



5 Principles OF FOOD PLOT MANAGEMENT

If you consider these five principles first, before deciding what to plant or how to manage it, you will be more successful in reaching your food plot goals.

BY DR. CRAIG HARPER

Planting food plots is the most popular form of habitat management for white-tailed deer. All across the country — from the cold northern latitudes of the Upper Peninsula of Michigan and the Adirondacks of New York, to the Deep South with long summers and hardly any winter, to the grasslands of Kansas and the brush country of south Texas, to the hills of Tennessee and throughout the Mid-South with muggy weather and well-defined seasons — managers and deer enthusiasts use food plots to provide abundant nutrition for deer and to attract them for hunting. Research and experience have discovered an array of strategies that enable managers to grow and manage food plots for deer just about everywhere they occur throughout the country. However, with such variation in climate, seasons, soils, and objectives, there is no strategy that works best in all areas. Climate, in particular, demands that different plantings and techniques be employed in different regions. Various plantings, techniques, and strategies commonly are promoted and advertised, but managers often are frustrated to learn through experience that

a particular planting or technique does not work well in their area.

Before you get into the details of specific plantings, techniques, and strategies, you should understand the principles, which are the foundational truths upon which associated practices are supported. Here, I cover five principles of food plot management for whitetails. If you consider these principles first, before deciding what to plant and how you are going to manage your food plots, you will be more successful in providing an attractive and nutritional food source for deer, and you will be more successful in reaching your goals.

PRINCIPLE 1: Food plots are supplemental to naturally occurring forages. Do not try to manage deer nutrition with food plots alone.

Diet studies indicate naturally occurring forbs and browse provide the backbone of nutrition for deer. Even when food plots or supplemental feed is provided, deer continue to rely on natural forages. Their continued use of it may be attributed to three factors.

First, deer are classified as concentrate selectors. That is, they concentrate their foraging on select plants and select plant

parts, eating almost continuously, unless alarmed, as they walk along.

Second, they spend most of their time in relatively dense cover, likely as a defense mechanism, where visibility is limited. If forage is available within protective cover, they would rather eat there instead of standing in the open and grazing in one area over a relatively long period of time like cattle. And if they feed in open areas, they do so relatively quickly before returning to cover.

Third, naturally occurring forages contain various minerals and vitamins that are not necessarily available in all food plot forages. Therefore, it is highly desirable to have a diversity of forages, especially forbs, well-distributed throughout a property. Deer weight and antler size typically are greater in areas where naturally occurring forage is abundant, of high-quality, and distributed throughout the property and beyond. From a management perspective, it is important to understand that not all naturally occurring forages are high-quality, which plants are best, and what habitat management practices are necessary to increase high-quality forage plants.

Regardless, at some times of the year, naturally occurring forages will wane in

abundance and quality. At these times, food plots can provide a nutritional boost in quality and quantity and an attractive advantage beyond what is naturally available to help deer realize even greater weights and antler size per age class. **You should consider naturally occurring forage as the nutritional baseline for your hunting land.** If the baseline is high, then your food plots can help boost weights and antler size a little higher. If the baseline is low, food plots can provide an important source of nutrition, but average weights and antler size per age class are almost never up to what they would be if there was an abundance of high-quality natural forage. An exception to this is when a tremendous amount of acreage is planted in food plots and well distributed, such as in landscapes dominated by agricultural crops attractive to deer.

PRINCIPLE 2: Objectives should determine what is planted. Prioritize nutrition and attraction.

Many people are confused about what to plant and often are misled by advertisements promoting various forages. There are lots of forages that can be planted that deer will readily eat. However, not all forages are most productive at the same time of year. And deer prefer some forages over others, especially at different times of year and at different stages of growth (see Principle 3).

So, what are you trying to do? If you are planting to attract deer to shoot them – and that’s okay, you don’t need to apologize – then you need to plant something deer are strongly attracted to. According to your location north to south and whether you are hunting early or late season, that may be anything from warm-season annuals like soybeans to cool-season annuals like forage rape to cool-season perennials like ladino clover. However, these forages are productive and attractive at different times of the year in different regions.

