

Applications for Controlling Annual Ryegrass –

Important Considerations for Quality Food Plot Management Programs

Annual ryegrass is a re-seeding cool-season grass with aggressive growth habits. If left uncontrolled, annual ryegrass will out-compete more desirable forages, reducing the quality of the food plot.

It is late September and rain and deer season (depending on which state you hunt in) are in the forecast. The time to plant has finally arrived!! You had your food plots limed the previous spring to allow adequate time to raise the soil pH for productive plots in the fall. Countless hours have been spent on your tractor fighting the late summer heat to create a quality seedbed in preparation for this fall's plantings. Fertilizer just set you back about three times as much this year than last season (for the same amount).

While daydreaming about the upcoming deer season, you broadcast the fertilizer followed by a mixture of wheat and oats and lightly disk them into the rich soil. Finally, you broadcast crimson and arrowleaf clovers and make a final pass with a cultipacker to ensure good seed-to-soil contact and a smooth, firm seedbed. As the afternoon fades and all of your equipment has been loaded and secured, you notice

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dark rain clouds approaching on the horizon...the timing couldn't be better. Surely you will have successful food plots this season with a combination of highly attractive and nutritious cereal grains and annual clovers...you've done everything right, right?

Throughout fall and winter, your food plots are green, lush, and appear to be doing well. After a long and intense deer season, the next time you see your food plots will likely be turkey season (at least that's how long it takes me to build up enough points with my wife to hunt again!). As you make your way across one of your favorite food plots in pursuit of a hot gobbler sounding off on the next ridge, you notice that very few of the high-quality forages you planted the previous fall exist. In fact, the entire field is almost completely covered with annual ryegrass...and you didn't even plant it!!

Unfortunately, this is a common scenario many food plot managers face... and it is even more common than realized. Many landowners and deer managers just don't know what they're looking for when evaluating the success of their plantings. In fact, I have visited very few properties in the South, where food plots are actively planted and managed for deer and other wildlife, that didn't have serious problems with annual ryegrass. Hopefully the information below will help you realize the negative impacts annual ryegrass can cause in a quality food plot program and assist with making careful decisions when establishing and managing successful food plots on your property.

What is Ryegrass?

First, to be clear, I'm referring to "ryegrass" and not "rye" as many hunters and food plot managers refer to these synonymously. Rye should not be confused with ryegrass as it is a cereal grain and is not considered a pest when included in wildlife food plots. Annual ryegrass was introduced from Europe and is considered a bunchgrass. The

leaves of ryegrass are shiny, smooth, slender, and dark green. However, without a trained eye, it can be difficult to differentiate ryegrass from cereal grains during the fall and winter. Annual ryegrass generally reaches 2-3 feet tall at maturity, depending on soil fertility. Ryegrass is tolerant of a wide range of conditions (e.g., wet soils, low-moderate pH, low soil fertility), which is one of the primary reasons it became popular as a deer forage as it requires little to no effort to establish. It also is an aggressive re-seeding grass and can re-establish itself naturally each year if allowed to mature and produce seed. The easiest time to identify ryegrass is when it matures and produces a seed head, which is considered a "spike". Annual ryegrass usually has 9-15+ seeds/spikelets on the seed head and the seed has "awns", which are small, hair-like structures.

Although ryegrass is easy to establish and is consumed regularly by deer and other wildlife, the costs of using this forage in a quality food plot program far outweigh the benefits. In fact, I can't think of a single situation where annual ryegrass should be favored over other forages when the primary goal is to provide deer and other wildlife with productive, attractive, and nutritious food plots.

Problems Associated with Annual Ryegrass

One of the primary disadvantages of planting annual ryegrass in wildlife food plots is its ability to re-seed itself year after year and out-compete more desirable forages that are planted. If annual ryegrass is planted in the fall and allowed to seed out in the spring/early summer, it will develop naturally each fall as food plots are prepared for planting. The density of ryegrass within a field can vary depending on site characteristics, but typically becomes worse each successive year because more and more seed accumulates within the seed bank.

