SEED USE GUIDE

A listing of public and selected private varieties with recommendations as to use, seeding rates and management.

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"Quality Seed and Seed Conditioning"

COMPILED BY
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Treasure State Seed, Inc. was established in 1979 by Donald and Laurie Becker. Don holds Bachelor and Master degrees in Agronomy from Montana State University. He started his career as a County Agricultural Agent and spent 5 years in the seed business prior to establishing Treasure State Seed. Treasure State Seed remains a family owned company, dedicated to providing quality seed, seed conditioning and personal service to our customers, including technical assistance on variety selection, seeding and other agronomic issues.

We specialize in the evaluation, production, processing and marketing of quality grass, legume, turf, reclamation, specialty and cereal grain seed. We have developed a reputation throughout Montana and the Northwest for providing high quality seed to area farmers and ranchers, as well as to wholesale accounts.

One of the services we offer to our customers is technical advice on species selection and establishment. The purpose of this publication is to provide our customers with written information on the above. We sincerely hope it will be of value to you. Any questions you have which remain unanswered can be directed to us.

A Word About Grasses and Legumes

Throughout history, those involved in agriculture production have recognized the importance of forage crops to agriculture. Forage crops, if properly managed are profitable. In addition, forages, especially legumes are well-known for their soil building properties.

Legumes such as clovers and alfalfas, are efficient nitrogen formers. If properly used in a crop rotation, they will significantly add to soil fertility and tilth. In addition, legumes will improve soil structure by aiding in the breakdown of soil hardpans.

Grasses, in addition to forage production, have an important place in soil stabilization. Grasses, if properly selected and planted, will effectively hold down soil erosion on roadsides, burn areas and other such areas where soil has been disturbed.

Turf Grasses – Fulfill a very important environmental need and are used for beautification around homes, commercial buildings, parks, highway interchanges, resorts, athletic fields and of course the ever increasing establishment of golf courses. As with forage grasses, alfalfa and other forage crops, plant breeders have aggressively developed many hundreds of new and improved varieties. Therefore we seldom list Proprietory (private) varieties since they are ever changing. We keep our customers informed about current proprietory varieties as per site adaption and use.

Establishing Forage Grasses and Legumes

Two major factors, excluding climate and soils, account for the success or failure of most forage plantings. One factor is seed quality. In discussing seed quality, whether in reference to forage, turf, specialty, or cereal seed, we are referring to the following:

Percentage of pure seed, weed seed, other crop seed, inert matter and germination. Other factors to consider in seed quality are general appearance and uniformity of the lot, and in the case of cereals, seed size.

For legumes, total germination includes both the percentage of hard seed (dormant) and seed which will readily germinate. Hard seeds are usually viable, however water uptake may be hampered due to an impermeable seed coat. Hard seed may lie dormant in the soil for several weeks, months or in unusual cases, for years. The hard seed percentage on most lots of alfalfa will range from a low of about 20% to a high of 50%. In certain cases such as poor soil moisture, or other conditions leading to poor germination, hard seed can be advantageous, since germination will occur at a later time when conditions for seedling development may be better. Pure seed is the percentage of the variety in the lot of seed being offered for sale. Weed seed, including noxious weed seed, is listed by total percentage. Restricted noxious weed seed, if present, must be listed on the tag by name and number per pound. Prohibited weed seed cannot legally be present in any lot of seed offered for sale. Each state and in some cases counties will present their own list of prohibited and restricted weeds. Inert material is defined as any material present in the lot which will not germinate including broken seed, chaff, etc.

Pure Live Seed (PLS) is a term with which all buyers of seed should be familiar. Pure live seed can simply be defined as that portion of the seed lot containing pure seed of the variety being sold, which will germinate. This percentage is determined by multiplying the percentage of pure seed as a whole number by percentage of germination, and dividing by 100. EXAMPLE-assume purity of the lot to be 90% and the germination to be 80%. 90 X .80 equals 72. Therefore, per every 100 pounds of seed purchased, 72 pounds would be pure seed, capable of germinating.

The second major factor affecting the success or failure of a new planting is seedbed preparation. Seedbeds for small seeded grasses and legumes should be firm and level. A good rule of thumb regarding seedbed firmness is to note the depth of the footprint. The depth of the footprint of the average man should not exceed about one-half inch in a well prepared seedbed. The major reason for a fine, compact seedbed is to allow moisture movement to the seed, and retention thereof long enough for germination and root development to occur. A rough, uneven seedbed will dry out much quicker due to the presence of excessive pore space among soil particles. Even though a seed may germinate under poor seedbed conditions, it may not survive because of poor moisture retention under such conditions. The important thing to remember is that as seed size decreases, the firmness and overall condition of the seedbed must be improved. This is simply due to the fact that a small seed may not be able to imbibe water and germinate if placed in a soil containing excessive air space.

Soil fertility
In addition to the above, the fertility of the soil should be carefully considered before planting a forage crop. A soil limiting in one or more of the major, secondary or, in certain cases, minor elements, will not allow the forage to yield to its inherent ability. Also, nutrient starved crops normally result in poor forage quality. A complete soil analysis is recommended before planning a fertilizer program.

Forage Selection
Most forages (grasses and legumes) have a use in a cropping system to which they are best suited. Certain ones have very specific uses, while others are adaptable to a wider variety of environmental conditions. The first step in forage selection is to select the species, and then if more than one variety is available, to select the variety best suited to the conditions.

In selecting species for a mixture, a common error is to include every species and variety which conceivably might grow. Such complex mixtures are not generally successful, due mainly to excessive competition among species. A simple mixture of no more than four to five species is generally recommended. Following is a guide to the selection of species and varieties categorized by use. In most cases varieties may not be listed since release and introduction of new varieties is an ongoing process.

Forages – Irrigated Hay and Pasture

Grasses – Well Drained Sites

Bromegrass

The bromes are long-lived perennials producing an abundance of quality forage. With the exception of meadow and mountain bromes, all bromes are strongly rhizomatous. Generally the bromes are best adapted to irrigated production; however, varieties such as Lincoln or Carlton can be used under dryland conditions. Bromegrass can be utilized as hay or pasture, however, most varieties will become sodbound quite rapidly and therefore their use in combination with alfalfa should be studied. (See meadow brome below.) All bromes are heavy users of nitrogen. Consistent application of N in proper combination with other required nutrients will increase yield and reduce sodbinding.

Lincoln and Other Adaptable Varieties
Lincoln can be used for dryland plantings or in areas where irrigation water may not consistently be available. It is often used in blends intended for soil stabilization, because of its sod forming capability.

