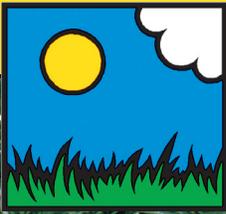


Great in Grass





GREEN SPIRIT ITALIAN RYEGRASS



Green Spirit Italian ryegrass blend offers excellent quality and yield.

Green Spirit is a unique blend of **Bardelta** (*diploid*) and **Barextra** (*tetraploid*) Italian ryegrass varieties. Combining tetraploid and diploid varieties maximizes the advantages each has to offer. Barextra (*tetraploid*) provides high dry matter production, disease resistance to crown rust and improved palatability. Bardelta (*diploid*) is added for better persistence under grazing and improved traffic tolerance. Bardelta also has improved dry matter production and winter hardiness compared to older cultivars. In regions with moderate climates, Green Spirit will be a biannual forage.

The varieties used in Green Spirit require prolonged periods of cold weather for vernalization. Once vernalized the plant has the ability to produce seed heads which result in the loss of forage quality. Inferior products that imitate Green Spirit vernalize with much shorter periods of cold, producing seed heads soon after planting when spring night time temperatures drop.

Italian versus Annual: When quality and yield matter.

Green Spirit

Spring Planted

- High dry matter production
- No seed head production
- Very high forage quality
- Produces forage until late fall
- Over-winters and produces forage in the following spring and early summer in the transition zone and Northeast

Fall Planted

- Better winter hardiness
- Late heading in spring
- Maintains better forage quality
- Better regrowth after cutting

Annual Ryegrass

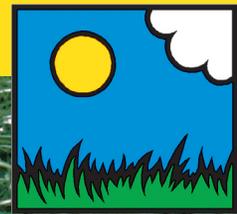
Spring Planted

- High dry matter production
- Seed head production in late spring
- Reduced forage quality
- Only produces until mid-summer, stops growing after mid-summer and does not over-winter.

Fall Planted

- Less winter hardiness
- Early heading in the spring
- Reduced forage quality
- Slow regrowth after cutting





High Energy Ration component in TMR

Green Spirit is ideal as silage or green-chop for high producing dairy cattle. This mixture produces impressive forage yields of exceptional high quality feed (6 to 8 tons of dry matter per acre Table 1). The forage value of Green Spirit is higher than that of corn while maintaining similar DM yields. Green Spirit creates great economic advantages for producers. Green Spirit has a high energy value (NEL values of 0.61- 0.70 Mcal/lb) and is an excellent source of digestible fiber (NDFd of 53-69%). In a TMR Green Spirit is an ideal forage for lactating dairy cattle. Green Spirit is a higher forage value alternative to triticale for green-chop. A mixed planting with a premium red clover such as Freedom! is recommended to improve production and the quality of harvested forage.

Table 1. University of Wisconsin Forage Trial - Study 99, 2007 harvest, 1st. year data.

Crop	TOTAL tons/acre	Avg. Protein	Avg. NDF	Avg. NDFD	Avg. RFQ	Avg. lbs. milk/ton
Alfalfa	5.02	24.1	33.2	49.4	209	3252
Corn	10.4	7.0	46.8	53.8	-	3309
IR25*	9.11	23.8	45.7	73.3	190	3370
IR35*	8.69	22.4	47.4	73.7	186	3410

* IR25 is Italian ryegrass harvested after 25 days. IR35 is Italian ryegrass harvested after 35 days.

