) has shown us that most deer using food plots go undetected.***

Second, you can use this formula to unlock your land's potential to become a true "deer factory." If you have the year-round cover to hold more deer, and you can give them protection from predators and excessive hunter harvest, increasing the planted acreage will give you more deer over time while still letting the animals reach their full potential for body and antler size.

If you have enough plantable land available, we recommend you adopt an advanced food-plot strategy providing for both nutrition and harvest. On deer properties we manage, we do this by designating each planted area as either a *nutrition plot* or a *harvest plot.*

Nutrition plots are planted primarily to legumes and other forage varieties that produce most of their growth in spring and summer. The harvest plots are planted solely to cereal grains, which, as noted, are most attractive during hunting season.

In most management programs, two main goals are to increase the size and number of deer in the harvest. Highly attractive harvest plots can concentrate deer in predictable places at a time when hunters are afield, allowing the animals to be observed and hunted with greater efficiency. (Research shows that if given adequate cover and protection, the deer using a food plot will spend the majority of their time within a quarter-mile of the plot.)

With the arrival of spring, deer use largely shifts to the nutrition plots of legumes, which then benefit the herd by providing the nutrition needed for maximum antler growth and high fawn survival rates.

How many harvest plots do you need? We normally designate no more than one per 80 acres, with one per 160


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acres being even better for hunting. If you put food plots everywhere, you'll have the second problem our friend faced: "country club" deer that can find all the food they want by moving only a few yards in any direction. In such cases, the deer have so many options that their feeding patterns become far less huntable. Combine this with the fact they don't have to spend much time filling their bellies, and you see why having too much forage in too many places is actually a problem.

Where should your harvest plots be? As detailed in past issues, the best sites are adjacent to travel corridors and areas of good escape/thermal cover. This is where the overall concept of "landscaping" your property for deer comes into play.

Just as we must keep harvest in mind when setting up cool-season plots, we also must avoid denying the herd good nutrition and security. For this reason, we designate some fall plots as "off limits" to hunting. Although most feeding activity in all plots takes place at night, too much hunter presence in an area can move deer off the tract, exposing them to the risk of indiscriminate harvest on surrounding lands.

Locate your "sanctuary" plots next to the thickest cover available and *never hunt them*. If you become concerned that this will make it too easy for your deer to avoid harvest, just follow the lead of one landowner we know who rotates his hunted and unhunted cool-season plots each year.

## HUNTING FOOD PLOTS

In our opinion, most hunters take the wrong approach to hunting food plots. The average guy ends up sitting right on the plot's edge, where he presumes he'll be able to see the most deer. Our research into whitetail behavior (which includes tracking radio-collared wild deer) has shown us that most deer using food plots go undetected. That's more than we can say for the hunters!

Every study we conduct tells us that whitetail activity is by nature largely nocturnal. We don't know if this is a result of being hunted for so many generations or if it has another origin; all we know is that it's true. Even with light hunting pressure, the majority of foraging activity occurs after dark.

Whitetails generally follow a basic routine of rising from their beds from midafternoon to late afternoon and then moving casually toward a food plot or other feeding area. Arriving just before dark, a deer tends to mill around in thicker adjacent cover (a staging area) until the light is extremely low; then the animal walks out to feed. In most situations, older bucks usually don't even reach the staging areas until right at dark or a few minutes later.

How do you combat this? Rather than watch the plot itself, set up in a travel corridor leading to it. You'll still be hunting the plot, though you might be several hundred yards from it.

All-day hunting generally is best. However, when you are hunting trails that link security cover to food plots, going in during the early morning increases your risk of spooking deer on their way to bed. That's why, when hunting food plots, we often sneak into travel corridors shortly after noon and then hunt until the end of legal shooting light.

Another consideration in hunting food plots is to choose entry and exit routes that minimize disturbance of the area. Remember: The shortest distance between your truck and your stand site isn't always the route to take. Give your path plenty of thought before heading into or out of the woods.

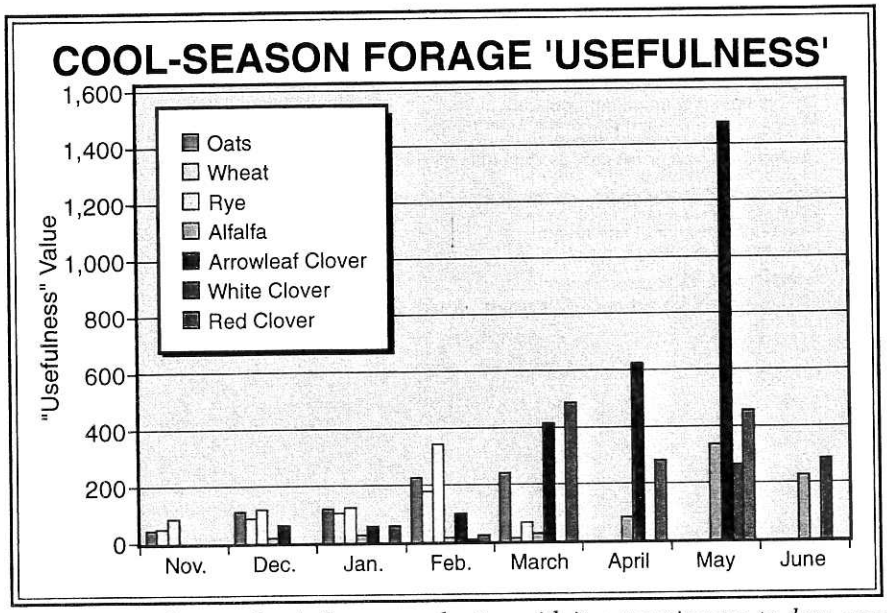
An added benefit of hunting away from the food plots, instead of right on top of them, is that this prevents deer from associating "bad" things with the food sources. This should let you keep observing deer on the plots in daytime, even late in the season. Sound management involves keeping records of buck-to-doe and doe-to-fawn ratios. Observation — before, during and after deer season — is a great way to obtain this type of valuable information.

We like to sit adjacent to food plots after the season and record the number of bucks, does and fawns seen. Once hunting pressure ends, deer seem less reluctant to use open areas in daylight, and because you're not hunting, you can stay and observe well after what would be legal shooting light.

## CONCLUSION

We're thrilled to see so many hunters and landowners maturing in the *art* of management, as well as its science. The public is learning that there's more to feeding deer than just throwing some seed onto the ground and hoping for the best. Sound forage management is a big part of managing for a healthy herd, and if you do it properly, it can greatly increase your year-round enjoyment of deer.

**(Editor's note:** In the October issue, the authors will look at several of the most-asked questions in management, such as, "When's the best time of the season to shoot does?" and "Can I do it without hurting my buck hunting?")




*When you combine a plant's forage production with its attractiveness to deer, you get what the authors call its "usefulness" value. Forage is of real help only if it's highly nutritious, palatable and available in quantity. Graph by Allen Hansen.*