Meadow Brome (several varieties)
Meadow brome varieties offer great potential for irrigated pasture but also

have a place in dryland situations with better moisture. There are several varieties of meadow brome, all offering much better recovery after cutting or grazing as compared to smooth brome. Meadow Brome will not go into dormancy with summer heat as does smooth brome. Another main attribute of meadow brome is a much less aggressive root system, (short rhizomes) therefore stands will not become sod bound as quick which is an advantage when planting with alfalfa. Meadow Bromes are early, with good fall re-growth, and they tolerate grazing pressure.

Mountain Brome
A shorter lived, native bunchgrass generally used for erosion control on fire sites, residences, etc. Can also be used on higher elevation sites where a natural look is preferred. Works well in combination with other native species.

Orchardgrass

The orchardgrasses are hardy, long-lived perennial bunchgrasses that produce a rather open sod. Due to the open nature of the sod, planting in combination with a sod-former may be desirable. Generally, the orchardgrasses are not as drought tolerant as brome (with the exception of Paiute). Therefore, their use will in most cases be restricted to irrigated production. An exception is Paiute which is adapted to limited moisture areas. Orchardgrass works very well in combination with alfalfa but, like alfalfa, it requires a well-drained soil. Generally this grass is not as productive as smooth brome in the early season, but is more productive during the mid-summer and early fall. Orchardgrass is subject to winter injury in certain areas.

Proprietory Orchard varieties
There are several privately developed varieties that offer better production, cold tolerance, quality, and recovery after cutting or grazing. Such varieties can offer different maturities compared to public varieties, and have better winter-survival. Select a variety that has the highest winterhardiness for your area. Ask us about those varieties.

Potomac Orchardgrass
This variety, although the least winter hardy of the orchards, will do very well in areas where winter injury is not a problem. It is a leafy variety, which responds very well to fertilizer. It is of medium maturity and therefore can be used for either hay or pasture.

Latar Orchardgrass
An older improved variety, having good production and leafiness. Its winterhardiness rating is superior to Potomac. It works well in combination with alfalfa, and has a later maturity than Potomac.

Paiute Orchardgrass
A drought tolerant orchardgrass variety which will survive and produce in areas of 10-12" of annual rainfall. In addition to its use for reclamation plantings, Paiute is also adapted to rotation grazing systems, and grass-hay mixtures. Under dryland conditions Paiute will produce forage to about 14" height. Compared to crested wheatgrass it will green up about one week earlier in the spring and remain green about two weeks later in the summer.

Fescues

Tall Fescues
These fescues encompass several varieties most commonly used for irrigated pasture. The tall fescues, all bunchgrasses, are well adapted to moist soils and will tolerate moderate amounts of alkali or salts often associated with wet soils. One of the desirable qualities of Tall Fescue is its ability to produce and stay green during the summer and early fall. Generally the tall fescues are very high producing grasses; however they are not as palatable as brome and orchard. Although most seed lots of Tall Fescue now sold are "Endophyte Free", we suggest checking to make sure the seed lot is Endophyte Free. Endophytes are a microscopic fungus that grow in the plant, producing alkaloids that can sicken livestock.

Alta and Fawn Tall Fescue
These two varieties are very similar in characteristics and production. Both are high producing varieties with the attributes outlined above.

Hard Fescue
A hardy, drought tolerant bunchgrass growing to a height of 12-24". Even though a bunchgrass, it has a very dense, fibrous root system and therefore it is often used for erosion control and for dryland turf. Several improved varieties are available including Durar, Scaldis and Aurora Gold.

Sheep Fescue
Similar in many respects to Hard Fescue in relation to growth habit, height, etc. One advantage of Sheep Fescue over Hard Fescue is better drought tolerance. Among improved varieties are Covar, MX86 and Quattro.

Ryegrasses

Tetraploid Perennial Ryegrass
Genetically, these ryegrasses have double the chromosome count of standard perennial ryegrasses. These genetically improved varieties have quick recovery after cutting or grazing, and are high yielding and have substantially improved palatability over the older varieties. Since some perennial ryegrasses lack winterhardiness, be sure a variety you choose has adequate winterhardiness for your area. They work well in irrigated pasture blends.

Annual Ryegrass
A low growing annual, or occasionally, biennial grass often used in small percentages in turf blends to provide quick cover for developing fine leaf varieties. It has also been used in larger percentages as filler in Bargain Turf Blends. In the northwest, Annual Rye will generally winterkill the first year. Occasionally it will survive a second season. It can also be used as part of reclamation mixes. With several proprietory pasture varieties available, Annual Ryegrass could be used to interseed into a thinning alfalfa or grass

stand to extend life of stand one more year. These varieties establish quickly and have the potential to deliver good forage yield.

Other Forage Grasses

Festulolium
A genetic cross between meadow fescue or tall fescue and tetraploid perennial ryegrass. The cross provides a plant with deep, strong roots that provide increased drought tolerance, summer stress tolerance, and winter hardiness. It offers good production and palatability. It is best used in combination with other irrigated grasses and can be used with alfalfa.

Timothy
A short-lived bunchgrass adapted to irrigated areas or where 16 inches or more of precipitation is received per year. Although it likes moist sites it is not salt tolerant. It is very palatable at all growth stages, but protein content drops markedly with maturity. Timothy does very well in mixtures with alfalfa, Alsike or Red Clover and other irrigated grasses. Climax is an older Canadian, tall, fine-stemmed variety. It is a well adapted variety for planting in Montana and other areas in the northwest. There are also several private varieties available. Timothy is often used for horse hay in pure or mixed stands. Timothy should not be planted alone on wet sites but does well on wetter areas, when used along with similar adapted grasses.

Meadow Fescue
A palatable bunchgrass with similar adaptability to timothy on wetter soils. It can be short lived in certain areas.

Redtop
A very small seeded sod-forming vigorous grass which is well adapted to poorly drained, acidic soils. It is found on many wetter meadows in western Montana. It also is successfully used in areas with contaminated soils.

Grasses – Poorly Drained Sites

Garrison Creeping Foxtail

A long-lived perennial sod-former. Garrison is ideally suited for use on wet areas for either pasture or hay use. It will tolerate short periods of flooding. Garrison initiates growth early in the spring, and matures about three weeks earlier than timothy. Generally this variety will be more productive than Timothy on wet sites. It is a leafy and very palatable grass, with high protein if cut at the proper stage. Seed of Garrison germinates rapidly, however the seedlings are weak, therefore competitive growth should be kept to a minimum. Coated seed is also available for easier seeding and possibly quicker establishment. Note that Garrison is slow to establish.