For example, if you are in Wisconsin to New York, don’t count on perennial forages, such as ladino clover, chicory, or alfalfa, being very attractive during the latter portion of the deer season, as they likely will be dormant. Standing corn or soybeans, or a cool-season annual such as brassicas, winter wheat, or cereal rye, would be much more attractive at that latitude at that time of year. If you are in the Deep South, perennial forages may be



THE IMPORTANCE OF EARLY SUCCESSIONAL PLANT COMMUNITIES for deer cannot be overstated. Areas such as this can provide more than 4,000 pounds (dry weight) of selected forage per acre and offer optimal fawning cover. Any serious deer manager should recognize this and incorporate such areas throughout a property managed for deer.

productive and attractive into December and January, especially if they were planted on the appropriate site where sufficient moisture was available to enable them to survive hot, dry summers.

There are many other examples. Early-season bowhunters in Mississippi may set-up near an iron-clay cowpea patch while their perennial clover plot is trying to recover from scorching late-summer heat and while the oats/berseem clover plot is trying to establish. Meanwhile, their brethren in Michigan may be shooting deer with a bow over alfalfa the first week



IT’S JUNE IN MISSOURI and this plot of alfalfa is pumping out digestible protein and energy, just what deer are needing at that time of year. However, it won’t be providing much of anything in December. Standing soybeans and corn will be the attraction at that latitude then.

in October. The point is, consider when the forages you are planting are going to be most productive and most attractive to deer. It varies according to where you are.

If you truly are trying to maximize nutrition and help deer attain maximum size, the most attractive fall/winter food plot may not provide anything when deer need nutrition for growth. If you are trying to maximize nutrition for body growth and antlers, you should concentrate on providing tonnage of high-quality forages when deer are growing, which is in spring and summer. Many people discredit the notion that nutrition may be limiting in spring and summer because “everything is green.” However, not everything green meets the relatively high nutritional requirement of deer at that time. If an abundance of high-quality natural forage is lacking, then habitat management through field and forest management should address the limitation.

Several annual clovers, especially crimson and balansa, are very productive through April. Arrowleaf continues producing through July before flowering and dying. According to latitude, perennial cool-season forages are most productive April to July. Annual warm-season forages, such as soybeans and cowpeas, out-produce all others from July to September. Providing adequate amounts of high-quality forage well distributed throughout a property from early spring through late summer is key to maximizing weights, fawn survival, and antler growth.

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PRINCIPLE 3: *Timing of plant growth and maturity determines nutrient availability. Identify when nutrient availability is limited on your hunting land.*

Various species of plants are more nutritious than others. And some species of plants are more attractive to deer than others. These facts are well-documented. However, what is less understood by many people is how the age of a plant strongly affects nutrient availability within that plant, and how nutrient availability does not necessarily dictate deer selectivity, as many people erroneously believe.

Nutrient availability within a plant decreases as the plant matures. Cell walls and other structural components grow larger as the plant matures. Structural carbohydrates, especially lignin, are relatively indigestible to deer and apparently much less palatable because deer strongly prefer relatively young plant material. The increase in structural components and corresponding decrease in digestibility is more prevalent in some plants than others.

For example, the stem of some food plot forages, such as alfalfa or American jointvetch, becomes much more hardened and tough than the stem of ladino clover,

which is relatively slender, pliable, and hollow, even after it flowers. However, that does not mean alfalfa or jointvetch do not continue to provide digestible nutrients.

Alfalfa continues to produce new leaves until it flowers and produces seed, and jointvetch continues to produce new leaves throughout summer, even after flowering. The new leaves produced at the ends of the stems are highly nutritious and digestible, which should influence how the food plot is managed. For example, if alfalfa or jointvetch (or any other forage) is continuously grazed and continues to produce new leaves, there is no need to mow the plot in an effort to “freshen it up.” Indeed, older stems and leaves are less nutritious and digestible than younger leaves and stems, which is what deer are selecting. However, when you consider how a larger, unmowed plant produces more new leaves at the ends of stems than a shorter, mowed plant, it is easy to understand why continual mowing is not only unnecessary to have a productive and attractive food plot, it actually can be counterproductive.

I am not saying a forage food plot should not be mowed. I typically recom-

mend mowing perennial forage food plots once per year, usually in late summer after the forages have flowered and produced seed. However, if you have not managed undesirable weeds in the plot with the appropriate herbicide application earlier in the growing season, then additional mowing may be necessary to prevent weeds from overtaking the planted forages. I do not mow annual plots, whether warm-season or cool-season, until they die. There is no need to. Annual forages continue to produce fresh, new forage until they flower and die.

