



## AGRICULTURE

### FORAGES - PERENNIAL

## Russian Wildrye for Pasture

October 2009

### 1. Description

Russian wildrye (*Psathyrostachys junceus*) was introduced to Canada from Siberia in 1926. It is a long-lived perennial bunch grass adapted to semiarid climates. The leaves of Russian wildrye are mostly basal and it is best adapted to pasture use. The seed stalks are 60-120 cm (24 to 48 inches) tall and seed is formed in a dense spike.

### 2. Adaption

Russian wildrye is adapted to the Brown, Dark brown and even Black soil zones. It has been generally used for pasture in the northern regions of the Great Plains. It is most easily established and is most productive on loam and clay loam soils. Sandy soils may dry out before the seedling is self sustaining. Russian wildrye is very productive in seep areas and tolerates moderate salinity. As a seedling, Russian wildrye does not compete well with invading weeds. Russian wildrye maintains its forage quality even when mature. It makes much better summer and fall pasture than crested wheatgrass. It may be grazed late into the fall and winter and livestock will do well on it.

### 3. Varieties

'Swift' Russian wildrye is the most readily available variety. It was selected by 'depth of seeding' studies and may be more tolerant of deep seeding than previous varieties. It does not develop any faster than older varieties. 'Mayak' is also available. 'Tetracan' is the newest variety in Canada. It is the first tetraploid variety of Russian wildrye and has twice the chromosome number of 'Swift' and 'Mayak'. This is reflected in larger seed, bigger heads and wider leaves than the other varieties. It may have more seedling vigor. Results of tests conducted by the Saskatchewan Forage Council indicate no large differences among the three varieties for forage yield.

### 4. Stand Establishment

#### *Preparation*

Establishing a pasture of Russian wildrye will require preplanning at least a year before seeding. The site should be selected with the following in mind, ie. soil texture and fertility, topography, location of water, grazing system to be applied, etc. Perennial weeds must be controlled in advance of seeding. Straw and chaff should be spread or removed prior to seeding.

#### *Date of seeding*

Russian wildrye can be difficult to establish, due to its slow growth as a seedling. To overcome this characteristic, it is important to seed into firm, moist soil at a depth of 2.0-2.5 cm (3/4 to 1 inch). If the weather co-operates, the seedling roots will have sufficient time to grow down into more stable moisture conditions before the surface dries out. The weather is more likely to be favorable in spring, ie. April to early June, for establishment of the seedling. One alternative, if conditions are right, ie. prepared seed bed with good surface moisture, is to seed from August (after summer heat) up to mid September. Seedlings need two to three leaves to survive the winter. The advantage of late summer seeding is that this pasture should be available for grazing by summer or fall of the following year, especially if sown with a fast-growing grass i.e. slender wheatgrass. Another alternative for producers is 'dormant' seeding. By seeding late in October, more time is usually available to devote to setting drills and preparing seedbeds. The disadvantage is that there is no control over weather conditions through winter and spring. The seed may germinate prematurely during a winter thaw and then winter-kill. Conditions may be dry in the spring. In spite of these limitations, many producers have used dormant seeding successfully.

#### *Companion crop*

If a companion crop is used, choose a less competitive annual, reduce the seeding rate, and use one-half the drill runs. Sow the forage crop after the annual at right angles to the companion crop. Some producers have modified drills to sow the annual and perennial in alternate rows (with suitable adjustments for seeding depth).

## 5. Row Spacing and Arrangement

Once established, Russian wildrye is very competitive with legumes and other grasses. Kilcher and Heinrichs (1971) used row spacing and row arrangement to address this characteristic. Row spacings up to 90 cm (3 feet) have been recommended but produce a rough field prone to erosion. (All Russian wildrye pastures are very 'rough'). Wider rows may result in more stems/less leaves (Jefferson and Kielly 1994). Weeds may invade the bare ground. However, wider row spacings will result in more forage in a dry year. Narrower spacings of 35 - 55 cm (14 to 20 inches) are a reasonable compromise for pasture and hay. This will depend on row arrangement and mixtures as well.