Reed Canarygrass

A rather coarse growing sod-forming grass, very well adapted to most poorly drained soils. It will withstand submergence in water for an extended period of time. If properly managed this grass will produce an abundance of good quality forage. To maintain palatability for grazing purposes it should be cut prior to reaching a height of 12 to 13 inches. For hay production it should be cut when the first seed heads emerge. Seedlings of this variety are not aggressive, therefore competition from other crops or weeds should be minimize. If available, choose a “low alkaloid” variety for better palatability and quality. Tall Fescue, Meadow Fescue, and Redtop also work well in wetter soils.

Legumes – Well Drained Sites

Alfalfas

Basically, all varieties can be planted on irrigated land, however some may not have adequate disease resistance. Certain selected varieties are better suited to dryland production. These varieties are outlined as such below. Also, varieties have been developed for use in areas where root disease such as Phytopthora Root Rot, or Verticillium Wilt are a problem. We can discuss such varieties with you. Without a doubt, alfalfa is one of the most widely used and adapted forages in North America. Often referred to as the Queen of Forages, it dates back over 3,000 years ago to the Roman Empire, to areas with cold winters and hot summers. Alfalfa was introduced into the southwest US from Mexico by early missionaries. Some of the early improved varieties were Grimm, Cossack, and Ladak. Of these, Ladak and Ladak ’65 (introduced in 1965 by Montana State University for Bacterial Wilt Resistance) are still widely used in one-cut dryland areas. From the early improved varieties, plant breeders, both public and private, have done a superb job of releasing many new and improved varieties for increased yield, quality, perisistence, winterhardiness, recovery, disease and insect resistance or tolerance. More recently, breeders have released Roundup Ready (Glyphosate) resistant varieties. This technology allows the use of Roundup to control any invasive monocot or dicot in a stand of R R Alfalfa.

Dryland Alfalfa Varieties

Ladak Alfalfa
One of the original dryland type alfalfas, considered as truly drought tolerant. The root system of this variety is of a tap-root type thereby allowing the plants to reach to a greater depth for water. This variety normally produces a heavy first cutting. Subsequent cuttings will be significantly smaller unless additional moisture is received. It does very well at higher elevations and possesses excellent winterhardiness.

Ladak ’65 Alfalfa
A much improved Ladak ‘65 was released in 1965 by Montana State University. It was developed from selecting preferred characteristics from within the variety Ladak. This variety has consistently outyielded Ladak, and other major dryland varieties in Montana trials. When planted at the proper rates, it is a fine-stemmed leafy alfalfa. It is extremely winterhardy, and has a high resistance to bacterial wilt. Among the major alfalfa varieties, Ladak ’65 appears to be one of the most widely adapted to dryland conditions.

Pasture (Grazing) Varieties
Several public and proprietory varieties are available. Such varieties are drought tolerant and have a lower set crown to reduce damage to the crown from cattle and wheel traffic pressure. Some varietal claims indicate a creeping habit although that appears to be a controversial claim.

PGI 427 Alfalfa
A unique Target Seed variety with improved drought and salt tolerance. It has high disease resistance and good grazing and traffic tolerance.

Irrigated Alfalfa Varieties

There are many good Proprietory Alfalfa varieties available. We primarily market varieties developed by Producers Choice (Target Seed) and WL Varieties (Forage Genetics). When choosing a Proprietory Alfalfa, choose a variety with the following attributes: 1) Winter Survival rating in the 2-3 range. 2) Fall Dormancy rating of 3-4. 3) Multi-Pest resistance (spotted and pea aphids) 4) High resistance to phytopthora root rot and aphanomyces, verticillum, fusarium and bacterial wilts. 5) High quality combined with superior yield. 6) Traffic compaction tolerance for better grazing adaptability. 7) Stem nematode resistance. (Note: Producer's Choice has recently released varieties with improved drought and salt tolerance.)

Vernal Alfalfa
An old Wisconsin variety which has proved to be a hardy good producing variety. It is a wilt resistant variety which will normally outyield Ranger. It has generally replaced Ranger in many areas. Although Vernal is a good hardy variety, many of the newer proprietory varieties will outyield it, with the additional benefit of much better disease resistance.

Coated vs. Non Coated (Raw) Seed
Most private varieties are available as raw (pre-inoculated) or coated. There are several companies coating seed which use the same basic principle. Coated seed is pre-inoculated and coated with a clay-based, lime coating which incorporates Apron or similar fungicides for protection against seedling diseases until the genetic resistance kicks in. The coating is approximately 34% by weight, therefore coated seed is approximately 66% seed. Even though research shows that on a seed for seed basis, coated seed will result in better stands, we recommend increasing total pounds planted by approximately 10+ %. Thus cost per acre is very comparable; raw to coated seed. Coated seed will have a higher seedling survivability percentage, and better root development. The primary reason; the hygroscopic quality of the coating draws moisture to the seed for more uniform germination and the fungicide protects the new seedling from disease invasion (root rots, pythium, etc.) A couple of other advantages to coated seed: For broadcast applications, a more uniform application pattern is attained due to increased seed weight and secondly, if seed is blended with fertilizer (a common practice) the coating protects the inoculant from damage by fertilizer.

Clovers

Ladino
Produces good quality forage and is a good soil builder. It prefers well drained soils in a neutral pH range. Ladino is a mammoth strain of White Dutch Clover with a creeping habit via above ground stolons. With careful management it may persist for five years or more. It requires frequent irrigation for top yields. Winter hardiness is adequate.

Yellow Blossom Sweet Clover
A biennial strain best adapted to use on dryland areas for hay, pasture or soil building purposes. It is normally the least expensive of the clovers.

Red Clovers
These are short-lived, non-creeping perennial clovers. Generally, Red Clover, if planted early without a nurse crop, will produce the first year. Maximum production will be obtained the second year. Stands may not be worthwhile maintaining a third season. It is best suited to well drained, fertile soils with good moisture holding capacity. The Medium Red Clover types are "double cut" types, whereas the Mammoth types are "single-cut".

White Dutch Clover
A long-lived, perennial clover which spreads by creeping stems. Since it has a prostrate growth habit, its most common use is in lawns, or for reclamation of disturbed pastures, where it will withstand heavy grazing. Production in pastures will be lower than most other clovers. It does best under cool, fertile and moist conditions but also does well on acidic, poorly drained soils.