Plants grow more when growing conditions are favorable. Adequate soil nutrients, moisture, and sunlight lead to maximum plant growth. Increased growth of healthy plants means there is more young nutritious forage available for deer than with plants stressed by inadequate nutrients, moisture, or sunlight. Therefore, soil amendment with lime and fertilizer can lead to increased plant growth if nutrients are limiting, as can irrigation if moisture is limiting, or cutting/killing trees if sunlight is limiting. Increased plant growth may lead to increased deer usage because there is more young plant material, which is



DEER SELECT THE MOST TENDER AND DIGESTIBLE PORTIONS of plants to eat. The young leaves produced at the ends of stems, such as this blackberry, are nearly twice as digestible and nutritious as the older leaves farther down the stems. The same is true for food plot forages.

highly digestible.

Continued growth and available nutrition also influence how “old-field” cover should be managed. Many of the forbs growing in an old-field are highly nutritious and strongly selected by deer. In fact, many naturally occurring forbs may be selected by deer over planted forages. If an old-field is mowed during the grow-

ing season, it hurts in two ways. First, the structure of the cover is destroyed, which is particularly detrimental to fawning cover. Second, mowing during spring/summer promotes grass, which deer do not eat in summer unless they have nothing else. **Any recommendation to mow an old-field to promote greater nutritional value is simply wrong!** Period. The leaves

produced at the ends of the stems of a 4-foot-tall plant of common ragweed, old-field aster, pokeweed, or blackberry, for example, is just as nutritious and digestible as those leaves produced when the plant is 1-foot tall! And a 1-foot-tall plant does not provide cover for deer.

A little knowledge of how the timing and growth to maturity of different plant species affect nutrient availability will help you manage the site more efficiently and effectively for deer.

PRINCIPLE 4: Sound agronomic practices are more important than what you plant. Don't cut corners on soil amendments, seedbed preparation, weed control and other practices.

“He said deer like this plant best.”

“They showed this mixture on TV and they killed a huge buck in the plot.”

“The bag says this one provides ‘maximum’ nutrition.”

Everyone worries about what they should plant. The truth is, the majority of forages you see or hear promoted for deer are good forages. They provide good nutrition during specific periods of the

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year, and deer eat them. However, an often overlooked common denominator with successful food plots is *sound planning and planting practices*.

The vast majority of food plot plantings include non-native species, and most have nutrient requirements that exceed what is available in many of the soils where we plant. Thus, we have to amend the soil with lime and fertilizers to enable the plants to express their growth potential. Furthermore, we often have to control various naturally occurring weeds or they will overtake our planted forages. Additionally, we have to plant and manage the plot appropriately, or plant germination and growth will suffer.

(Boy, wouldn't it be nice to be able to manage a field of weeds that deer like to eat and that grow just fine without soil amendments? Well, you can, but that's another article!)

Most of the food plot forages promoted for deer actually exceed nutritional requirements for deer. For the majority, healthy, growing plants during spring and summer have protein levels that exceed 20 percent, phosphorus levels that exceed 0.3 percent, calcium levels that exceed 0.5 percent, and other minerals and vitamins in sufficient amounts to support lactating does, growing fawns, and maximum antler growth. Likewise, healthy, growing forages in fall/winter are highly digestible and provide sufficient energy for deer. **The tonnage and distribution of high-quality plants available on your hunting land is almost always more often a limiting factor than the nutritional value of those plants.** However, none of this is possible unless the soil in which you are planting adequately supports plant growth and unless the plot has been planted and managed appropriately to allow proper germination, seedling survival, and growth.

Moreover, go back to Principles 1 and 2. If the naturally occurring nutritional baseline is great enough to allow your food plots to grow and not be grazed to the ground, and if you plant something that is productive and attractive when you need and want it to be, then you're good to go!

The point is, do not worry about what other people are planting. Instead, think about why *you* are planting, consider which plants *you* need in *your* area and situation to meet *your* objective, and then use sound agricultural practices that will promote healthy plants that can grow to

their full potential. Another way of saying this is, if you are going to do it, do it right! The nutritional difference between various clovers, alfalfa, chicory, and brassicas, for example, is relatively negligible *with regard to what deer need during the times those plants are healthy and growing*. However, if you have not amended the soil as necessary, or used the correct planting procedures, or attended to weed pressure as necessary, then your planting will not grow to its potential, and neither the deer nor you will attain the benefit you had intended.