Another undesirable quality of ryegrass is its level of attraction to deer. Although some may argue that ryegrass is a "choice" food source that deer prefer, many forage selection and preference studies have shown otherwise. Ryegrass is not a preferred food source of deer when compared side-by-side to other forages. Furthermore, the amount of time ryegrass provides suitable forage is short-lived compared to many other plantings, as nutritional quality and palatability rapidly declines in late winter/early spring as plants mature. A limited source of attraction and nutrition is not a desirable characteristic of a quality deer forage.

Annual ryegrass also can reduce the quality of food plots for wild turkeys and quail as it can completely take over the plot, reducing food diversity and insect abundance and availability. Insects and other invertebrates are a primary component in the diets of turkey poults and quail chicks. Furthermore, in extreme cases, annual ryegrass can become so dense within a food plot, turkey poults are unable to penetrate the vegetation in search of grasshoppers, spiders, leafhoppers, and other invertebrates.

Annual ryegrass not only adversely affects the quality of cool-season forage plots, it also makes preparing for summer plantings more difficult. If you have ever tried to mow and/or disk a food plot containing a dense stand of ryegrass, you know what I'm talking about. When ryegrass matures (about the time summer plots should be prepared), the vegetative parts (i.e., stem, leaves) are very tough, making conventional field preparation techniques (disking, tilling, mowing) less effective and efficient.

Techniques for Controlling Annual Ryegrass

First and foremost, a soil test should be conducted to determine soil pH and nutrient levels within your food plots. It is critical that food plots are amended

with the recommended amounts of lime and fertilizer to ensure optimum soil pH and fertility. Doing so will allow your planted forages to grow and develop rapidly, giving them a better chance of competing with annual ryegrass and other potential weeds.

Chemical Control – Because landowners and hunters typically plant seed mixtures containing cereal grains (e.g., wheat, oats) and legumes (e.g., various clovers, winter peas), controlling annual ryegrass within food plots containing these mixtures can be tricky as herbicide options are limited. Although many herbicides exist that effectively control ryegrass, including wheat and/or oats within the seed mixture makes it impossible to use a grass-selective herbicide (e.g., Poast®, Arrest®, Select®) to kill ryegrass and not harm wheat or oats. Considering this, if ryegrass is known to be a problem, one strategy is to only plant a mixture of broadleaf forages within your plots (i.e., crimson clover, arrowleaf clover, ladino clover, durana

clover, winter peas, chicory, etc.) to allow the use of a grass-selective herbicide to kill ryegrass but not harm planted forages. When using this strategy, ryegrass should be sprayed in the fall (with a grass-selective herbicide of your choice and applied at the appropriate rate) when it reaches 3-4 inches high.

Alternatively, if you wish to include wheat (in conjunction with broadleaf forages – clover, etc.) in your fall plots for quick germination and attraction, the herbicide Hoelon 3EC® can be used to control ryegrass. This herbicide is used extensively by wheat farmers to control annual ryegrass and other annual grass weeds in wheat fields.

However, annual ryegrass may develop resistance to Hoelon 3EC® over time. Hoelon 3EC® does not harm wheat or broadleaf forages (clovers, chicory, winter peas) but will damage or kill oats if they are planted. Thus, if using this technique, do not include oats or other cereal grains within the seed mixture...use wheat instead.

When attempting to establish perennial clover in fields where ryegrass is problematic, chemical control is almost always necessary for successful establishment and plot longevity. Because ryegrass establishes very quickly following soil disturbance and perennial clovers are very slow to establish, ryegrass will undoubtedly out-compete clovers and reduce the quality of the plot. If this is the case, simply apply a grass-selective herbicide (e.g., Poast®, Select®, Arrest®) in the fall when ryegrass reaches 3-4 inches in height to give clover a fighting chance to establish successfully.

Note – be sure to carefully read and follow all herbicide labels before use.

