

# Sharp Bros. Seed Co.

101 East 4th Street Road  
Greeley, CO 80631  
970/356-4710



## TECHNICAL GUIDE



PREMIUM IRRIGATED PASTURE MIX stand in Sheridan Co. Kansas

## PREMIUM IRRIGATED PASTURE MIX

(Also known as — Pasture Mix NO. 6 or PM6)

### Productivity:

**Premium Irrigated Pasture Mix** is a blend of five cool season grass species, which diminishes the risk factor that producers encounter when planting a single species pasture. Forage production is maximized by the diverse growth habits of the five species. Growth initiates early in the spring, continues through the summer and late into the fall. Because of productivity differences that occur from year to year (as with any crop) and differences in the cattle herds making use of this pasture, Sharp Bros Seed Co. makes no guarantee as to the productivity any producer may achieve. Stocking rates referenced are based upon the experiences of producers who use good pasture management, optimum fertility and timely irrigation.

The productivity of cool season pasture varies through the season and for purposes of discussion we have described two periods. Forage production is most vigorous during the cool months, approximately April, May, and June in the spring and mid-August through mid-October in the fall. Productivity is reduced during the heat of the summer, approximately July through mid-August. This period is referred to as the summer slump.

### Stocking rate:

\*Cool months: 1500 to 1800 lbs. live animal weight per acre

\*Summer slump: 1000 to 1200 lbs. live animal weight per acre (an adjoining acreage of warm season pasture, either perennials such as native range, or annuals such as sorghum-sudangrass, can effectively "pick up the slack" during the lower productivity of the summer slump period.)

### Uniform Palatability:

Since an ungrazed plant is a wasted plant, maximum pasture productivity can only be achieved when uniform grazing is achieved. Uniform grazing is a result of uniform palatability and a well managed rotational grazing pattern. The species of **Premium Irrigated Pasture Mix** were suggested by USDA

researchers because of overall productivity and uniform palatability.

### **Adaptability:**

Within most pastures, there is a variety of environments such as, sandy knobs, low spots that tend to pond, and side slopes that frustrate irrigators. The species that make up **Premium Irrigated Pasture Mix** act as a team to thrive and produce quality forage in all of these different environments.

### **Long Pasture Life:**

With proper management **Premium Irrigated Pasture Mix** can stay productive for over 20 years.

### **Management:**

Rotational grazing is the best system for maximizing animal productivity and maintaining a vigorous pasture. In this system the grazing herd is restricted to one paddock for a period of intense grazing, followed by movement to a new paddock for another period of intensive grazing. This process is repeated until the herd returns to the first paddock at which time the rotation starts again. Maximum productivity is achieved when two basic principles govern rotational grazing. First – grasses are capable of vigorous regrowth only when sufficient leaf area remains (after grazing) to allow efficient photosynthesis to occur. **Premium Irrigated Pasture Mix** should not be grazed closer than 4 inches (in established pasture). Second – grasses need a period of rest between grazing in order to maintain a strong crown and root system as well as produce abundant forage. Many producers schedule 7 days of grazing, followed by 21 days of rest per paddock as an ideal scenario.



Electric Fence, single wire, partitions paddocks on center pivot of cool season grass mix. Notice that petition fence is “off center” or not on the radius of the circle. This allows the irrigation system to “walk” over the fence one tower at a time.



Sprinkler tower equipped to run over electric petition fence. Note pipe that has been bolted onto the frame. This prevents fence wire from becoming entangled in running gear.

Producers who follow these principles will capture the best animal gains and maintain healthy vigorous pasture that will produce year after year. Stocking rates should be watched closely and should be adjusted as animals gain and forage production changes through the season. Determine stocking rates by live animal weight per acre instead of animal numbers per acre.

Even with thorough planning, producers may find that pastures are temporarily overstocked at times as a result of unpredictable weather patterns. Since it is not always practical to reduce stocking rates immediately, producers are faced with the choice of allowing closer grazing (below 4 inches) or reducing the rest periods between grazing. Experienced producers report that the best choice is to reduce the rest periods between grazing. In other words, maintaining a minimum amount of leaf area is more critical than allowing a full rest period. Another time when shorter grazing periods (and shorter rest periods) may be desirable is during the spring. By moving the cattle through the rotation sequence more rapidly, rank growth can be controlled and grasses will produce fewer seed heads. After the period of rapid growth in the spring, a longer rotation sequence should be used.

All paddocks should be allowed to regrow to a height of 12 inches prior to the first hard freeze of the

fall. This will allow for adequate carbohydrate (energy) reserves to accumulate in the crown of the grass plants. Energy reserves are essential for vigorous growth in the following spring. Following a freeze cattle may be allowed to graze the “standing hay” crop without damaging the grass vigor. Cattle grazing cool season grass pasture frequently exhibit a desire for dry feed. Producers may choose to offer a low cost dry feed such as corn stalks or wheat straw free choice. **Premium Irrigated Pasture Mix** is high in protein, therefore, high protein supplemental forages would be of little additional value. Debate continues among nutritionists and stockmen as to the effect that dry feed supplementation has upon rate of gain in this situation. If you have an opinion, let us know, we'd like to hear it.



