

## Selecting Winter Annuals for Emergency Fall and Winter Pasture

John Jennings, Extension Forages

Kenny Simon, Program Associate – Forages

Jason Kelley, Extension Wheat and Feed Grains

Paul Beck, Extension Forages - SWREC

The drought effects will be felt long after any normal rainfall arrives. Producers needing to provide quick grazing will soon be planting winter annual forages such as annual ryegrass, wheat, and cereal rye. Variety selection is important. Lowest price makes some varieties appealing, but often the cheapest varieties are not the best forage producers. In fact, some of the cheaper varieties don't have sufficient cold tolerance for most of Arkansas conditions. A cheap variety becomes very expensive if it winterkills or produces very little forage growth. In a year like this, it can pay to plant known varieties to ensure forage production.

### Ryegrass

For north Arkansas, cold tolerance is important. Refer to the Arkansas Plant Hardiness Zone map in Figure 1. The area north of Zone 6A, 6B, 7A and even the northern fringe of Zone 7B can be cold enough for winterkill of sensitive varieties.

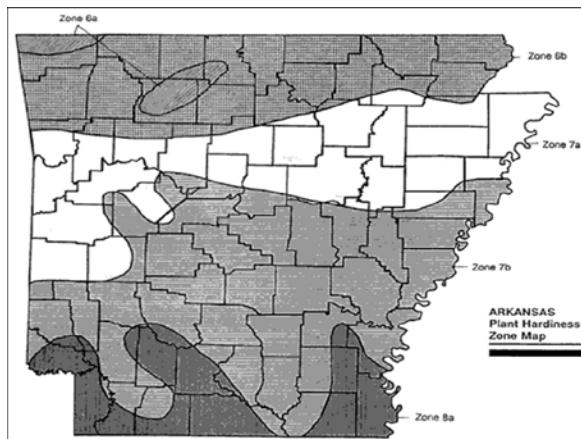


Figure 1. Arkansas Plant Hardiness Zone Map

Annual ryegrass varieties fall into two broad genetic categories - **Diploid** varieties and **Tetraploid** varieties. Diploid varieties tend to be more cold tolerant. Marshall ryegrass is an example of Diploid ryegrass and is well known for its cold tolerance. Tetraploid varieties have broad leaves and good disease resistance, but usually are much less cold tolerant than Diploid varieties. In Arkansas, we seldom have the disease pressure from rust and gray leaf spot found along the Gulf Coast so the superior disease resistance of many Tetraploid varieties is not needed. In general terms, Diploid varieties should be selected for northern Arkansas. Both

Tetraploid and Diploid varieties can be used in southern Arkansas. Some variation in cold tolerance exists among types so not all Diploid varieties are cold tolerant and not all Tetraploid varieties have the same cold sensitivity. For example, **Gulf annual ryegrass is a Diploid type and is not cold tolerant.** Gulf ryegrass and VNS (variety not stated) ryegrass are not recommended for these northern areas since winterkill has been reported in previous winters. Below is a non-inclusive list of annual ryegrass varieties of both Diploid and Tetraploid varieties that are being marketed.

Annual Ryegrass Varieties*			
Diploid Varieties	Company	Tetraploid Varieties	Company
Bruiser**	Ampac Seed	Angus I	DLF International
Marshall**	The Wax Co.	Attain	Smith Seed Services
Paserrel Plus**	Pennington Seed	Big Boss	Smith Seed Services
Surrey II	DLF International	Big Daddy	FFR/Sou. St.
Tam 90	Tex. Ag Exp Sta.	Chuckwagon	DLF International
Winter Hawk**	Oregro Seeds	Jumbo	Barenbrug USA
		Nelson	The Wax Co.
		Prine	East Texas Seed Co.
		Striker	Seed Research of OR

\*Non-inclusive list of annual ryegrass varieties  
\*\*Very good cold tolerance

Ryegrass can be planted as early as late August. Typical planting times for planting on a tilled seedbed begin in early September through early November. The typical planting period for sod-seeding either by no-till or broadcast methods, begins in late September through early November. Early-planted ryegrass (September) can provide grazing in late fall. Late-planted ryegrass (November) will not provide significant grazing until late winter (March) except during warm winters such as 2011-12.

Seeding rate is 20-25 lbs/acre. The grass sod should be grazed or clipped to about 2" to improve seed/soil contact. If no-till planting, set the drill to plant seed about  $\frac{1}{2}$ " deep. For broadcast seeding in sod, seed/soil contact will be improved by pulling a harrow, tire drag, or

other device to slightly scarify the sod when broadcasting the seed. Many producers pull a drag behind the broadcast seeder in the same pass to speed up the planting process.

