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Using Cool-Season Annual Grasses for Grazing Livestock

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Introduction

Winter annuals are an important part of Arkansas forage production. They decrease dependence on stored forages such as hay and silage and decrease purchased feed expense by providing green grass for grazing in winter months. When interseeded into dormant warm-season grass pastures, cool-season annuals produce forage on acreage that would be nonproductive in the winter months. Lastly, wheat pastures have the potential to be used for both grazing and grain production if managed properly. For more information on managing cool-season annual grasses for hay and silage production, refer to University of Arkansas fact sheet FSA3063, *Using Cool-Season Annual Grasses for Hay and Silage*.

Most liveweight gains in Arkansas pastures are made before July 1st on winter annual pastures. Cool-season annual grasses are extremely high in nutritive quality from the early fall through the spring, enabling growing calves to gain bodyweight at rates of more than 2 to 2.5 pounds per day. A disadvantage of cool-season annuals is that cows may become too fat for optimal calving and rebreeding performance if allowed unlimited intake of these forages. Under limit-grazing, cows are kept in a dry-lot but are allowed limited access to winter annual pasture several times per week. At the University of Arkansas Southwest Research and Extension Center (SWREC) near Hope, Arkansas, limit-grazing of beef cows and calves on 0.2 acre of wheat/rye/ryegrass per head for two days per week produced the same cow, calf and rebreeding performance as cows fed unlimited hay plus a supplement, but limit-grazed cows consumed 30% less hay during the winter feeding period. In creep grazing systems, calves are allowed unlimited access to excellent pasture via creep gates or a single electric wire set high enough so that they can walk under it but cows cannot.

Planning Cool-season Annual Plantings on the Farm

Very rarely will it make economic or agronomic sense to plant the whole farm in cool-season annual grasses despite their nutritional benefits and productivity. Research conducted at the University of Arkansas Southwest Research and Extension Center (SWREC) near Hope, Arkansas suggested that farms with warm-season perennial forage bases could stockpile warm-season grasses on ¼ acreage and interseed ¼ of acreage in cool-season annuals. These species can also complement row crop operations when integrated between cash

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crops. Making sure that cool-season annuals can be grazed from late fall through early spring in well-fenced and watered portions of the farm is critical to reaping the full benefits of these plantings.

Small grains—wheat, cereal rye, triticale, and oats—can be used as part of pasture renovation programs. These species make excellent smother crops against the weed seedbank in a spray-smother-spray system. Weaker sods that are due for full stand replacement can be eliminated with a 2 qt per acre rate of 41% glyphosate and then planted to these annuals to help offset losses in forage production.

Establishment

Cool-season annual pastures are typically planted in late summer or early fall as early as local conditions allow, though repeated fall droughts can make late summer plantings risky. Conventionally-tilled or no-tilled crop fields should be planted by the first week of September for fall pasture. Calves may be stocked at 1 to 1.5 calves per acre by the first of November in well-managed small grain fields. When interseeded into a warm-season grass sod, they must be planted late September or early October to decrease competition between existing warm-season sods and cool-season annual seedlings. Often calves may be placed on interseeded pastures by early to mid-December at 1.5 to 2 acres per calf.

Dedicated Crop Fields

Planting wheat and other cool-season annuals for grazing should occur in early September. Wheat has been planted in dedicated crop fields at the Livestock and Forestry Research Station (LFRS) in Batesville during the first week of September every year since 1996. This planting date translates into grazing opportunities starting in late October or early November in most years.

Methods for establishing cool-season annuals may include preparing a clean, conventional seedbed by deep-tilling the soil prior to planting, no-till drilling seed into an undisturbed seedbed or broadcasting seed using a spreader or aerial application into a lightly disturbed seedbed. For more information on planting techniques, refer to FSA3164, *Tips & Techniques for Forage Plantings*. However, producer decisions such as tillage method and planting date can have a large impact on establishment, and subsequently on animal performance. No-till has become more favored because of the reduction in time requirements for field preparation, fuel and labor costs and required equipment, as well as soil conservation. Additional benefits of no-till for establishment of small grain pastures include fewer planting delays due to wet fields and reduced bogging by livestock.