Sainfoin

A deep-rooted, branched perennial, non-bloating, legume primarily adapted to dryland or limited irrigation on well drained higher pH soils. Since current varieties have little or no root rot resistance we do not recommend planting sainfoin on heavy textured irrigated soils. If planted on adapted soils, it has a long lived potential, and will equal or exceed alfalfa yields. Since sainfoin is non-bloating, it can be safely grazed, and can be planted with grass. Even though more coarse than alfalfa it actually is more palatable than alfalfa and is especially relished by Elk and Deer. Other advantages of sainfoin are its early spring greenup, tolerance of early frost, and its resistance to alfalfa weevil. Even though the seed is larger than alfalfa, it needs to be seeded at a depth of ½ to ¾ inch in a firm seedbed. Although not a proven nitrogen fixer, seed should be inoculated just prior to seeding. Since the seed is much larger than other legumes, seeding rates are approximately 34 p.l.s. #'s per acre. Several varieties currently available are: *Eski* - an older, but excellent variety with good adaption for Montana. *Remont* – an improved variety released by Montana State University for improved recovery, and therefore has been recommended as best for high precipitation or irrigated areas. *Shoshone* – a recent Eski type variety released by Wyoming. *Delaney* – A Remont type, released recently by Montana State University.

Legumes – Poorly Drained Sites

Alsike Clover
A short lived perennial clover which is quite well adapted for use in irrigated hay or pasture mixes. Although it is best adapted to slightly alkaline or neutral soils, it will perform better on slightly acid soils than most other clovers. The plants of Alsike are leafy and, under favorable conditions, may reach a height of two to three feet. Although a short-lived perennial, it does re-seed if allowed to mature and set seed.

Cicer Milkvetch
A perennial non-bloating legume particularly well adapted to use on wet areas where many varieties of alfalfa may not persist. It is rather slow to reach its maximum forage production. Once established it will yield at levels comparable to alfalfa. It is slow to establish, since it has a high hard seed percentage. Once established it is a very hardy and vigorous crop. It is strongly rhizomatous and spreads rapidly once established. It makes excellent fall pasture due to the fact it is non-bloating and that it resists frost damage better than alfalfa. Established stands are much later than alfalfa (2 – 3 weeks) to resume spring growth. Cicer can be used on higher moisture dryland sites and can be successfully grown on higher elevation sites of 4,500 – 7,000 feet. Several improved varieties are available.

Birdsfoot Trefoil
A long-lived, non-bloating, deep-rooted perennial adapted to irrigated areas. Its best use is for pasture, and can be mixed with non-competitive grasses. It will tolerate wet soils and a wide range of pH even acidic soils. Once established it will thrive under a wide variety of conditions. It is not as demanding in terms of moisture, soil fertility, etc., as most other legumes. Since it is not a good competitor during the seedling stage, it should not be planted with a nurse crop. Generally, yields of this legume will not equal those of alfalfa. Birdsfoot Trefoil may lack the necessary winter-hardiness for certain areas of northeastern and northcentral Montana.

Forages – Dryland Hay, Pasture, & Reclamation

Wheatgrasses

Crested Wheatgrass
Several varieties make up the selection among this group of very long-lived bunch grasses. Crested has a very extensive, deep, fibrous root system and therefore is very drought tolerant. Its best usage is early spring and fall if moisture allows for regrowth. Palatability in late spring and summer is poor, and deteriorates quickly after heading. Crested is an excellent pasture grass for early grazing and will tolerate close grazing and traffic. It can be used in conjunction with a legume for hay production. The varieties of crested fall into two general types; the Fairway type such as Fairway, Ephraim, Roadcrest, etc., or the Nordan type, which includes Hycrest, Standard, Douglas, etc. The Fairway types are somewhat shorter and finer textured than the Nordan types and therefore are better adapted to reclamation and dryland turf areas. Of the Fairway types, Ephraim, Roadcrest and Ruff do display some rhizomatous growth and thus are best suited for use on reclamation sites or dryland turf areas.

Siberian Wheatgrass
Very similar to Crested in most respects. It is more drought tolerant than Crested, and will remain green and useable about two weeks longer. Also, it has moderate tolerance to alkali conditions. Improved varieties are available.

Slender Wheatgrass
A short-lived perennial bunchgrass with excellent seeding vigor. It will tolerate some alkali however not to the levels that Tall Wheatgrass will. It may mature late enough to be affected by drought especially in areas where average annual precipitation is less than 14 inches. Because of its excellent seeding vigor it is often used in small amounts to provide quick cover for other dryland varieties and is used in reclamation blends. Varieties of slender currently available are Pryor, Revenue, Copperhead and San Luis.

Intermediate Wheatgrass
A perennial, sod-forming grass with good drought tolerance, but somewhat less than crested. It initiates growth early and matures about 2 weeks later than crested, therefore with adequate moisture it will remain green and palatable throughout the early summer. It will resume growth in late summer-fall with moisture. Intermediate will respond to irrigation and can be seeded with legumes and other grasses for pasture. Intermediate works very well when seeded with alfalfa since its quality is high when the alfalfa is ready to cut. Yields of Intermediate/Alfalfa mixes have outyielded several other grass/alfalfa mixes. Several varieties are available including the most common Oahe, Greenar and Rush.

Pubescent Wheatgrass
A mildly sod-forming, long-lived grass, very similar to Intermediate in growth habit and development. It is a very palatable grass with somewhat better alkali tolerance than intermediate. Pubescent is somewhat more drought tolerant than Intermediate and is capable of growing under lower soil fertility. Like Intermediate it is an excellent soil builder. Pubescent, like Intermediate is useful as hay, or pasture, when seeded with alfalfa or other selected grass varieties. It will stay green and useable into the summer months when soil moisture is adequate. The word Pubescent is often misleading. It refers to the small hairs which are found on approximately 60 – 80% of the outer glumes on the seeds. It does not refer to the pubescence on the foliage. Several improved varieties of pubescent are available including Greenleaf, Manska, Mandan 759 and Luna. Mandan 759 and Manska are very good producers, and especially well adapted to Montana. Greenleaf was developed at the research center in Lethbridge, Alberta. It is easily established, and has a fair tolerance of saline conditions. Luna is a good producer, however it is not well adapted to the northern areas of Montana.