THIS FOOD PLOT FAILED, but not because of bad seed, the wrong mixture, or because there's too many deer. This failure was a result of poor seedbed preparation and planting technique, which is not uncommon. If you're going to do it, do it right.

PRINCIPLE 5: Dedicate separate acreage to warm- and cool-season crops. Do not remove food when deer need it just to plant something that may be used in the future.

It is late summer. The forage available in your soybean and cowpea plots has peaked in tonnage, and deer are feeding in them regularly. The digestibility of naturally occurring forages is declining and your warm-season plots are providing a tremendous source of energy as does are drawn down from lactation and bucks are putting on fat in preparation for fall and the stresses of the rut. If you are tempted to clear your warm-season food plots to plant a cool-season plot to hunt over in the coming months, it is time to evaluate your objectives (Principle 2).

Yes, you want a green plot to hunt over come fall and winter. However, you probably also want to keep deer on your property, and you probably would like to see deer weights up as much as possible. If that's the case, then you should let your warm-season plots stand and allow deer

to gain nutrition from them during a time when highly digestible forage may be lacking. A soybean or cowpea food plot easily may contain 4,000 pounds (dry weight) of highly digestible forage per acre in late August and early September. You won't regain that anytime soon with a cool-season planting.

Make no mistake, large amounts of high-quality food going into fall help deer accumulate fat that may be used in winter. Furthermore, standing soybeans may provide food well into winter, depending on

acreage planted and deer density.

In another scenario, your plot of arrowleaf, red, or ladino clover, chicory, or alfalfa is pumping out protein during spring and early summer, precisely when it is needed most for bone and tissue growth and milk production. Many people are tempted to clear cool-season plots in spring to plant a warm-season plot, precisely when the cool-season plot is providing optimal nutrition for lactating does and initial antler growth. Instead of clearing these plots, let them do what they were designed to do! If possible, clear another area to plant and maintain additional forages. Additional open areas allow you more management options for warm- and cool-season plots as well as fallow field management, all of which lead to increased nutritional carrying capacity for your hunting land.

I realize not everyone has land available for multiple food plots. In that case, do what is most important for your situa-

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tion, and “double dip” if you can. That is, you can no-till drill cool-season forages into a declining warm-season food plot (usually after the first frost), or you can no-till top-sow various cool-season forages into a warm-season plot before it begins to decline, allowing the seed to settle and be able to germinate as soon as the warm-season plot begins to die. Likewise, soybeans or cowpeas, for example, can be drilled into annual cool-season forages when they begin to decline.

Certainly, no-till agriculture can extend forage availability in many plots without destroying the food source when it is needed most. That being said, do not overlook the importance of early successional plants in a fallow rotation of multiple annual food plots while separate perennial cool-season plots are maintained.

FOCUS ON THE BIG PICTURE

I’m reminded of what my major professor Dr. David Guynn at Clemson University told me 25 years ago.

“Craig, you worry too much about



IT WOULD BE A MISTAKE to clear this plot of arrowleaf clover in May – when deer are using it regularly and it will continue to produce high-quality forage for nearly two more months – just to plant a warm-season crop. Instead, dedicate separate acreage to your warm-season plantings.

minor details. You need to keep focus on the big picture.”

How true that was for me then, and how true it is today with many folks trying to manage food plots for deer.

“The big picture” here is considering your entire property for management, not just a few food plots. Think about how your food plots can complement and add to the nutritional baseline of your property. And if the nutritional baseline of your property is low, why is that? If optimum nutrition is your objective, you should worry more about providing tonnage and distribution of good forage instead of a specific planting. If you are planting to attract a deer to shoot, choose a planting that is highly attractive and highly productive during the time you will be hunting. And regardless of why you are planting food plots, do it right!

If you follow these principles before worrying about the details, I believe the big picture will come into focus and you will more likely meet your deer management objectives.



Dr. Craig Harper is a professor of wildlife management and the Extension Wildlife Specialist at the University of Tennessee. His primary responsibility is assisting natural resource professionals and landowners with issues concerning wildlife management. He has conducted research on food plots, wildlife openings and their use by wildlife since 1994. Craig is a regular speaker at QDMA’s Deer Steward courses.