Planting depth should be ~ 1 inch for small grain species but should be much shallower (~ ¼ to ½ inch) for annual ryegrass. For more information on the relative advantages and disadvantages of conventional, reduced and no-till establishment of small grain pastures, refer to *Impact of Conservation Tillage Practices on Winter Wheat Production for Grazing Stocker Cattle*.

Interseeding Into Warm-Season Pastures

Interseeding cool-season annuals into a warm-season perennial sod, such as bermudagrass or bahiagrass, can provide some advantages and disadvantages to the operation. High-quality forage can be grown on a site that will not be used until the following summer. Pastures can be established using a no-till drill to cut through the sod and place the seed into the soil or by lightly disking the pasture to disturb the sod, spreading the seed with a conventional fertilizer spreader and then harrowing to cover the seed. The disadvantage of the no-till drilling method is the requirement of the specialized drill. The disk and spread method has the disadvantages of disrupting the sod, which may cause fields to be rough and uneven, and the lack of ideal seed placement.

Competition from warm-season sods that have not yet gone dormant is the most serious problem for early sod-seeding of winter annuals in Arkansas. These warm-season grasses must be controlled in some way prior to planting winter annuals. Often this sod suppression will require herbicide and/or targeted grazing prior to planting. Bermudagrass pastures can be sprayed with a low dose of glyphosate (1 pint of 41% glyphosate per acre) to force bermudagrass into dormancy. This will allow seeding of cool-season annuals in early to mid-September, with little risk of competing warm-season grasses choking out newly emerged seedlings. Research conducted from 1998-2000 at Monticello, AR where seed was broadcast into disked sods produced more variable seasonal forage production than is often seen where the existing sod is chemically suppressed.

Research conducted at SWREC during the fall and winter of 2005 and 2006 compared planting wheat and annual ryegrass in mid-September or mid-October with and without an accompanying application of glyphosate at planting (Table 1). Earlier planting led to earlier grazing and stands supported better forage and animal production when glyphosate was sprayed to reduce competition.

In conclusion, earlier planting along with reduced competition by spraying warm-season grasses before interseeding can increase carrying capacity, animal bodyweight gain and net return of interseeded cool-season annual pasture.

Warm-season pastures should be grazed or hayed to a 3- to 4-inch stubble height. Plant 100 to 120 pounds per acre of small grain and 20 pounds per acre annual ryegrass when the warm-season grass growth slows. This is usually early October in northern Arkansas and mid-October in southern Arkansas, but the recommended planting date changes due to conditions in the local area each year. If growth of bermudagrass or other warm-season grasses has not slowed, then rains that cause seedling cool-season grasses to emerge will also stimulate warm-season grasses to grow and choke out the seedlings.

Plant Characteristics and Nutritive Quality

Cool-season annual grass forages are extremely high in CP (> 25%) and low in fiber (40 to 49% neutral detergent fiber (NDF) and 19 to 29% acid detergent fiber (ADF), during the fall and early spring (Table 2). During the late fall and winter there are slight decreases in crude protein (CP) and increases in fiber. This is associated with increased age of leaves as forage growth slows during the winter months. When rapid forage regrowth resumes during the early spring, there is an uptick in forage protein and a slight decline in fiber content. As the plants begin to mature in April and May, forage protein decreases precipitously and fiber content increases dramatically. Even though increases in fiber concentration (increasing to over 50% NDF) and reductions in CP concentrations (decreasing to 20%) were noted during April and May, CP content and digestibility of the forages were greater than animal requirements for a 550-pound growing steer to gain in excess of 2.5 pounds per day until the end of the spring grazing season each year. This indicates that this forage provides a nutrient-dense diet for grazing cattle, and any differences in animal performance are likely due to restrictions in forage availability.

