Dr. Deer's™ PRESCRIPTION

Getting Real On Food Plots

By Dr. James C. Kroll

I just got back in the office from an appearance and seminars at the 2013 Houston Hunters Extravaganza, and again it was a treat to be there! Each year it seems like "old home week" at the show, with dozens of folks coming to our seminars who have attended every one we have given for the last 25 years. My partner, Ben Koerth, and I were amazed how much people have learned about deer over time. Each year, the questions get better and better; more focused on specific problems and issues related to deer management. This year, after several years of drought attention turned to what will really work when it comes to food plots. So, I thought I would devote this column to what we told the audiences about food plot strategies that really work.

Ben and I have spent decades studying various varieties and species of plants that have the potential to increase the nutrition of whitetails on your property. Unfortunately, out of the hundreds we have studied, there have only been a few plants that have panned out to be both cost-effective and functional in a nutrition program. In addition, geography and climate plays a



A mixed planting of corn and soybeans or cowpeas can be protected with an electric fence until you either want your deer to have the nutrition or you want to attract deer for hunting. This simple three-wire electric fence produced a record crop of beans and corn in an area where such crops were impossible before this technology was available.



great deal in the success of your program. The two most commonly asked questions that weekend revolved around what to plant, when to plant and where to plant?

We study food plot varieties through field trials and research throughout the U.S. Since 1978, we have found only a handful that really work. There are two seasons for food plots: cool and warm. Cool season plants are those planted as the days get shorter and temperatures begin to drop. All food plants have been developed over thousands of years from species we would today consider "weeds." Flowering plants also come in two categories. Some germinate in the fall, establish themselves, then just lay low through the winter, speed up growth as temperatures increase in the spring, flower, produce seed and either die back or go dormant. Warm season plants germinate in the early spring, grow vigorously through the summer, then flower and produce seed or fruit in the fall. It is obvious the cool season species tend to hang around longer than the warm season ones. Competition with other plants most often is not very high for cool season plants, while warm season species have to compete with other fast growing plants.

What this means to the landowner wanting an effective food plot program is the cool season plants offer longer availability and higher yields. When you plant a warm season crop, you have to deal with more weeds (most often grasses) and a shorter production period. In four decades of research, I never have found a warm season plant that can out-produce a cool season variety; the latter often producing three times more forage. Yet, there is a need for both types, since deer don't just eat in fall and winter! But, there is a difference between need and feasibility.

After four decades of study, we have concluded both cool and warm season varieties useful for food plots are limited to only a handful; mostly cereal grains and legumes. The cereal grains were first developed in Persia (now Iraq and Iran), an arid region of the world. These varieties were selectively bred from grasses to produce more and larger seeds, used for food. Barley and wheat were probably the first cereal grains, developed about 8,000-10,000 years ago. Oats did not come on the scene until about 2,000 years ago. About the same time, alfalfa (a legume) was developed, again in arid regions of the world. Although there are some species that do not belong to these two groups, such as chicory, we now are down to only two for the cool season. Of the cereal grains, every preference test we have conducted supports our conclusion cereal grain preference rankings are oats, wheat, rye, barley and "rye" grass; with rye grass being the least preferred of all grasses. Deer preference tests never fail to indicate the highest preference for oats, especially the forage varieties.

Among legumes, alfalfa always comes out first, followed by various varieties of clovers and cool season peas. Unfortunately, alfalfa has a limited application caused by preferred soils and climate, and we seldom recommend it as a consequence. Alfalfa is a desert or arid plant that "likes" neutral soils, and most soils are anything but neutral in pH. Clovers and peas, on the other hand, like a wider range of pH conditions and climates, mostly those with rainfall exceeding 25 inches annually.

All cool season varieties have to be established in the fall. Unfortunately, many landowners try to "jump the gun" in planting time and habitually plant their food plots the opening weekend of dove season (around the first of September); the absolute worst time to plant! There seldom is enough soil moisture or cool enough night temperatures to assure success. It is better to wait until late September to early October to plant. The worry is the crop will not be up in time for bow season, yet most cereal grains will germinate in less than a week and immediately are attractive to deer.

The great thing about cereal grains is they can stay in production for up to seven months (fall to spring). As warm weather arrives, cereal grains begin to elongate what will become a seed head, decreasing digestibility and preference. This exponential growth quickly out-strips the ability of deer to consume the growth. Grain heads produced then become good food for game birds and a host of species, including deer.

Legumes come in two varieties: annuals and perennials. Clovers such as white varieties are mostly perennials that may last several years under good management; yet, in areas with hot, dry summers they quickly succumb and lose their perennial advantage. Annual clovers such as the red varieties grow into the summer, but tend to flower and die back by August. Alfalfa is a perennial that tends to reduce vigor over a few short years. Alfalfa can stand more drought, but reducing production in such conditions.

The list of warm season varieties is quickly winnowed down a mere handful. Again, four decades of testing and research over the entire range of the whitetail have brought us to the conclusion cowpeas and soybeans in the South and soybeans in the North are our only choices. Yes, lablab is another candidate,

but is limited to arid regions and requires more cultivation and management skills to succeed. Warm season varieties generally are planted when soil temperatures reach at least 60° F at night. These are your choices, pure and simple.