SUGGESTED SEEDING RATES GRASSES, LEGUMES, AND FORBS

SPECIES	ORIGIN	SEEDS/#[1]	PLS #S/ACRE[2] FULL SEEDING	COOL/WARM[3] IRR/DRY SOD/BUNCH
GRASSES				
Bluegrass, Big	N	882,000	2.0	C/D/B
Bluegrass, Canada	I	1,600,000	2.0	C/D/S
Bluegrass, Canby	N	900,000	1.0	C/D/B
Bluegrass, Kentucky	N	2,156,000	3.0	C/I/S
Bluegrass, Sandberg	N	900,000	2.0	C/D/B
Bluestem, Little	N	260,000	4.0	W/D/B
Bromegrass, Smooth	I	125,000	5.0	C/I or D/S
Bromegrass, Meadow	I	93,000	10.0	C/I or D/S-B
Bromegrass, Mountain	N	80,000	10.0	C/ I or D/B
Buffalograss	N	48,000	10.0	W/D/ST
Fescue, Hard	I	565,000	3.0	C/D/B
Fescue, Idaho	N	450,000	3.0	C/D/B
Fescue, Sheep	N	680,000	3.0	C/D/B
Fescue, Tall	I	242,000	4.0	C/I/B
Foxtail, Creeping - raw	I	720,000	3.0	C/I/S
Fults Alkaligrass	N	1,200,000	1.0	C/I or D/ S
Grama, Blue	N	825,000	2.0	W/D/ST
Grama, Sideoats	N	191,000	4.5	W/D/S-B
Hairgrass, Tufted	N	2,500,000	1.5	C/D/B
Indian Ricegrass	N	235,000	6.0	C/D/B
Needle and Thread	N	115,000	6.0	C/D/B
Needlegrass, Green	N	186,000	5.0	C/D/B
Orchardgrass	I	464,000	3.0	C/I or D/S
Prairie Junegrass	N	2,315,000	1.0	C/D/B
Prairie Sandreed	N	273,000	4.0	W/D/S
Reed Canarygrass	N	602,000	4.0	C/I/S
Ryegrass, Perennial	I	247,000	4.0	C/I/B
Saltlander (Blend)	I		12.0-15.0 (coated)	
Sand Dropseed	N	5,680,000	1.0	W/D/B
Switchgrass	N	389,000	3.0	W/I/S
Tiffany Teff	I	1,300,000	5.0-8.0 (coated)	W/I/B
Timothy	I	1,300,000	2.0	C/I/B
Wildrye, Altai	I	80,000	12.0	C/D/B
Wildrye, Basin	N	125,000	6.0	C/D/B
Wildrye, Beardless	I	181,000	6.0	C/D/F/B
Wildrye, Canada	N	115,000	7.0	C/D/B
Wildrye, Dahurian	I	75,000	12.0	C/D/B
Wildrye, Russian	I	170,000	5.0	C/I or D/B
WHEATGRASSES				
Beardless	N	109,000	6.0	C/D/B
Bluebunch	N	139,000	6.0	C/D/B
Crested, Fairway Type	I	200,000	4.0	C/D/B
Hybrid, Newhy	I	134,000	8.0	C/I or D/S
Intermediate	I	79,000	10.0	C/I or D/S
Pubescent	I	80,000	10.0	C/I or D/S
Siberian	I	163,000	5.0	C/D/NP/B
Slender	N	140,000	6.0	C/D/NP/B
Crested, Hycrest Type	I	175,000	5.0	C/D/B
Streambank	N	152,000	5.0	C/D/S
Tall	I	79,000	10.0	C/D/B
Thickspike	N	145,000	6.0	C/D/S
Western	N	93,000	8.0	C/D/S
INTRODUCED LEGUMES				
Alfalfa *raw seed/dryland rate*	I	225,000	5.0	D
Alfalfa *coated/dryland rate*	I	225,000	6.5	D
Alfalfa *raw seed/irrigated rate*	I	225,000	10 -- 12 bulk#	I
Alfalfa *coated/irrigated rate*	I	225,000	12 -- 15 bulk#	I
Alsike Clover	I	700,000	3.0	I
Birdsfoot Trefoil	I	418,000	3.0	I or D
White Clover (Ladino)	I	800,000	4.0	I
Milkvetch, Cicer	I	134,000	7.0	I or D
Red Clover	I	272,160	4.0	I or D
Small Burnett	I	42,243	20.0	D
Sainfoin	I	18,500	34.0	I or D
Sweetclover, Yellow	I	258,000	4.0	I or D
NATIVE FORBS AND LEGUMES				
Blanket Flower	N	157,000	7.0	perennial
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1. Suggested seeding rates are minimums and should be increased for irrigated if applicable and for broadcast seeding.
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C-COOL
D-DRYLAND
S-SOD
ST-STOLONS

W-WARM
I-IRRIGATED
B-BUNCHGRASS

Tall Wheatgrass
A tall growing, rather coarse, bunchgrass with excellent tolerance to alkali and saline conditions. Tall Wheatgrass is a late maturing wheatgrass which does best in wetter areas, however it does have adequate drought tolerance for most conditions. This variety is one of the most salt tolerant of the wheatgrasses and it has excellent seeding vigor. It can be used for pasture, however it should be planted in pure stands and fenced separately. If grazed early, it is quite palatable and nutritious. To reduce coarseness, it should be seeded heavier than other wheatgrasses. Improved varieties include Alkar, Orbit, and Jose, with Jose being the most palatable.

Western Wheatgrass
Commonly referred to as Bluejoint because of its grayish-blue appearance. It is a native perennial, sod-former with an extensive deep and spreading root system. It is therefore very drought tolerant. Due to its ability to grow well on heavy alkaline soils such as those found along river bottoms, it makes an excellent pasture or grass hay. Western produces an abundance of high quality forage, especially if cut shortly after heading. Western is generally slow to germinate and stands are relatively slow to establish. Because of its attributes it is very valuable for revegetation. Rosana is an improved variety of Western. It is a low growing variety, recommended for roadside seedings and disturbed areas on dryland. Another improved variety is Arriba.

Thickspike Wheatgrass
Also referred to as Northern Wheatgrass, it is a native drought tolerant, sod-forming perennial quite similar to Western Wheatgrass in appearance. Morphologically, it is similar to Streambank Wheatgrass. Thickspike will emerge three to four weeks earlier than western. It is a strongly rhizomatous plant, forming a tight sod under dryland conditions. Although its main use is for revegetation of disturbed sites, it is palatable and can be grazed. Due to its attributes of earliness, seedling vigor and drought tolerance, seedling establishment has been quite successful. Varieties include Critana, Schwendimar and Bannock.