Mineral Content

Mineral imbalances and deficiencies can be easily rectified by feeding a balanced mineral supplement. The calcium level of these forages is low and phosphorus is generally adequate, so a low phosphorus mineral is called for. In heavily fertilized pastures with high levels of potassium, magnesium levels can be too low for lactating cows. A high-magnesium mineral supplement should be provided from a month

ITEM	PLANTING DATE			
	SEPTEMBER		OCTOBER	
	No Spray	Glyphosate	No Spray	Glyphosate
Grazing start	January 18	January 18	February 15	February 15
Winter ADG, lb/d	1.95	2.49	1.67	2.20
Spring ADG, lb/d	2.40	2.30	2.07	2.44
Total gain/calf, lb	244	267	163	197
Calf grazing days/acre	176	220	182	173
Bodyweight gain/acre	392	539	385	402

Table 1. Effects of glyphosate application on warm-season grass sod and planting date of interseeded cool-season annuals on forage production and performance of grazing beef calves at Hope, Arkansas, during the 2005-2006 production year.

MONTH	Crude Protein	Neutral Detergent Fiber	Acid Detergent Fiber	Dry Matter Digestibility
November	30.7	39.6	18.1	78.8
December	24.9	39.8	19.2	78.7
January	24.6	46.4	21.1	74.3
February	25.2	46.1	21.8	74.5
March	26.4	44.5	21.5	75.5
April	21.0	50.9	28.5	71.2
May	19.3	57.2	385	402

Table 2. Forage nutritive content of cool-season annual grasses from research over 10 years (2003 to 2013) at the University of Arkansas Southwest Research and Extension Center in Hope, Arkansas, and Livestock and Forestry Research Station near Batesville, Arkansas.

prior to calving through the rest of the spring.

Forage mineral content was analyzed in research conducted at LFRS over the 2010-2011 and 2011-2012 production years. Wheat forage in 2010-2011 was adequate to borderline deficient in Ca yet was deficient in Ca in 2011-2012. Phosphorus content was adequate during both years. In 2010-2011 the Ca:P ratio ranged between 1.4 to 2.3, yet the Ca:P ratio in 2011-2012 indicates an imbalanced state, ranging between 0.92 to1.1. Magnesium content of wheat forage was above the suggested requirement value and within the acceptable range set on all sampling dates in both years. But, the potassium content of the wheat forage was above requirements and at some sampling points approached or exceeded the maximum tolerable level of 3 % Thus, the ratio of K in relation to Ca and Mg, calculated by K/(Ca+Mg), indicates an imbalanced state in wheat forage and for all sampling dates exceeded the 2.2 ratio that indicates grass tetany potential. While this has been found to be an issue for lactating cows, the importance of this ratio for growing steer calves has not been established. This indicates that growing cattle on wheat pasture require mineral supplementation that is low in P in relation to Ca and do not necessarily need to be supplied with additional K or Mg.

The level of Cu supplied by the wheat forage was analyzed to be within the adequate range (4 to 10 ppm) at all sampling points during both years of the experiment. Zn content was near or below the 30 ppm suggested level during the fall and early spring but was generally adequate during the late spring grazeout period.

Species and Varieties

Selecting the appropriate cool-season annual grass for the farm or ranch involves the commercial availability of seed, labor and equipment; availability of when to plant; and weather conditions in the fall or late-winter. The seed market for these species has a higher volume than many other forage species, and options can be overwhelming. Regardless of the selected species or variety, producers should make sure to compare seed quality when shopping. For more information, refer to FSA3163, *How to Read a Seed Tag*. As mentioned above, pairing a small grain with annual ryegrass can extend the grazing season of a planting without added field operations.