Competition between species can be changed by seeding in an alternate row or cross-seeding pattern. This is especially recommended for Russian wildrye-legume mixtures. Grazing management becomes more complex as grass or legume may be preferred or may predominate at any given season. If the legume is alfalfa, then bloat may be a hazard. However, separation is recommended to extend the productive life of the legume and the pasture.

Russian wildrye may be combined with other faster-growing grasses to hasten establishment. Dahurian wildrye or slender wheatgrass have been tried at Swift Current. It is recommended that the rapid-growing grass be sowed in alternate rows with the legume and across the Russian wildrye. Sweet clover may also be used in the mixture although yields and competition of sweet clover are difficult to predict.

## 6. Forage Production

Russian wildrye is less productive than most introduced forages. This may be related to the greater forage protein and its higher requirements for nitrogen than most grasses. In 25 years at Manyberries, Alberta, Russian wildrye produced 589 kg/ha (540 lb/ac) compared to 850 kg/ha (780 lb/ac) for crested wheatgrass and 403 kg/ha (370 lb/ac) of short grass native range (Smoliak and Dormaar 1985). At Swift Current, Lawrence and Heinrichs (1968) reported yields of 654 kg/ha (600 lb/ac) for Russian wildrye over a 15 year period. These yields are increased substantially by growing Russian wildrye and alfalfa together. In the Swift Current test, Russian wildrye-alfalfa produced 1036 kg/ha (950 lb/ac). During a test period of nine years, Kilcher (1980) found Russian wildrye-alfalfa yields of 1614 kg/ha (1480 lb/ac). In general, forage yields are related to spring soil moisture (1 April) and April to August precipitation, fertility and age of stand.

## 7. Carrying Capacity of Russian Wildrye Pasture

If pastures are grazed to a constant carry-over, carrying capacity will reflect annual forage production. Annual carrying capacity is as variable as weather factors: precipitation, temperature and wind.

Research results do not provide a clear picture of what productivity to expect from Russian wildrye pastures. Generally small-field results will be higher than in large fields as stands are newer and percentage utilization is more uniform than in large commercial pastures.

The following are some of the reported results. One 10-year study at Swift Current found an annual carrying capacity (stocking rate) of 91 grazing days per ha (38 grazing days per acre), corrected to a 458 kg (1100 lb) animal for Russian wildrye grazed in spring and summer (Holt et al. 1991b). If (30 lb/ac) of nitrogen fertilizer was applied per year, stocking rate was increased to 118 grazing days per ha (49 grazing days per acre). However, when used in the fall for cows and calves, carrying capacity was just 37 days per ha (14 days per acre) (no fertilizer applied) (Holt and Knipfel 1993). If these latter results were corrected to a standard unit taking into account the 545 kg (1200 lb) cow and the 227 kg (500 lb) calf, then the figure would be 53 days per ha (22 days per acre). A value of (13 grazing days per acre) was found in a survey of PFRA Russian wildrye pastures. If corrected for cow and calf size, the PFRA figure would be similar to the fall grazing results.

Carrying capacity can be increased by mixing alfalfa with the Russian wildrye. A carrying capacity of 40 standard animal unit grazing days per acre was calculated for Russian wildrye-alfalfa pasture (Kilcher 1982). Results of a South West Forage Association-Saskatchewan Agricultural Development fund project indicate a similar carrying capacity for grass-alfalfa since 1987.

While research results are not consistent, a carrying capacity of at least 48 grazing days per ha (20 grazing days per acre) should be expected from Russian wildrye pastures grazed season-long. This can be increased by including a legume in the pasture or if nitrogen fertilizer or manure can be applied economically. **A carrying capacity of 72 grazing days per ha (30 grazing days per acre) (or 2.4 standard animal unit month per ha), on average, should be an achievable goal on a fertile site. Under use may be necessary to deal with the weather-related variability in annual carrying capacity (stocking rate).**

## 8. Forage Quality and Animal Gains



Russian wildrye is equal to or better than other seeded forages for digestibility in spring and summer and is higher in digestibility in fall (Figure 1).

