What to Do if There is a Forage Shortage This Spring

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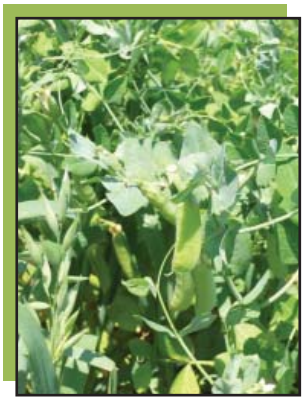


Forage oat and Arvika forage pea.

In 2013, many growers faced drastic forage shortages in the spring and summer due to winterkill. How should growers prepare in the event of a winterkill loss of alfalfa and grass stands on top of last year's losses? Experts cannot accurately predict what will happen since winterkill often occurs during the spring freezing and thawing cycle (low spots, where water freezes as snow melts, are prone to ice sheeting, depriving alfalfa crowns of oxygen resulting in winterkill or injury). Growers should be aware of options.

It may save time and money to purchase seed for annual forages before a shortage exists. Last year, many types of annual forage seed were out of stock soon after growers realized the severe damage to their alfalfa stands, leaving them with very few alternatives to cope with forage shortage.

The choice of annual forage depends of course on each producer's specific operation, forage quality and quantity needs, and location. Cool-season annual forages are the best choice to produce high quality forage early in the season. If tonnage is required, an annual cereal such as triticale or oat is the best choice. If high quality and crude protein content is needed, as with dairy operations, then annual forage cereals mixed with annual legumes such as peas or hairy vetch are the best choices.

Table 1. Forage yield of annual cereals and legumes alone or in mixtures in North Dakota.

Varieties	Fargo 2009	Fargo 2010	Prosper 2010
	----------tons DM/ac----------		
Pea (Arvika)	2.76	2.53	2.95
Arvika + Morton (Oat)	2.85	2.83	2.97
Arvika + Paul (Oat)	3.25	-	-
Arvika + Everleaf (Oat)	-	3.45	4.46
Arvika + Haybet (Barley)	4.09	3.56	2.78
Arvika + 2700 (Triticale)	4.27	-	-
Arvika + Merlin (Triticale)	-	4.12	3.71
Hairy Vetch + Morton	3.58	3.28	2.90
Hair Vetch + Austrian Winter + Morton	3.56	3.05	3.05
LSD (0.05)	0.73	0.66	0.86

Table 1 includes a comparison of varieties of annual cereals and mixtures and the tons of dry matter/acre produced in Fargo and Prosper.

Cereal Crops and Mixtures Management

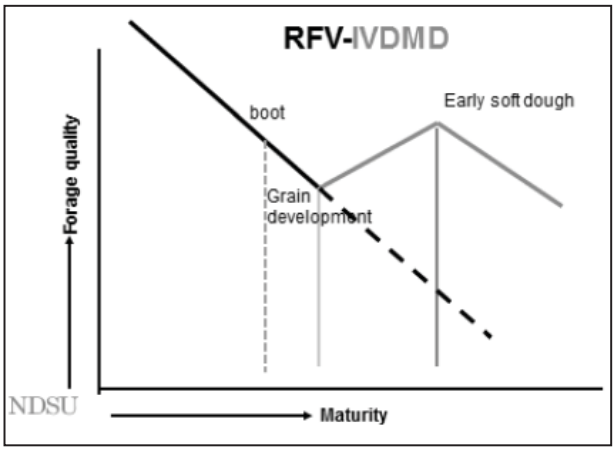
Seeding date and rate. Optimum seeding date depends on moisture and soil temperature. Legumes usually take 4-6 days to emerge and annual cereals only take 2-3 days. The closer the temperature is for optimum growth, the faster germination and emergence will be. Cool-season grasses usually require 35-40F° to germinate.

Calculate seeding rate based on pure live seed (PLS) as indicated below. Use the seeding rates recommended for each crop.

% PLS = (% purity x % germination)/100

Example: seed with 85% purity and 95% germination, the % PLS is 80.7% (85 x 95/100).

Figure 1. Effect of maturity at harvest in forage quality in annual cereals.



Fertilization. Fertilize according to the recommendation for the crop and the results of the soil test. Nitrogen fertilizer is key for a high forage yield in annual cereals seeded alone. Test the soil for pH if seeding a legume such as pea or hairy vetch, which are very sensitive to low soil pH (<6.0).

Weed control. Control weeds according to the recommended rates for the crop. Avoid residual herbicides if a second crop is planned after the harvest of the annual emergency forage.

Harvest management and forage quality. Forage quality varies with harvest date (Figure 1). For most cereal crops, the highest quality is achieved when harvested in soft dough stage.

For more information on annual forage cereals yield and quality visit: http://www.ag.ndsu.edu/plantsciences/research/forages.