Mechanical Control – For landowners and hunters who do not own or have access to spraying equipment, one technique that can minimize ryegrass competition without the use of herbicides is repeat-tillage. Repeated tillage will kill ryegrass that germinated from the previous tillage and reduce the amount of

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ryegrass seed available to germinate thereafter. However, this process must begin at least one month prior to planting.

When using this technique, simply disk/till your plots approximately one month prior to your desired planting date (typically late August/early September depending on your geographic location) to stimulate natural germination of ryegrass from seed contained within the seedbank. A couple weeks later (or when ryegrass has become established), disk the plots again to kill ryegrass that germinated from the initial disking. Next, wait a couple more weeks until planting conditions are favorable (i.e., rain is in the forecast, adequate soil moisture) and apply the appropriate amount of fertilizer (based on a soil test) and disk the fields again to incorporate fertilizer into the soil and smooth the planting surface to prepare for planting. This will kill ryegrass that germinated from the second disking. Next, broadcast large seeds (wheat, oats, winter peas, etc.) and *lightly* disk (about 1 inch) to cover the seed. Finally, broadcast small clovers and then cultipack. If you don't have a cultipacker, simply allow rainfall to work the seed into the soil – do not disk clover seed into the soil. **Note** - I have found this technique to be most effective using **annual crops** (i.e., wheat, oats, crimson clover, arrowleaf clover, berseem clover, etc.) that are quick to germinate and establish to “get ahead” of ryegrass when it comes back. This strategy is not as effective when planting perennial forages (white clovers, etc.) because perennials are slower to establish, giving ryegrass enough time to re-establish and take over the plot. Be prepared to use herbicides to establish perennial clover fields successfully (see recommendation above).

Another effective technique to minimize ryegrass competition within your fall plots is to plant your fields using a no-till drill. If you do not own or have access to a no-till drill, they can be



The photos above were taken in March 2008 of two different food plots on the same property, both planted with the same mixture - wheat, oats, crimson clover, and arrowleaf clover. However, the field on top had been planted in annual ryegrass sometime in the past. Notice that ryegrass germinated naturally from seed within the seedbank and is about to take over the entire plot, choking out valuable clover that would otherwise be available for a few more months. The field below was a newly established plot where ryegrass had never been planted. Notice the absence of ryegrass and the abundance of clover with sparse wheat and oats!!

rented from many local co-ops or county NRCS offices. No-till drilling minimizes soil disturbance, thus, reducing the ability for ryegrass to germinate. This technique also conserves soil moisture, which is important during

drought conditions or in areas that receive low rainfall.

It is also important to note that annual ryegrass (and other weeds) can become inadvertently established in food plots and other areas on your

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The field above was planted in perennial clover in the fall of 2007. Shown here is the same field the following spring - notice the field was completely taken over with annual ryegrass. Although ryegrass was not planted, it had been planted sometime in the past and germinated naturally from seed within the seedbank.

property from your equipment (e.g., bush hog, disk, etc.). Weed seed and thatch can accumulate on equipment and become established in other areas when traveling throughout the property. Thus, to reduce the chance of spreading ryegrass and other weeds, thoroughly clean your tractor and implements before taking them to other parts of the property.

Conclusion

Unfortunately, despite known problems associated with annual ryegrass, it continues to be a recommended deer forage by many deer biologists and it continues to be included in some commercial seed mixtures. Thus, if planting commercial seed blends, be sure to check the contents on the seed tag before planting if you want to avoid dealing with the issues listed above. If you don't already have problems with annual ryegrass within your food plots, you're lucky. I don't recommend planting it in food plots managed for wildlife. Too many other desirable and more practical options exist. If you are one of many who do experience problems, hopefully the above mentioned management techniques can be applied on your property to control annual ryegrass competition and improve the quality of your food plots. Doing so will allow the time, money, and effort you've spent managing your food plots to provide more benefit to deer, turkeys, quail, rabbits, and other wildlife on your property.

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