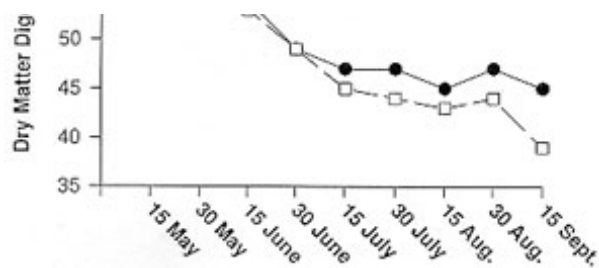


Figure 1. Effect of date of harvest on percent dry matter digestibility of Russian wildrye and crested wheatgrass forage

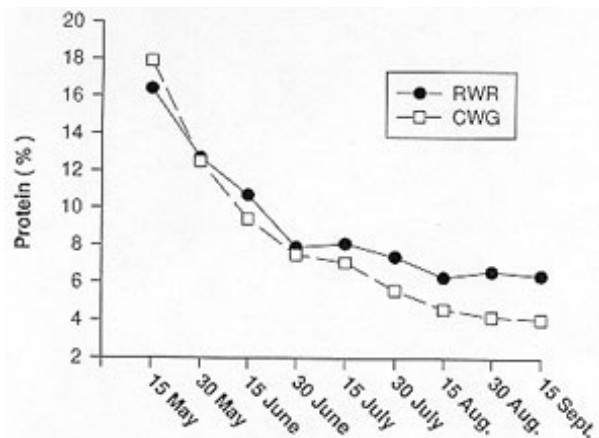


Figure 2. Effect of date of harvest on protein content of Russian wildrye and crested wheatgrass forage

Russian wildrye forage almost always has greater protein content than other seeded or native forages harvested at the same stage of development (Figure 2).

The highest quality is found in new growth in spring with digestibility, protein and phosphorus declining to reach a minimum plateau by late July. At this stage the forage may be 45% digestible (dry matter basis), and contain 7% protein.

Forage quality of Russian wildrye is adequate to maintain yearling cattle gains at 0.83 kg/day (2 lb/day) from mid-April to mid-August. Spring calves should gain about 0.96 kg/ha (2.3 lb/day) or better on pasture and lactating cow weights should be maintained at least until August. Some additional gain should be achieved by including alfalfa with the grass. Later in the season, a lactating cow or growing calf or steer will require mineral and protein supplementation.

## 9. Pasture Management

### Goals of grazing management

Whatever the kind of pasture, the goals of grazing management will incorporate the following principles: maintain or improve pasture condition for livestock and wildlife; maintain economical animal performance; reduce animal selectivity; improve livestock distribution; improve the ease and flexibility of management (Sindelar 1989).

### Grazing system.

A grazing system is a planned schedule of pasture use and defines when and where livestock will graze during the season to accomplish the desired goals (Abouguendia and Dill 1993). The system may include annual and/or perennial forages, seeded pastures and/or native range. The most common grazing systems are: continuous; 'complementary' use of seeded and native range; and various rotational grazing schemes.

### Principles for managing Russian wildrye pasture.

Russian wildrye is a cool-season grass, that is, most of its production is during the months of April, May and June. This usually coincides with the best soil water conditions. After spring, grazing management of Russian wildrye involves the management of stockpiled forage. Russian wildrye is superior to most grasses at the same date because the stored forage is of higher palatability and better quality.

Therefore, it may be grazed at any time of the year from April until December or later depending on available forage and weather.