Sodar Streambank Wheatgrass
A native cool season grass that was actually developed as a drought tolerant turf grass. It is a strong sod-former and thus is very well adapted for use in soil stabilization and other revegetation projects. Its dense, low growing sodding habit make it a lower maintenance grass. It is widely used on roadsides, airports, parking areas and other areas requiring a shorter, dense sod. We recommend blending it with Canada Bluegrass for dryland airstrips.

Newhy RS Hybrid
A cross between Bluebunch Wheatgrass and Quackgrass. Although the plant is morphologically unique, seed is very similar to quackgrass, therefore Newhy can only be marketed as a class of certified seed. Newhy combines the best of both parents, which are: salinity and alkalinity tolerance, good forage quality (comparable to Intermediate) early spring growth with good palatability (later than most wheatgrasses), rapid recovery after grazing and good seedling vigor.

Bluebunch and Beardless Wheatgrass
These native grasses are very similar in appearance, adaption and primary use. Whitmar is an awnless variety and is less prevalent than bluebunch. Both are an important species to the intermountain west. They are very palatable, both spring and fall, with good seedling vigor. Generally considered bunchgrasses, they will produce short rhizomes with higher moisture. As with most wheatgrasses, over grazing will reduce standlife. Note: Secar Bluebunch Wheatgrass is also called “Snake River Wheatgrass”.

Saltlander
Saltlander is actually a blend of three grasses; 50% AC Saltlander Green Wheatgrass, 25% Revenue Slender and 25% Tall Forage Type Fescue. It is designed as a blend for saline soils with the Slender and Tall Fescue serving as a companion species until the AC Saltlander establishes. The salt tolerance of Saltlander is equal to that of Tall Wheat Grass with much better palatability. With an extensive root system Saltlander is useful in managing saline-seep areas. A salt tolerant alfalfa variety such as PGI427 can be seeded in conjunction with Saltlander to manage saline area. Saltlander seed is coated to aid in establishment.

Wildryes

Russian Wildrye
An excellent perennial bunchgrass used primarily as a dryland pasture grass. It will produce very well on poor soils, and will respond to better soils or to fertilizer. It is a very early grass, yet grazing can be delayed until late June since it retains its palatability and nutritive content significantly longer than many of the other dryland grasses. If adequate moisture is available or irrigation water is applied, recovery after grazing is rapid. Several improved varieties are available, including Swift, Vinall and Bozoisky. Of the varieties currently available, Bozoisky Select is preferred by most. It has improved seedling and vegetative vigor, leafiness and production as compared to other varieties.

Altai Wild Ryegrass
A perennial grass released by Canada in 1976. It was originally introduced into Canada from Siberia in 1934. It is a winter-hardy , drought tolerant variety considered as being mildly rhizomatous, and tolerant to moderate saline conditions (similar to the salt tolerance of Tall Wheatgrass). The root system of Altai can penetrate to a depth of 10 to 14 feet, therefore it is extremely drought tolerant. It is an excellent pasture grass which remains palatable and nutritious into the fall and early winter. It is an excellent grass for winter forage since its erect form will project above the snow and allow cattle to have access to the basal leaves. Although the seed is about three times as large as those of Russian Wildrye, it should not be seeded excessively deep since seedlings are slower to establish.

Shoshone Beardless

A native rhizomatous grass most commonly used for reclamation in wetter saline areas. Since it is palatable, it can be grazed by livestock and wildlife. A key to establishment is to plant in the fall since seed must go through a cold treatment for maximum germination.

Great Basin Wildrye
A native bunchgrass with excellent drought tolerance. The primary use is for restoration, especially in alkaline soil areas. The plant is very tall and coarse. Optimum grazing time is fall and early winter. Varities include Magnar and Trailhead.

Canada Wildrye
A native short lived bunchgrass often used for reclamation purposes since it is quick to establish. It is non-competitive with other native species. It can be also grazed or hayed.

Dahurian Wildrye
A shorter lived tall bunchgrass which is quick to establish and will provide good growth the year of establishment. It can be used for a short rotation hay crop or pasture or to increase establishment year production of Russian or Altai Wildrye fields. Maximum production of Dahurian will occur in the second year.

Other Grasses

Green Needlegrass
A native bunchgrass which is a pre-dominant specie on native range throughout the Northern Plains area. Like many natives, it is slow to establish but once established is long lived. The preferred variety is Lodorm which is easier to establish because of lower seed dormancy.

Needle & Thread
A native bunchgrass not conducive to grazing because of sharp awns. It is sometimes used for range rehab where natives are preferred or for reclamation.

Indian Ricegrass
A native drought tolerant bunchgrass with good adaptation for sandy sites. It is a very palatable and nutritious grass with attraction for birds and other small game. Needs to be fall seeded and deeper than most grasses.

Sherman Big Bluegrass
A very early native bunchgrass with wide adaptation. It reaches its optimum useage period 3 – 4 weeks earlier than crested wheatgrass. Although it does offer potential for early grazing, its predominant use in the Northwest is for reclamation, burned over areas, roadsides, etc.

Canbar Canby Bluegrass
A vigorous quick growing early forage grass, primarily used in native restoration.

Sandberg Bluegrass
A native bunchgrass with good drought tolerance. It is best used early for pasture, but has good season-long palatability.

Warm Season Grasses

All grasses previously listed are cool season which break dormancy in early spring and continue growth well into fall. Warm season grasses by comparison will not resume growth until later when soils warm up (usually mid to late May) and go into dormancy in early-mid September. There are many warm season grasses, however only those more prevalent in Montana and similar areas are listed.

Prairie Sandreed
A sod former with potential height of 4 – 5 feet. As the name suggests, it has a good adaption to sandy sites and is most commonly used for soil stabilization.

Buffalograss
A short (4-7”) growing, low maintenance, drought tolerant grass which spreads via above ground stolons. Its primary use has been for reclamation of disturbed areas, and for dryland turf areas such as lawns, picnic areas, campsites, etc. When used for such areas, it offers a very attractive, soft textured cover. One disadvantage of Buffalograss turf is its non-competitive nature, thus allowing for invasion of grassy weeds. Therefore we recommend a mix of one of the improved turf type Buffalograss varieties and Blue Grama in a ratio of 70% Buffalograss and 30% Blue Grama. Blue Grama will, with time, form a sod.

Blue Grama
Has similar adaption to Buffalograss with a somewhat taller growth habit and better drought tolerance. It has a characteristic flag seed head which is very unique to Blue Grama.

