NATIVE GRASS PRIMER

Once the seed has been planted this old adage must be remembered - "The first year they sleep, the second year they creep, and the third year they leap." Patience truly is a virtue while waiting for a native grass stand to establish.

Native or Introduced?

Habitat and Range grasses are naturally divided into several basic classifications, native or introduced, and warm or cool season. Most range plants are native, or plants that originated in North America. Introduced refers to plants which have been brought into North America from another continent and were adapted to conditions here.

Cool season or Warm season?

Cool season grasses grow primarily in the cooler spring and fall months with a summer 'slump', while the warm season grasses start growth later in the spring and exhibit most if their growth in the hot summer months. In the Central Great Plains most grasslands will be predominantly one type or the other. In a new seeding with both warm and cool season species, the aggressive early spring growth of the cool season grasses give them the competitive advantage over the slower starting warm season species. For this reason most seeding recommendations will be either for a warm season mixture or a cool season mixture but only in special cases will they be mixed together.

Varietal or Ecotype?

Most of the grass seed provided by our company will be released plant materials in named variety, certified seed. We feel this is the best way we can provide our customers a product with the best opportunity for establishment. Released plant materials have been subjected to a variety of testing protocols, such as site adaptation, seed yield, and pest resistance. Because of this testing we believe that the risk associated with using released plant materials is less than the risk associated with non-released (ecotype) plant materials. A key factor in our position is the genetic diversity inherent in most released plant material. The breeding and selection process combines genetic material from a broader geographic area providing the resulting cultivars a wider area of adaptation than ecotype or non-released plant materials. There is certainly a place for ecotype plantings. However, the challenge is determining the ecological ranges within which an ecotype should or could move. The Great Plains is an area with dramatic rainfall and soil type changes within small geographic areas. Using Nebraska for example, a native grass ecotype growing in the Platte valley may not be at all adapted as little as a mile away out of the valley. The average annual rainfall in the Western two-thirds of the state is only about one-half the annual rainfall in the Eastern one-third of the state, certainly limiting the fitness of ecotype plant material moving in either direction across the state.

Visual observation of seed source grow-outs comparing several species of native grass at the University of Nebraska, Agricultural Research & Development Center near Mead, Nebraska helped strengthen our belief that released plant materials have a wider genetic base and greater potential for successful establishment than the ecotype selections. In this trial coordinated by Dr. Ken Vogel, USDA-ARS, the ecotype plants looked almost cloned with very little different in phenotypic traits such as color, height, and maturity. The released material expressed widely ranging leaf colors, plant heights, textures, and relative maturity. This trial highlighted the need

for careful selection of and planning in the movement and use of ecotype selections in successful grass seeding projects.

It has been suggested that released materials provide to much cover. Most of the released materials marketed now were selected for establishment vigor and broad adaptation. Only in a monoculture is the issue of competition or too much forage a problem in habitat seeding. For many reasons a mixture of species is more practical for a sportsman as well as an ag producer.

A real benefit from the CRP and other conservation programs is the opportunity provided for a producer to establish a stand of soil conserving grass with several potential uses. A diverse seeding can provide good habitat as well as opportunity to a forage resource to complement existing resources or for use in emergency situations such as drought.

Pure Live Seed

Cool season grasses are usually sold on a bulk basis. This is fair to both buyer and seller because cool season grass seeds are fairly consistent in purity and germination. However, most native grass seeds are 'fluffy' or 'chaffy' and seed purity and germination can vary greatly from lot to lot. Due to this variation, native grass seed is usually sold and seeded on a Pure Live Seed (PLS) basis. *PLS* equals the *% Purity* multiplied by the *% Total Germination*. This calculation is done to determine how much pure seed that will actually germinate in a particular 'lot' of grass. Be careful not to buy native grass seeds on a bulk basis without a PLS comparison, as you may be buying less seed than you think.

> Example: In the following two lots of native grass, purity and germination only change 10% each but if buying on a bulk basis you would get 15.5% less 'PLS' seed for your money. In other words if you plant one pound bulk of each, you would be planting 15.5% fewer seeds that have the potential to grow.

Lot 1, Purity: 65%	Lot 2, Purity: 75%
Germination: 80%	Germination: 90%
PLS = (0.65 x 0.8) x 100	PLS = (0.75 x 0.90) x 100
PLS = 52.00%	PLS = 67.50%

Planting & Establishment

Native grass is slow to establish, and planting into oat, sorghum or millet stubble can enhance success. The stubble should be no more than 15" and drilled at right angles to the prevailing winds or slope. Stubble protects the grass seedlings from erosion and drying out. Grass seeds should be covered with soil ¼ to ½ inch deep on fine textured soil and from ¾ to one inch deep in sandy soil. Keep in mind most of theses seeds will not flow through a typical seed drill. A good grass drill will have a positive feed mechanism to meter seed out uniformly and an agitator to keep the light and chaffy seed from bridging over. Best planting dates for native grasses in the Northern Plains and Corn Belt are Nov. 1 through May 15.

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