Demonstrations around the state and a 2021-2024 study at Arkansas State University in Jonesboro suggest that planting period will influence species and varietal selection. Options are limited due to the tradeoffs of cold hardiness and vernalization requirements. Late-summer and fall plantings (Late August to November) can involve any of the following species listed, though winter oats should be planted. Late winter plantings (Late February to mid-March) should be limited to annual ryegrass and spring oats.

Research conducted at LFRS and SWREC comparing the small grain species for stocker cattle production indicates Arkansas producers can utilize soft red winter wheat, oats, ryegrass or combinations of rye and ryegrass or wheat and ryegrass with little difference in cattle performance and economic efficiency. Utilization of oats and rye alone or combinations of small grains (the wheat and rye or wheat, rye and ryegrass combinations) did not result in superior animal performance or profitability over the time of this study. The choice of which cool-season annual combination to interseed into bermudagrass or bahiagrass sod is dependent on climatic conditions. However, interseeding rye or wheat is generally superior in animal performance and profitability to other small grains.

In southern Arkansas, there appears to be little advantage in utilization of oats in the interseeding program if no fall grazing is desired, and triticale produce comparable grazing compared to planting annual ryegrass alone. Annual ryegrass is a necessary addition when interseeding cool-season annuals into bermudagrass sod for grazing programs to produce the highest possible animal performance, bodyweight gain and profitability. In crop fields, planting ryegrass alone and wheat alone or combinations of rye with ryegrass or wheat with ryegrass were the most profitable alternatives.

Wheat

Winter wheat is the most widely grown winter annual in the U.S. when accounting for grain and grazing acreage. Most wheat grown in Arkansas is soft red winter wheat. It is dependable, high in quality, adapted to a range of climates and soils and tolerant of grazing. The seed cost per acre to plant wheat is consistently among the lowest of all the winter annual forages, which contributes a great deal to its popularity. Wheat grows at temperatures between 38˚F and 77˚F. In Arkansas, most sod-seeded wheat pastures are used solely for grazing and potentially provide pasture from January to April, with peak forage availability in March. Once wheat has begun to head, regrowth potential is minimal.

Wheat also has potential as a dual-purpose crop where grown for grain. If cattle are removed from soft red winter wheat pastures at the time wheat

stems begin to elongate (jointing), a grain crop can be harvested with little effect on grain yield. Dual-purpose wheat may provide grazing as early as November when planted early under ideal conditions. Please refer to FSA3130, *Dual-Purpose Wheat Systems for Grazing and Grain or Hay Production in Arkansas*, for more information.

Almost all wheat varieties were developed for maximum grain yield under a specific combination of environmental factors to fit specific areas of the U.S. The most important consideration when selecting a soft red wheat variety should be adaptation to local conditions. Arkansas Small-Grain Cultivar Performance Tests are published annually by the Arkansas Agricultural Experiment Stations. Useful information in the report includes disease ratings in different parts of the state (low disease ratings are desirable for both forage and grain production) and date of heading (which can vary among varieties by up to three weeks at a location).

Cereal Rye

Cereal rye is the most cold-tolerant of the cool-season annual species. Rye is frequently seen in winter pastures in southern and western Arkansas. Rye is unique among the small grains in that it can reseed itself to some extent. This makes it unwanted for winter grazing where a grain crop will also be harvested, because volunteer rye is difficult to remove from wheat grain crops. However, rye is an excellent winter annual choice when all forage will be grazed. It on average makes more forage in late fall, winter and early spring than wheat, oats or annual ryegrass. Rye is the earliest to head of all the winter annuals but will make some regrowth if not grazed too close and often. When given a choice, cattle find rye to be slightly less palatable than other winter annuals. Rye is more adapted to better drained soils and lower pH than other small grains. Rye seed is usually more expensive than wheat, but since rye often yields more forage, it is frequently cost competitive.

Some rye varieties were developed specifically for forage. These include 'Koolgrazer,' 'Elbon,' 'Maton' and 'Wintergrazer 70.' Cattle producers should avoid planting rye varieties that were developed for grain production.