Little Bluestem
One of the most widespread of the native warm season grasses. It is native to 45 of the 50 states, and does well on a wide range of well drained soils. It is often used as an interest grass with other lower growing natives in low maintenance, and ornamental mixes. It grows to a height of approximately 24-30” and turns a brilliant russet-red in the fall.

Side-Oats Grama
A native sod forming grass with good drought tolerance. As the name suggests, seed resembling oats hangs to one side of the seed head. As livestock forage, it is palatable and remains so even into the fall and winter. It is often used for erosion control, landscaping and ornamental use. Plant height range is 12-24”.

Turf Grasses

Irrigated

Kentucky Bluegrass is the most widely used and adapted of the turf grasses. It is fine textured, dark green, hardy and forms a dense aggressive turf due to its rhizomatous growth habit. Bluegrasses do require increased irrigation and fertilizer, especially nitrogen, to thrive. In addition to common Kentucky bluegrass, there are many excellent private varieties available offering improved texture, color, growth habit, disease resistance and in certain varieties improved drought tolerance. Bluegrass is often blended with Fine-leaf Perennial Ryegrass and/or Creeping Red Fescue to offer diversity and improved disease resistance.

Creeping Red Fescue
A sod-former, adaptable to a wide range of conditions. Red Fescue has good shade tolerance and moderate salt tolerance. It could be used with Fults Alkaligrass in areas with higher salt content.

Fine-Leaf Perennial Ryegrass
Similar to Bluegrass, with fine texture and good color and is often used in blends with Bluegrass. Perennial Ryegrasses are known for quicker germination and repair and thus are well adapted for athletic fields, golf course tees, etc. Like bluegrass, there are many improved private varieties available. It can be susceptible to winter kill in colder northern climates.

Fults Alkaligrass
A specialized sod-forming grass which has good salt tolerance, and will withstand periodic flooding. It does have some tolerance to drier conditions and can be used for soil stabilization where salt is an issue.

Turf-Type Tall Fescues
Newer varieties have led to renewed interest in the Tall Fescues for turf usage. Proprietory Tall Fescues offer good color, fine texture and good density. Tall Fescues have better stress and drought tolerance than Bluegrass and therefore fit in areas of more limited moisture, sandier soils, etc. They can be used in areas of full sun to moderate shade.

Dryland

Several grasses previously covered are adaptable for turf usage in drier areas and where lower maintenance is preferred. Among these varieties are *Hard Fescue, Sheep Fescue, Fairway type Crested Wheatgrass, Turf-type Tall Fescue, Sodar Streambank, Canada Bluegrass and Fults Alkaligrass* (saline areas). In addition to our Dryland Turf Mix, we can do custom blends.

Annual Forages

It may be necessary to plant an annual forage crop to relieve an unexpected hay shortage, or while waiting to establish an alfalfa planting. Annuals that can be used are *Beardless Barleys, Oats, Forage Peas, Hay Millet*, and *Sorghum X Sudans*. Our *Western Forage Blend,* consisting of Beardless Barley, Oats and Forage Peas has proven to be a high yielding and quality forage with excellent palatability. Our customers can attest as to the above. Warm season annual forages include Siberian Millet and Sorghum X Sudans. These are high producers, but as warm season crops they should not be seeded prior to June 1. Be aware that Millet cannot be fed to horses since it is toxic to the urinary system.

Tiffany Teff
A warm season annual grass producing a high quality hay similar to timothy with a protein content from 12 - 17 %. It is suitable for double cropping after a cool season annual. Since Teff seed is very small, a firm seedbed such as that for alfalfa is a must. Seed must be planted after any risk of frost has passed at a rate of 5-8#'s per acre.

Turf Mixes
Seed Turf Mixes at 3-5# per 1,000 Square Feet (irrigated mixes)

Northern Lawn Mix
60% Kentucky Bluegrass
40% Creeping Red Fescue

Northern Lawn Mix W/Clover
57% Kentucky Bluegrass
40% Creeping Red Fescue
03% White Dutch Clover

Fast & Fine Mix
50% Kentucky Bluegrass
40% Creeping Red Fescue
10% Fine Leaf Perennial Ryegrass

Athletic Field Mix
40% Kentucky Bluegrass
30% Creeping Red Fescue
30% Fine Leaf Perennial Ryegrass

Shady Mix
30% Kentucky Bluegrass
70% Creeping Red Fescue

Fairway Mix
70% Kentucky Bluegrass
30% Creeping Red Fescue

Rough Mix
25% Hard Fescue
25% Sheep Fescue
25% Turf-Type Tall Fescue
15% Fairway Crested Wheatgrass
10% Canada Bluegrass

Dryland Turf Mix
25% Hard Fescue
20% Sheep Fescue
20% Fairway Crested Wheatgrass
20% Turf-type Tall Fescue
10% Sodar Streambank Wheatgrass
05% Canada Bluegrass
Seed at 1 – 2 pounds per 1,000 Square Feet

Pasture Blends

Fairfield Mix
25% Potomac Orchardgrass
20% Meadow Brome
15% Smooth Brome
15% Spring Green
10% Tetraploid Perennial Ryegrass
10% Climax Timothy
05% Alsike Clover
Seed at 14 – 16 pounds per acre

Northern Dryland Mix
25% Intermediate Wheatgrass
20% Pubescent Wheatgrass
15% Hycrest crested Wheatgrass
15% Slender Wheatgrass
10% Dahurian Wildrye
10% Paiute Orchardgrass
05% Russian Wildrye
Seed at 8 – 10 pounds per acre

Horse Pasture Mix
30% Potomac Orchardgrass
20% Meadow Brome
15% Pasture Alfalfa
15% Climax Timothy
10% Smooth Brome
10% Tetraploid Perennial Ryegrass
Seed at 14 – 16 pounds per acre

Wetland Pasture Mix
25% Garrison Foxtail
25% Climax Timothy
15% Reed Canarygrass
15% Streaker Redtop
10% Alsike Clover
10% Tufted Hairgrass
Seed at 12 - 14 pounds per acre

Flathead Mix
20% Potomac Orchardgrass
20% Meadow Brome
30% Smooth Brome
30% Tall Fescue
Seed at 14 – 16 pounds per acre

Dryland Slope Mix
30% Fairway Crested Wheatgrass
30% Hard Fescue
10% Slender Wheatgrass
10% Sodar Streambank Wheatgrass
10% Critana Thickspike Wheatgrass
10% Smooth Brome
Seed at 8 – 10 pounds per acre