Nutrient Recycling

Green Spirit is a very effective user of soil nutrients. It is an agronomically sound forage crop for recycling effluent water from confinement animal operations. Cool season grasses are particularly effective in Phosphorus uptake when compared to warm season grasses such as silage corn. In the northern US, spring planted Green Spirit is a very high energy forage and may be utilized for grazing or high-moisture cutting system into late fall. Fall planted Green Spirit provides nutrient recycling in late fall/early winter and also earlier in the spring compared to warm season forages. It can then be rotated to hybrid sorghum-sudan in early summer to provide year around nutrient uptake. For this application Green Spirit should be sown at 30-35 lbs/ac

Nurse/Cover Crop

At low planting rates (3 lbs/ac) Green Spirit is ideal as a nurse or cover crop for perennial forage crops such as alfalfa. It provides higher yields and better quality forage compared to oats. Green Spirit can be no-tilled (25 lbs/ac) into alfalfa stands that are winter damaged or killed to provide emergency forage for the season. Green Spirit will rapidly establish and provide forage in as little as 6 weeks.

Winter Grazing

In areas where small grains are used for winter grazing, mixtures with highly palatable Green Spirit will improve the yield and quality of these fields. Green Spirit shows quick regrowth after grazing and can be planted with cereals such as triticale to extend the grazing season Green Spirit should be mixed at 10-25% by weight with triticale.

Finishing Grass-fed Beef

Green Spirit is the perfect choice for grass finishing Grass-fed beef. The high sugar content of Green Spirit creates a high Net Energy Gain (NEg) for the animal. This is crucial because any energy not used for maintenance will be stored as small fat deposits. These deposits, referred to as marbling, are what determine the grade of the beef. Marbling also has a direct impact on the flavor and texture of the beef. In order for a cut to be labeled as USDA Prime there must be abundant marbling. Green Spirit can be established in pastures in spring (30-35 lbs/ac) for finishing beef in summer.

Green Spirit® Italian Ryegrass Blend

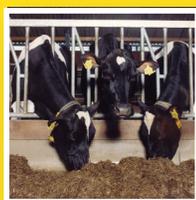
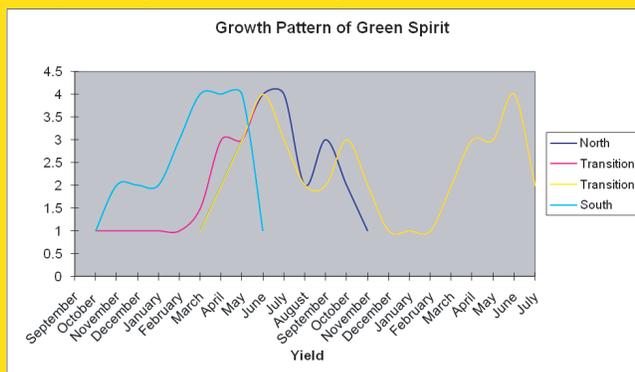
Adaptation - Climate: Green Spirit is suited for all planting zones. In the northern United States it can be used as a spring-planted annual crop. In the transition zone it performs as a biannual forage crop. In the southern United States it is suited as an annual crop for winter production in mono-stand or in mixtures with winter cereals. Green Spirit performs well in the western United States with supplemental irrigation.

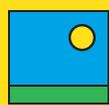
Adaptation - Soils: Green Spirit is adapted to wide range of soil conditions - it performs in heavy clay soils and light sandy soils.

Seeding Rate:	Planted as grazing/cutting crop	35 - 40 lbs/acre
	Planted as a nurse crop:	< 5 lbs/acre
	No-Till into WinterKilled Alfalfa:	25 lbs/acre

Establishment: Green Spirit may be planted in the fall or spring. Prior to planting, apply 100 lbs of a 20:20:20 fertilizer. For fall planting, plant immediately after harvest to improve establishment and graze or cut prior to winter in order to thicken the stand and promote winter survival. For spring planting, plant early in the spring. Green Spirit may be planted via full-cultivation, no-till drill or broadcast seeding. When planting as a nurse crop to a perennial or interplanting into an existing alfalfa stand, broadcast or drill in a manner to stagger the placement of the Italian seed with the other crop. Plant no deeper than 1/4 inch.

Management: For highest forage quality, maintain in a vegetative state. For grazing systems, graze at 6-8 inches down to 3-4 inches and for cutting systems, harvest at 12-18 inches. Green Spirit responds well to nitrogen fertilization.



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