Oats

Oats are the least cold-tolerant of the cool-season annual species. Oats are not as widely used as wheat or rye but have some excellent characteristics that make them popular on the eastern edge of Arkansas cattle country. Oat forage is extremely palatable to livestock. Compared to wheat, oats make more fall growth, head out slightly later in spring and typically yield slightly less. The price of oat seed is generally intermediate between wheat and rye. The main disadvantage of oats is lack of cold tolerance, and a severe winter poses the risk of extensive stand loss in any part of Arkansas. Oats are also more susceptible to leaf rusts than wheat or rye, especially in southern Arkansas.

The Arkansas Small-Grain Cultivar Performance Tests report have contained winterkill and rust rating information for oat varieties that were evaluated for grain production. 'Ozark' and 'Bob' are time-tested varieties for forage throughout the state, though 'Jerry' was a promising spring oat in plantings from 2021-2024. Please refer to FSA3151R, *Planting Oats for Forage*, for more information.

Triticale

Triticale was developed by crossing wheat with rye. It retains the high palatability of wheat with the vigor of rye, has produced yields similar to rye in Arkansas forage tests and has an intermediate heading date. It is not as cold-tolerant as rye. Seed is usually more expensive than rye and can be difficult to obtain. If seed can be obtained at a price near that of rye seed, triticale may be a good option.

Annual Ryegrass

Annual ryegrass is one of the most popular annual forages planted across the southern United States because seed is widely available and cost-effective. Annual ryegrass provides a long period of high-quality forage growth in the late spring. This grass is later to mature than small grains, reaching peak production in early May and often producing some forage well into June. Ryegrass will tolerate wetter soils than wheat or oats and is more tolerant of poor fertility than the small grains. Annual ryegrass is the best winter annual for emergency plantings. It may succeed when planted as late as December in south Arkansas, although the risk of frost damage is higher. Ryegrass can also be planted from late January to early February as an emergency spring forage, though plantings between late February and mid-March are less risky. The seed cost to plant ryegrass is usually cheaper than planting wheat or other small grains, making it a very economical choice.

The key factor when selecting a ryegrass variety for regions of Arkansas is cold tolerance. Leaf rust is not usually a serious problem on ryegrass in Arkansas, but varieties do differ in resistance to rust if this is a local problem. There is some variability

in heading date among varieties. 'Marshall' is the time-tested variety throughout the state, and its performance is still hard to beat. 'Nelson' has become commercially popular in south Arkansas. Other varieties that can perform well throughout the state are 'Jackson,' Surrey' and 'Rustmaster.' In southern regions, 'Gulf,' 'Multimo,' 'Tetrablend 444' and 'Florida 80' can be used, but these varieties lack enough cold tolerance for northern regions. There are many new varieties of annual ryegrass that have performed as well as 'Marshall' in forage tests in neighboring states but have not yet been widely tested by actual use in Arkansas. These promising new varieties include 'Big Daddy,' Stampede,' 'Passerel,' 'Ribeye,' 'Rio,' 'Winter Hawk,' and 'Striker'.

Forage Yield and Setting Stocking Rates

The forage production of cool-season annual is much lower in the fall and winter and then increases in the spring. Thus, stocking rates are necessarily much less in the fall and winter from early November to late February (0.5 to 1 calf per acre) than in the spring from late February to early May (2 to 3 calves per acre). Stocking rate is a fundamental variable for managing pastures, and there is a distinct relationship between stocking rate and animal performance for each forage type. Research from Oklahoma indicates that steers' dry matter intake and thus performance is limited on wheat pasture that has less than 1,100 pounds of forage dry matter per acre. Thus, pastures should not be stocked with livestock until forage production has at least reached this level.