Western Native Mix
25% Critana Thickspike Wheatgrass
25% Slender Wheatgrass
20% Green Needlegrass
20% Western Wheatgrass
10% Secar Bluebunch Wheatgrass
Seed at 8 – 10 pounds per acre

Bird Habitat Mix
25% Eski Sainfoin
20% Tall Wheatgrass
20% Pubescent Wheatgrass
10% Small Burnett
10% Ladak ’65 Alfalfa
05% Yellow Blossom Sweet Clover
05% Paiute Orchardgrass
05% Blue Flax
Seed at 15 pounds per acre

Rocky Mountain Wildlife Mix
25% Eski Sainfoin
20% Meadow Brome
20% Potomac Orchardgrass
15% Climax Timothy
10% Mountain Brome
05% Alsike Clover
05% White Clover
Seed at 16 - 18 pounds per acre

NOTE: Due to factors such as seed availability, price, introduction of new varieties, etc. we may periodically change percentages and varieties in the above blends.

Native Wildflowers

Also referred to as forbs, these are gaining interest and popularity in reclamation blends as well as for recreation and landscaping sites, both commercial and residential. The following list is not all inclusive, but does include many species adapted to our market area. Those listed are all perennials unless otherwise noted.

Blue Flax
Widely used as a specimen plant on highway roadsides and other reclamation sites. It is also well adapted to certain landscaping projects. Plant height is 12 – 24”. Its bloom period is season long, and will generally bloom the first year. Flower color is a bright light blue, an attractant for butterflies.

Blanketflower
Blooms are a daisy-like flower in shades of yellow, scarlet, and bronze. Plant blooms in summer-fall, and grows from 18 – 24”. It is easy to grow on most sites in full sun to partial shade.

Purple Prairie Clover
A deep rooted legume, growing to a height of 1 – 3 feet with a light purple flower. Blooming period is mid – season (June – July)

Plains Coreopsis
An annual yellow daisy-like flower with center red-maroon band. It prefers lower sites in full sun. Bloom period is late spring – summer. Height to 24”.

Coneflowers
Several species are available including Purple Coneflowers, growing from 2 – 3 feet with a purple flower and Upright and Mexican Red Hat growing from 1 – 3 feet. Mexican Red Hat has a predominant red-bloom flower, while upright is a yellow flower.

Rocky Mountain Beeplant
An annual that grows from 2 – 4 feet and blooms season long with a purple-pink flower. It establishes quickly and will tolerate sandy soil. It will re-seed itself.

Western Yarrow
An aggressive fern like plant mostly used for reclamation sites since it is

SUGGESTED SEEDING RATES GRASSES, LEGUMES, AND FORBS

SPECIES	ORIGIN	SEEDS/#[1]	PLS #S/ACRE[2] FULL SEEDING	COOL/WARM[3] IRR/DRY SOD/BUNCH
GRASSES				
Bluegrass, Big	N	882,000	2.0	C/D/B
Bluegrass, Canada	I	1,600,000	2.0	C/D/S
Bluegrass, Canby	N	900,000	1.0	C/D/B
Bluegrass, Kentucky	N	2,156,000	3.0	C/I/S
Bluegrass, Sandberg	N	900,000	2.0	C/D/B
Bluestem, Little	N	260,000	4.0	W/D/B
Bromegrass, Smooth	I	125,000	5.0	C/I or D/S
Bromegrass, Meadow	I	93,000	10.0	C/I or D/S-B
Bromegrass, Mountain	N	80,000	10.0	C/ I or D/B
Buffalograss	N	48,000	10.0	W/D/ST
Fescue, Hard	I	565,000	3.0	C/D/B
Fescue, Idaho	N	450,000	3.0	C/D/B
Fescue, Sheep	N	680,000	3.0	C/D/B
Fescue, Tall	I	242,000	4.0	C/I/B
Foxtail, Creeping - raw	I	720,000	3.0	C/I/S
Fults Alkaligrass	N	1,200,000	1.0	C/I or D/ S
Grama, Blue	N	825,000	2.0	W/D/ST
Grama, Sideoats	N	191,000	4.5	W/D/S-B
Hairgrass, Tufted	N	2,500,000	1.5	C/D/B
Indian Ricegrass	N	235,000	6.0	C/D/B
Needle and Thread	N	115,000	6.0	C/D/B
Needlegrass, Green	N	186,000	5.0	C/D/B
Orchardgrass	I	464,000	3.0	C/I or D/S
Prairie Junegrass	N	2,315,000	1.0	C/D/B
Prairie Sandreed	N	273,000	4.0	W/D/S
Reed Canarygrass	N	602,000	4.0	C/I/S
Ryegrass, Perennial	I	247,000	4.0	C/I/B
Saltlander (Blend)	I		12.0-15.0 (coated)	
Sand Dropseed	N	5,680,000	1.0	W/D/B
Switchgrass	N	389,000	3.0	W/I/S
Tiffany Teff	I	1,300,000	5.0-8.0 (coated)	W/I/B
Timothy	I	1,300,000	2.0	C/I/B
Wildrye, Altai	I	80,000	12.0	C/D/B
Wildrye, Basin	N	125,000	6.0	C/D/B
Wildrye, Beardless	I	181,000	6.0	C/D/F/B
Wildrye, Canada	N	115,000	7.0	C/D/B
Wildrye, Dahurian	I	75,000	12.0	C/D/B
Wildrye, Russian	I	170,000	5.0	C/I or D/B
WHEATGRASSES				
Beardless	N	109,000	6.0	C/D/B
Bluebunch	N	139,000	6.0	C/D/B
Crested, Fairway Type	I	200,000	4.0	C/D/B
Hybrid, Newhy	I	134,000	8.0	C/I or D/S
Intermediate	I	79,000	10.0	C/I or D/S
Pubescent	I	80,000	10.0	C/I or D/S
Siberian	I	163,000	5.0	C/D/NP/B
Slender	N	140,000	6.0	C/D/NP/B
Crested, Hycrest Type	I	175,000	5.0	C/D/B
Streambank	N	152,000	5.0	C/D/S
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D-DRYLAND
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ST-STOLONS

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I-IRRIGATED
B-BUNCHGRASS

rhizomatous. It is very drought tolerant and is found on many native range sites. Flower is a rather inconspicuous white.

Montana Wildflower Mix
A blend of wildflowers that grow well here. Seeding rates on Wildflowers will vary due to a wide range in seed count per pound. Please ask about the rate per 1,000 square feet.

NOTES