May 24 Finney County, Kansas Garrison creeping foxtail growing in a slough area within a circle of cool season grass. This area has been grazed vigorously and is pictured in resting—regrowth stage. Creeping foxtail produces quality forage in what would otherwise be a waste area



May 24 Kearney County, Kansas Close up of **PREMIUM IRRIGATED PASTURE MIX** in early rest-regrowth stage of a rotational grazing system. Intermediate wheatgrass clump (center of picture, darker leaves) surrounded by meadow brome, smooth brome and orchard grass. Paddock exhibits very uniform grazing.

## **Establishment: Best Management Practices and What to Expect**

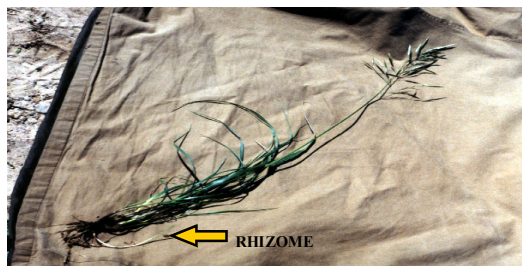
Compared to many perennial pastures, **Premium Irrigated Pasture Mix** is fast to establish. When planted in late summer or early fall of one year it can be moderately grazed or hayed the next spring and summer. Fields are generally at full productivity one year after planting. Following are suggestions and observations that may be useful.

The five perennial species of grass that make up **Premium Irrigated Pasture Mix** produce smaller, lighter weight seed than the seed of most grain crops. As a result, seedling vigor is low as compared to common annual grains. Ideally the seed is placed 1/8 to 1/4 inches deep in a firm seed bed. Seed should be planted at least four weeks prior to the average first fall freeze date. A grass drill with seed box agitation and depth bands is recommended for planting **Premium Irrigated Pasture Mix**. During the germination and seedling stage emergence is assisted by frequent light irrigations. Old crop residue is helpful in preventing wind erosion. Fields without adequate cover may be planted with a cover crop such as oats, at a recommended rate of 15 lbs per acre. Sharp Brothers can blend oats with the **Premium Irrigated Pasture Mix** seed for ease of handling. Once the grass seed has reached the 3 to 5 leaf stage it is capable of more vigorous growth, if temperatures and soil fertility allow. Ideally, a minimum of 45 lbs. of nitrogen per acre should be available at this stage of growth. Since the root system is shallow in the seedling stage this nitrogen must be in the top 6 inches to be effective. Producers should be observant that the 3 to 5 leaf stage has been reached in order to make certain that adequate nitrogen is available. If not, valuable plant growth can be lost. Additional nitrogen applications will be necessary through the season with total rates frequently reaching 180 to 220 lbs. nitrogen per acre during the establishment year. See “Fertility” for other comments about nutrient use and application.

Allow the grass to reach the heading stage before haying or grazing the first spring. Leave a minimum of 6 inches growth the first spring. Established stands can be grazed as close as 4 inches. During the establishment year, grasses will spread by means of additional tillering and rhizome growth. Moderate use during this period will allow sufficient energy for the growth that is necessary for “filling in” between drill rows. “Filling in” will produce a sod that leaves nearly all of the soil surface covered, creating a crop that is highly productive because it is able to capture most of the available

sunlight for photosynthesis, even when grazed down.

Following are several pictures showing irrigated cool season grass fields and individual plants during the establishment year.



May 23 Finney County, Kansas Meadow brome plant , seeded the previous fall.. Note rhizome, meadow brome typically produces fewer rhizomes than does smooth brome.



May 23 Finney County, Kansas Garrison creeping foxtail seeded the perilous fall. Note rhizome developing. This characteristic will allow it to spread in mud hole sloughs which may develop in irrigated pasture.



May 23 Finney County, Kansas Orchardgrass plant seeded the previous fall.



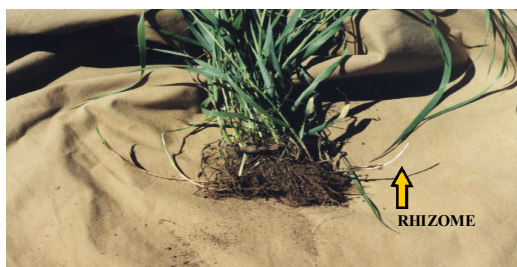
Oct. Sheridan Co. Kansas **PREMIUM IRRIGATED PASTURE MIX** growth approximately 3 weeks after planting.



May 23 Finney county, Kansas Smooth brome plant seeded the previous fall. Note rhizomes which will allow this plant to spread.



Sheridan Co. Kansas **PREMIUM IRRIGATED PASTURE MIX** initiating growth after a very tough winter , seeded the previous fall.