In order to determine the forage allowance that would result in the optimal stocking rate for fall and winter grazing of cool-season annual pastures, the wheat forage production and steer performance from 10 years of experiments at SWREC and LFRS were used to determine the response of average daily gain (ADG) to forage allowance (pounds of forage DM per pound of calf bodyweight). The response of ADG to the initial forage allowance indicates that a maximum ADG of 2.7 pounds per day could be expected at 5.0 pounds forage DM per pound of initial calf bodyweight, and ADG of 2 pounds per day could be expected at an initial forage allowance of approximately 2.4 pounds of forage DM per pound of initial calf bodyweight (Figure 1).

When determining the stocking rate for calves being placed on cool-season annual pasture, care should be taken to ensure that forage growth has at least reached 900 to 1,000 pounds of forage dry matter per acre. Additionally, the stocking rate should be set so that animal production goals are met. Referring to Figure 1, if gains of at least 2 pounds per day are desired, then calves should be allowed at least 2.4 pounds of forage DM per pound of animal bodyweight. Therefore, if 500-pound calves are to be placed on cool-season annual pasture, then it would require approximately 1.2 acres per calf of pastures containing 1,000 pounds of forage DM per acre. Therefore, to reach the goal of 1,100 pounds of forage DM per acre, pastures should not be stocked until they reach at least 5-6 inches in height and removed before stubble approaches 3-4 inches.

Figure 1. Average Daily Gain vs. Initial Forage Availability.

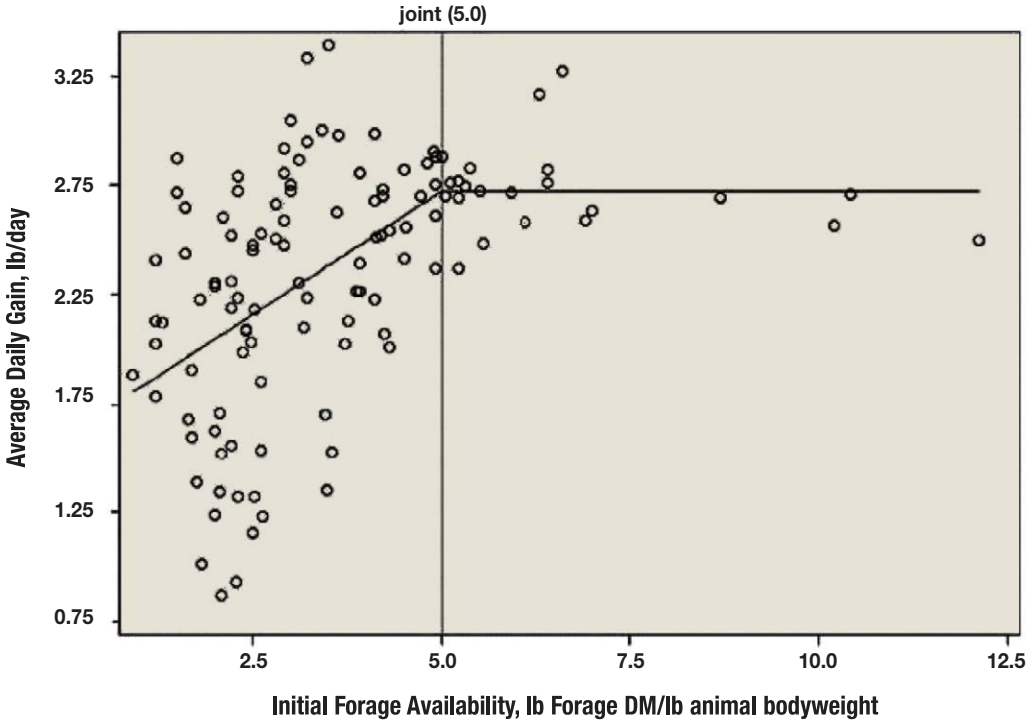

Figure 2. Forage DM Yield per Acre of Cool-Season Annual Grasses Planted at the University of Arkansas SWREC and LFRS During the Fall of 2011.