### **Wheat**

Most wheat varieties are selected for grain production, but an increasing number of livestock producers plant wheat for grazing purposes. Few variety trials measure forage yield, but some general observations have noted that earlier maturing wheat varieties produce more vegetative growth in fall and late winter. The U of A wheat variety testing report provides information on relative maturity dates and mature heights of tested varieties. The link to the 2011 report is [http://www.aragriculture.org/News/wheat\\_update/wheat\\_update\\_2011.pdf](http://www.aragriculture.org/News/wheat_update/wheat_update_2011.pdf)

Some wheat varieties that have been noted for better fall vegetative growth and good grazing potential include

- AGS 2000
- AGS 2060
- HBK 3266
- Syngenta/Coker 9553
- Syngenta Magnolia
- Syngenta Arcadia

The following wheat varieties are commonly grown for grain, but should be avoided for grazing because they produce very little fall vegetative growth:

- Ranger
- Roane
- Pat
- Pioneer 26R10
- Pioneer 26R20
- Pioneer 26R22
- Terral 8861
- Terral 8848
- Syngenta Beretta
- Syngenta Oakes
- Armor Ricochet
- Progeny 870
- Dixie McAlister

General seed price ranges are \$16-\$18 per 50 lb bag. Field-run and feed wheat are currently \$9-12 per 50 lb bag, but the variety or forage potential are usually unknown. An extra \$5 per bag would certainly be worth the cost to get a variety that would provide more grazing.

### **Triticale**

Triticale is a cross of wheat and rye. It has a growth pattern and yield closer to rye than wheat and makes very good forage. Paul Beck has shown good results at SWREC in grazing trials with it. Monarch is a variety that is available this year. Based on work done by Johnny Gunsaulis and Wayne Coblenz in 2005-06, this forage has the potential to make a hay or baleage crop by late November to early December if planted in early September. Adequate rainfall will be required for establishment and growth. Any small grain that reaches the “jointing” stage of growth in fall will likely winter kill, therefore forage management should be planned to make use of early-planted varieties as hay, baleage, or as strip-grazed pasture to avoid loss of dry matter.

### **Rye**

Rye provides more fall grazing and earlier spring grazing than wheat. It grows very rapidly in March so producers must be prepared to handle the fast growth either by grazing, as hay, or as baleage. Dr. Beck’s work has shown that to manage spring rye growth, half the field can be managed for graze-out and the other half can be harvested as baleage to improve forage utilization and to reduce waste. Some typical rye varieties are:

- Wintergrazer 70
- Elbon
- Maton

A variety named Rhymin rye, from Minnesota, was sold in Arkansas last fall. Producers that grew it reported good grazing and forage production. River City Seed in North Little Rock (501-374-0302) is a distributor for Rhymin rye this year.

Two distributors that sell a good selection of wheat varieties and some triticale are:

- **Stratton Seed** in Stuttgart – Call Scooter Hodges at 870-674-4100
- **Seeds Inc.** in Memphis – Call Jeff Fletcher at 1-800-238-6440

Seeding rates for small grains (rye, wheat, and triticale) is 90-120 lbs/acre. For a longer spring grazing season, ryegrass can be added. Seeding rates for this mixture of 100 lbs of small grain and 20 lbs ryegrass have been successful.

**For more information on using winter annual forages for grazing, hay, and silage, refer to the following fact sheets:**

**FSA3051 Baled Silage for Livestock**

**FSA3064 Using Cereal Grain Forages and Mixtures With Annual Ryegrass for Grazing**

**FSA3063 Using Cereal Grain Forages and Mixtures With Annual Ryegrass for Hay and Silage**

**FSA3066 Winter Annual Grasses for Livestock in Arkansas**

## **Forage Brassica**

Forage brassicas include turnips, kale, rape, swede (rutabaga) and radishes. Many of these have been developed for improved forage production. In an ABIP project in White County, a producer planted rape for fall grazing. Yield was favorable but low in the dry rocky section of the field. In the field section with better soil depth and moisture, the plants grew over 20" tall (Figure 2). The producer strip-grazed the rape with a temporary electric wire and fed hay every second day. The cows grazed the forage extremely well. All forage was consumed with very little waste.

Last fall Steve Jones and Kenny Simon planted demonstration fields of forage turnips and ryegrass using different planting methods. The projects were for small ruminants and for cattle. They found that for desirable production, some soil disturbance (light disking) is required for turnips. No-till and broadcast planting onto undisturbed sod yielded very poor establishment and growth. The best growth resulted on a demonstration with a prepared tilled seedbed. The seeding rate for full stands of turnip is 5 lbs/acre. For mixtures with small grain or ryegrass the rate should be 2-3 lbs/acre turnip with 20 lbs ryegrass or 90-100 lbs wheat or rye. The turnips grow very rapidly in fall. The 2011 projects were planted the last week of August and yield was measured in early November. Demonstrations sites that did not receive fertilizer achieved dry matter yields ranging from 1400 to 1600 lbs/acre for turnips and the ryegrass was too short to measure yield. On a demonstration site where fertilizer was applied at planting dry matter yield for turnips was >3000 lbs/acre and ryegrass yield was 1200 lbs/acre dry matter. Turnip varieties used in these projects were Pasja and Appin, both distributed by Ampac Seed, and Seven-Top turnip. Marshall ryegrass was used as the comparison. Forage yield ranking was highest for Appin and lowest for Seven-top. The forage turnip varieties also produced faster re-growth than the Seven-Top, which increases the possibility of multiple grazings. Other varieties are available; however they have not been tested in Arkansas.