May 23 Finney County, Kansas Close up of rhizomes on smooth brome plant seeded the previous fall.

**Premium Irrigated Pasture Mix** consists of the following cool season grasses: Meadow Brome, Smooth Brome, Orchardgrass, Intermediate Wheatgrass, and Garrison Creeping Foxtail. The recommended seeding rate is 25 lbs. per acre.

### Irrigation Requirements:

High Plains producers report that weekly irrigation applications to their **Premium Irrigated Pasture Mix**

rarely exceed 3/4 to 1 inch per week. If allotted water is available, application rates may be increased to 1 1/2 inches per week during droughty periods, particularly in spring and fall when productivity is high. During the "summer slump" period applications rarely exceed 3/4 inch since heat limits yield potential and additional moisture would have limited benefits. Note that in order for grasses to remain vigorous and water efficient, a strong root system must be maintained. Leaving at least 4 inches of growth during the grazing period, resting the grass, and adequate fertility will maintain a strong root system.

Application rates per revolution of the sprinkler system will vary depending upon infiltration rate and soil type. Generally a deep soaking is best but excess runoff may necessitate lighter application rates.

Producers with low gallon age sprinklers may find irrigated cool season pasture to be a profitable use of such land. A sprinkler applying 450 gallons per minute will complete a 1 inch application on 120 acres in 5 days.

### **Use of Effluent (Waste Water) from confined livestock feeding operations or sewage treatment plants.**

Cool season irrigated pasture provides an excellent opportunity for profitable and relatively trouble free use of waste water. Advantages include a large application window, including the spring, summer and fall months. Few other crops are actively growing over such a long period of time, converting potential environmental pollutants into valuable forage. In addition waste water is not likely to produce serious "crop burn" on perennial cool season grass in cases of accidental over application. As compared to annual crops where damage to seedlings is always a risk, the perennial nature of **Premium Irrigated Pasture Mix** is a distinct advantage.

### **Weeds:**

During the establishment year, winter annual grassy weeds are the biggest threat to a **Premium Irrigated Pasture Mix** planting. These weeds would include cheatgrass, downy brome, Japanese brome, volunteer winter wheat, winter barley or rye. Avoid fields where this could be a potential problem. After establishment these weeds are not generally a problem since as annual seedlings they are palatable and cattle are likely to graze them out.

Many of the summer annual grassy and broadleaf weeds which may have been a problem in row crop acres will not be troublesome in **Premium Irrigated Pasture Mix**. As palatable seedlings they too are often grazed out.

Weed species that do become problems are usually restricted to unpalatable broadleaf species. This may include winter annuals such as mustard (although hoof action of grazing animals frequently reduces populations of weed seedlings in this category) and summer annuals such as buffalo bur.

As a general rule, herbicide use on **Premium Irrigated Pasture Mix** is light. The thick canopy and vigorous growth limits the weeds ability to compete.

### **Insects:**

Economically damaging levels of insects are an infrequent problem in **Premium Irrigated Pasture Mix**. Producers report that they seldom need to treat insects. Occasionally grasshopper populations build to the point that treatment is necessary. Fields should be frequently scouted during the fall and spring of the establishment year as various insect species exhibit some preference for the seedling grass. Once established, the grass is less attractive to many insects.

## FERTILITY:

### Nitrogen:

Highly productive fields of **Premium Irrigated Pasture Mix** may require from 200 to 250 lbs. of nitrogen per acre per year. Cool season grasses are highly nitrogen responsive. Even with the higher nitrogen fertilizer prices that have been common through 2000 and 2001, producers report that adequate application rates provide excellent return on the invested fertilizer dollar. Nitrogen is best applied as multiple applications through the season. This is critical on sandy soils. Make certain that adequate nitrogen is supplied to allow for vigorous growth in the fall, prior to the first hard freeze. As stated earlier, spring vigor is determined by energy reserves accumulated in the fall.

### Phosphorous:

Maintain soil phosphorous levels similar to what would be needed for optimum production of row crops. Once the phosphorous fertility has been built to an adequate level, producers find that maintaining that level requires lower annual phosphate application rates than would be typical for row crop production. Grazing animals remove large amounts of phosphorous in the forage they consume. However, significant quantities of phosphorous are returned to the field in the manure. Consequently net phosphorous removal is lower than one may expect.

### Potassium, sulfur, zinc and other nutrients:

Apply according to soil test results.



May 23 Finney County, Kansas Close up of field planted the previous fall..



May 21 Sheridan Co Kansas **PREMIUM IRRIGATED PASTURE MIX** seeded the previous fall.



May 21 Sheridan Co Kansas Thriving **PREMIUM IRRIGATED PASTURE MIX** stand with many satisfied customers.



May 23 Finney County, Kansas View of field planted the previous fall. In spite of harsh weather conditions this producer was able to establish a strong stand. Grazing or haying will probably be initiated in early to mid June.