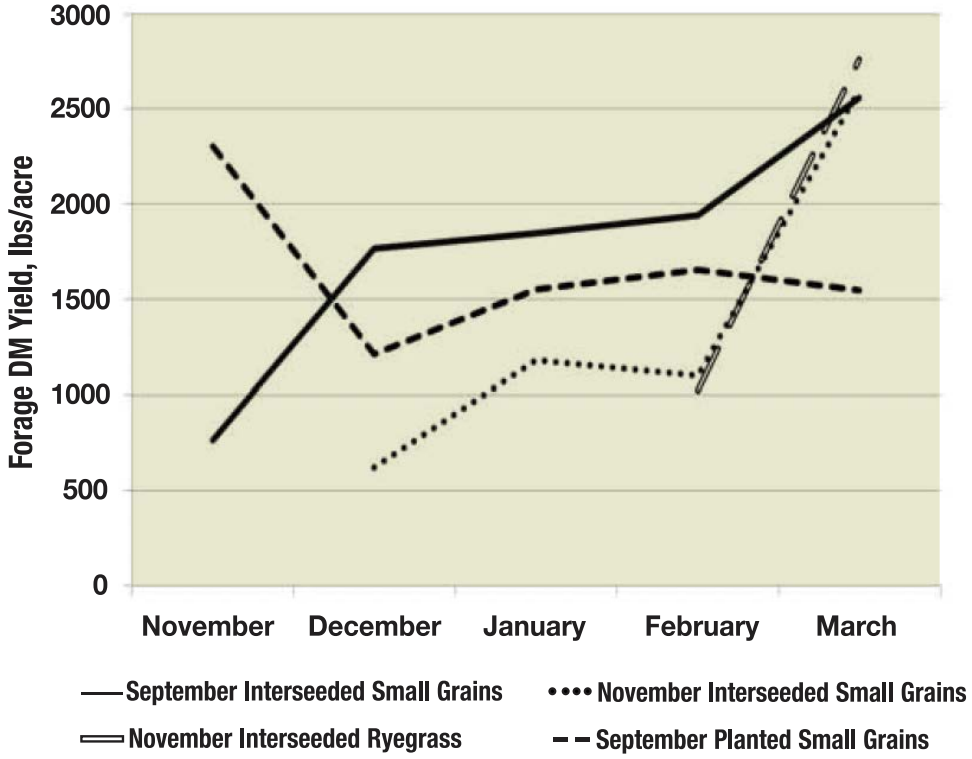

Figure 2 shows the forage yield of cool-season annual pasture planted at LFRS and SWREC in the fall of 2011. Crop fields at LFRS were planted during the first week of September. These fields were planted to wheat using either conventional clean tillage methods or no-till. By November these pastures produced an average of 2,250 pounds of forage DM per acre. Compare these yields to that of small grains (wheat or cereal rye mixed with ryegrass) interseeded into warm-season grass sod from mid-September to mid-October. These fields only produced about 750 pounds of forage DM per acre by November and were not ready to be stocked with calves until December. When interseeding was conducted in November (which incidentally was the planting date if a producer was to wait to plant in ideal conditions following a rain), stocking was delayed until January. And finally, if only rye grass was planted at the November planting date, stocking was delayed until February. This is data from only one year, but it is an excellent example of how seemingly short delays in planting can have large impacts on forage growth and subsequent animal grazing.

Historical research at the SWREC confirms that management of ryegrass is critical to preventing excessive delay of bermudagrass development. Pastures should be stocked heavily enough in April and May or mechanically harvested to prevent formation of a dense canopy of headed-out ryegrass that will shade the understory warm-season grass and delay its growth. Otherwise, forage may temporarily be in short supply during the transition period from ryegrass to warm-season grass.