Warm season plantings only work east of IH-35 and north of U.S. 90. The only exception is in the Rio Grande Valley, where cowpeas and lablab can be grown successfully in some cases. However, in any area where deer populations are high, you have a poor chance of success, unless you either plant large acreages (5-10%) of your property, or use electric or net wire fencing to protect your crop until it is established or to regulate use in a "rotation" grazing system. Net wire fencing is expensive, but our research on electric fencing is very encouraging. We commonly use an inexpensive three-wire design to protect summer crops. We have designed effective systems for strip grazing, rotation grazing and even forage banking using electric fences (see drdeer.com for more details).

We study food plot varieties through field trials and research throughout the U.S. Since 1978, we have found only a handful that really work. There are two seasons for food plots: cool and warm. Cool season plants are those planted as the days get shorter and temperatures begin to drop. All food plants have been developed over thousands of years from species we would today consider "weeds."

We also have developed a strategy for areas where there is adequate rainfall for warm season plantings that has revolutionized deer hunting. We plant corn, peas or soybeans with in electric fences in spring, then open the fences for our deer just prior to the hunting season. It is a bowhunter's dream!

So, what did we say to the man from Fredericksburg, Texas, who asked, "I have nothing but limestone rocks and thin soil, what do I plant?" If your land is west of IH-35 and south of U.S. 90, we see no need to plant anything but a cereal grain in the fall, preferably cold hardy, winter forage oats. A lot of landowners plant wheat, which grows well but has 40 percent less yield than oats and has lower preference by deer. A mistake commonly made by landowners is to plant a spring oat or an old variety of winter oat such as "Bob" as the fall planting. This is a mistake since these varieties freeze out at around 28° F. We *do not* plant any variety other than cereal grains in this region; sorry to tell you that, but it is the hard truth. Unless you can irrigate, you are wasting your money and effort. The cereal grain will have plenty of the three things deer need most—digestible energy, phosphorus and protein. Cost of such a planting, including site preparation, seed and fertilizer will be about $300 per acre. You can expect at least 4 tons of nutritious forage, making each pound cost you about four cents; compared to 25 cents per pound for protein pellets.



We told the fellow from Fredericksburg, he then could apply the appropriate fertilizer (according to soil test) to his native plants in early spring to increase quality and yield of his natural weeds and browse. Native plants such as honeysuckle, blackberries, dewberries, and green brier respond amazingly well to fertilization. The number one deficient element in most areas is phosphorus. Our research has proven fertilization, especially with triple super phosphate, will increase yield and extend use of native plants by deer.

To the east of IH-35 and north of U.S. 90, we recommend adding a legume such as clover to the fall mix; either as separate plots or in combination with the cereal grain. You need at least 30 in. annual rainfall to justify planting clover. We prefer a white clover on moist clay soils and red clover (*not* crimson) on clay and sandy loam soils. We always inoculate clover seed with beneficial bacteria before planting to increase growth and nitrogen fixation.

It is difficult to plant seed mixes, since each variety has to be planted at a specific depth. Cereal grains need to be planted about 2 inches deep, while clovers are planted at no more than a quarter inch depth. I have seen landowners plant oats and clover together, then disking the seed into the ground. They then come back and wonder where their clover crop is! It always is better to purchase pure seed and plant each according to specifications.

Finally, I practice what I refer to as "decision-based food plot management." This is how it works. For cool season plantings, I never plant before the last week of September. Even then, I determine whether or not I have enough soil moisture to plant. By "enough," I mean the soil is damp below two inches. If I do not have enough soil moisture, or if there is no assured rain within the next week, I *do not* plant until I do have soil moisture. If, by a month later I still do not have moisture, I do not plant. In the South this can go on until as late as January, which still allows me to obtain a good stand of cereal grain as a nutritional supplement. If the reason for planting is to draw deer for harvest, I just do not plant after October. I then have to rely on feed, rather than less expensive food plot forage. (I will point out here that oats have the remarkable ability to remain in the ground for over a year and still germinate, because unlike wheat the seeds are coated by a husk.)

The same decision-making process takes place in areas where warm season plantings are feasible. For cowpeas and soybeans, I plant when the soil temperature (as noted earlier) is at least 60° F, *and* I have adequate soil moisture. In most southern areas, this occurs in early April to early May. If there still is inadequate moisture a month later, I do not plant until there is. For cowpeas, we have been able to plant as late as mid-July and still get a good stand, *provided* the plots can be fenced. If they cannot, we simply do not for the warm season. That means you have to be ready to react to rainfall, by having your seed, fertilizer and equipment ready to go at a short notice.

The strategies discussed in this column work! We have used them for three decades with great success; at least in regard to saving time, money and frustration. There are years in which you simply should not plant, and will have to rely on feeding where legal. Whatever the cause, we are experiencing and probably will continue to experience uncertain climatic conditions for some time to come. The smart deer manager will develop ways to be adaptive to these uncertainties.