A good report on forage brassicas written by Dr. Marvin Hall is available from Penn State University at (<http://pubs.cas.psu.edu/freepubs/pdfs/uc100.pdf>). The University of Vermont conducted Forage Brassica Performance Trials in 2010 and 2011.

<http://www.uvm.edu/extension/cropsoil/wp-content/uploads/Brassicareportfinal.pdf> Although Vermont's climate and weather conditions are much different than ours, their planting and harvesting dates coincided with our planting and harvesting dates. The dry matter yield for Appin and Pasja Turnip in 2010 was similar to our yields last year with similar management. Their data indicate that Barkant turnip and Bonar rape produced similar yields to Appin and Pasja. Barkant forage turnip is distributed by Barenburg Seed and Bonar forage rape is distributed by Ampac Seed.

Two distributors that sell Ampac seed are:

- The **Hogan Company** in Nashville, TN – Call Stephen Callis at 615-384-1231
- **Missouri Southern**, in Rolla, MO - 1-800-844-1336



Figure 2. Cattle strip-grazing rape forage – White County ABIP Farm

#### **Determining when and how much winter annual acreage to plant**

Matching winter annual production with livestock need can be a challenge. Dr. Beck has studied planting dates and methods. The following observations will be useful for developing an emergency grazing program this fall.

#### **Forage brassicas**

Forage turnip and rape must be planted early for fall grazing. Brassicas planted in late August to early September can produce grazeable forage by late October. Tillage is required for good establishment. Light disking may be adequate. Clean tilled seedbeds are best. Brassicas can be grazed from October through December. An emergency grazing program could include early grazing of brassicas followed by grazing of small grain or ryegrass later in fall or winter.

#### **Small grains and ryegrass**

##### **For grazing by November 1:**

Small grains and ryegrass intended for grazing by early November must be planted the first week of September. Planting on a tilled seedbed or no-tilled into crop fields will be required for this to work. Apply 50 lbs per acre N after the stand comes up to ensure growth. Apply P and K according to soil test. If no soil test is available, be sure to apply at least 50 lbs each of P and K. Apply 50 lbs more N in February for sustained growth into spring. Due to the tillage

requirement, this option will not fit every case or every field. However, selecting specific fields for this early planting option may fill a void until other forage is available.

#### **For grazing by December 1-15**

Winter annuals intended for grazing in early December can be interseeded into warm-season grass sod or planted in crop fields from September 15 to October 15. Planting can be done with a no till drill or by disking followed by broadcast of seed and dragging with a harrow. Apply 50 lbs per acre N after the stand comes up to ensure growth. Apply P and K according to soil test. If no soil test is available, be sure to apply at least 50 lbs each of P and K. Apply 50 lbs more N in February for sustained growth into spring.

#### **For grazing by February to early March**

Planting annuals after mid October into November will allow good establishment but forage production will be delayed until February or early March. Fertilizer application can be delayed until February since growth potential is limited during mid winter.

#### **How much to plant**

Research has shown that a good measure for determining planting acreage is 1/10 acre per cow per day of the week to be grazed through the winter. For example, if cows will be limit grazed 3 days per week then plant 3/10 acre per cow. More grazing time requires more acreage. Dr. Beck's work has shown that cows limit grazed on winter annuals 2-3 days per week and fed hay the remaining time perform quite well. In that study, the "grazing day" was an 8 hour day and not a 24 hour period. As forage growth increases during the early spring then cows can be allowed to graze more frequently. This is a handy way to match the increased nutrient requirements of spring calving cowherds.

#### **Fall Sprouted Corn for Hay?**

An option to consider with low risk with little cost is the possibility of harvesting hay from new corn sprouts that come up after corn grain harvest. County agents say that corn producers are considering smoothing fields after corn harvest to allow any spilled or waste grain to sprout. Dr. Jason Kelley says that corn grain losses during harvest can range from one to five bushels per acre. One bushel per acre equates to two seeds per square foot. In some cases, corn sprouts can reach over three feet in height by mid-October. Forage quality of this material as hay would be similar to sorghum/sudan hay and would not likely have chemical restrictions associated with the main crop harvested earlier. Some cautions for both cattle and crop farmer should be considered. This material still has the potential for accumulating nitrate and should be tested before harvesting for hay to determine if it is safe for livestock. Additionally, the crop farmer should consider the amount of phosphorus and potassium that the hay crop will remove from the soil that could add to production costs the following year.