Fertility

Cool-season annuals require adequate soil fertility to meet animal needs. They can often showcase where pasture fertility is less than ideal (Figure 3). Soil testing should be done well in advance of planting. Soil test recommendations should be coded to 210—Winter Annuals for these pastures. Pastures where winter annuals will be grown should be maintained at soil pH above 6.0 for best productivity. Warm-season grass pastures (bermudagrass or bahiagrass) intended for winter annual production should not be fertilized with nitrogen after August because this will delay the onset of dormancy and encourage too much fall warm-season grass growth. Nitrogen application for sod-seeded winter annuals should be delayed (October in the north, November in the south) to ensure the nitrogen is used exclusively by the annual forage.

Phosphorus and potassium can be applied at planting as indicated by soil testing or can be applied with the nitrogen. For small grains, a second nitrogen application should be made when forage begins to joint (usually in February). If annual ryegrass is being used, a third split application of nitrogen in April gives that grass a boost in productivity.

Winter annuals can easily use 50 pounds of actual N per acre at each fertilization (~150 pounds per acre ammonium nitrate or ~100 pounds per acre urea).

Pest Control

Herbicide sod suppression prior to planting can help to reduce the initial pressure of common winter weeds in the stand. Control of common broadleaf weeds (buttercup, henbit, chickweeds) in winter annuals is easily accomplished using 2,4-D. The most effective control with the least amount of chemical is obtained by spraying when weeds are small and weather is warm. February to early March works well in most areas. Good fertility promotes a thick, healthy stand of annual grass that competes well with weeds, as well as helps plants to resist disease and insect pressure.

Disease problems such as leaf rust, powdery mildew, barley yellow dwarf virus, rhizoctonia and helminthosporium can be minimized by late planting, using resistant varieties and using fungicide-treated seed. Homegrown grain from diseased stands should not be used for seed.

The insect most likely to cause problems in winter annual stands grown for forage is the armyworm (both the true armyworm and fall armyworm species). Fall armyworms can destroy a seedling stand of winter annuals in a single day if infestations are heavy. Seed lings will not recover unless at least 4 inches of shoot remains. Risk is higher for early-planted stands since fall armyworm activity decreases as weather gets colder. Stands should be sprayed if there are more than 1-2 armyworms per square foot. Always follow label instructions for grazing withdrawal periods. For more information regarding product pesticide use, refer to University of Arkansas miscellaneous publication MP144, *Insecticide Recommendations for Arkansas*.

Bloat

The disadvantages of cool-season annuals are few and easily controlled with management and nutrition. These forages can be bloat-provocative when forage is lush. Bloat is caused when the rapidly degradable soluble protein and sugars are released from the plant cell. These can cause a stable matrix to form on the top of the mat of rumen contents.

Figure 3. Annual ryegrass responding to the high fertility of a dung deposit within a low fertility pasture in January 2026. Photo credit: Dr. Jonathan Kubesch.

As fermentation gases pass through this matrix, it causes a foam to form that is not easily disrupted by ruminal contractions. Calcium deficiencies can be a contributing factor in bloat as ruminal contractions may be less frequent and weaker.

Bloat prevention begins with risk mitigation practices. Livestock should be acclimated gradually to cool-season annual pastures. Free-choice hay should be offered in the first days on these stands and the herd or flock should not go into these pastures on an empty stomach.

The incidence and severity of bloat is easily reduced by providing a supplement containing Rumensin (monensin sodium, Elanco Animal Health). If and when bloat is observed, Bloat Guard (poloxalene) supplements can be provided as a treatment. Poloxalene has not been shown to add performance and is typically more expensive to supplement, therefore it is recommended for use during bloat events and not continuously throughout the grazing period. This provides the benefits of improved rate of gain of about ¼ pound per day for grazing stocker calves supplied Rumensin and provides an avenue to rapidly respond when bloat is present. Both Rumensin and poloxalene are labeled for self-feeding to growing cattle. Other ionophores can be used to improve animal performance, but only Rumensin has been shown in research settings to decrease the incidence and severity of wheat pasture bloat.

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