Whatever the season, forage supply and quantity must meet the needs of the grazing animal. About 10-12.5 cm (4 or 5 inches) of growth should be available before a pasture is grazed. This will equal about 654 - 872 kg/ha (600 to 800 lb) forage per acre. It may be grazed to 5 - 15 cm (2 to 3 inches) 327 -436 kg/ha (300 to 400 lb/acre residue) before productivity (average daily gain, milk production, body condition) of the animals will begin to decline.

In general, in semiarid climates, maximum yields of annual or perennial crops are obtained in one harvest per year. Thus, hay harvest or once-over rotational grazing will provide maximum forage yields. Quality will not necessarily be optimized by a one-harvest system but should be adequate for most livestock classes. Frequent harvests of immature forage will provide higher quality forage but will reduce plant vigor and lead to elimination of such species as alfalfa, intermediate wheatgrass and many native grass species if rest is not provided. Heinrichs and Clarke (1961) have shown that Russian wildrye tolerates frequent clipping much better than several other introduced or native grasses. This characteristic, too, may be considered when planning a grazing system which includes Russian wildrye and other grasses.

Different pasture species may need to be managed differently or grazed at different times to optimize palatability or quality. For example, native range should be fenced and grazed at a different time than seeded pastures. Crested wheatgrass should be fenced out from Russian wildrye to use each grass in its prime. Russian wildrye may be sowed in mixture with

should be removed from Russian wildrye to use each grass in its prime. Russian wildrye may be sowed in mixture with forages of similar livestock acceptance, such as slender wheatgrass or Dahurian wildrye and/or a legume, with the expectation that the pasture will be uniformly grazed. It is very important that alfalfa is not selectively grazed out of the grass-alfalfa mixture, which is possible when the only regrowth available is that of alfalfa, such as in mid-summer.

Stock density can be managed to reduced selective grazing. This will depend on the period of use and expectations of productivity. If 1 animal unit month per acre use can be expected, then the stock density will be 1 animal unit per acre if one month's grazing is expected. If the pasture will be continuously grazed for five months, then the stock density will be 1 animal unit per five acres given the expected productivity of 1 animal unit month grazing per acre. **Stock density is a very important management decision.**

To satisfy the second principle of grazing management to maximize animal returns, pasture quality is matched with the animal type. Forage digestibility, protein, and many quality factors decline from first growth in spring until dormancy in fall. In spring, Russian wildrye or Russian wildrye-alfalfa will provide high quality grazing for cows with calves and 'flushing' cows for re-breeding. This pasture will support excellent calf gains and maintain or improve cow condition summer long. The stockpiled forage will maintain the non-lactating pregnant cow into fall and winter. Yearlings will gain 1.0 kg/day (2 lb/day) on Russian wildrye-alfalfa pasture from April until August at which time average daily gains may decline. By this date, the Russian wildrye may need supplementation or the steers are removed.

## Grazing systems for Russian wildrye

Russian wildrye or Russian wildrye-legume pastures may be used in a variety of grazing systems. Russian wildrye will tolerate early season use much better than native grasses. However, crested wheatgrass is more productive for early season use. Russian wildrye will tolerate frequent clippings better than other grasses (Heinrichs and Clark 1961). Despite this trait, rest is important to allow the plants to recover for re-grazing. Because of its quality in stored forage, Russian wildrye may be grazed late into the season with acceptable livestock production.

Russian wildrye or Russian wildrye-legume may be grazed **continuously** but utilization should be less than if rotationally grazed. Plants within the sward are given an opportunity to improve vigor through under-utilization. Russian wildrye quality supports season-long use. Minerals, salt or supplements may be used to improve cattle distribution in large fields. Variability in year-to-year production will need to be addressed in long term plans.

If native range is available, then Russian wildrye is often used to '**complement**' the native pasture. The Russian wildrye is used for early season use to allow the native grasses to flower before use. The Russian wildrye is rested until the following year. This system allows the seeded pasture to maintain its vigor while the native range improves in condition.

**Rotational grazing** is the preferred system of use of any pasture. This will provide for a rest period for the plants to recover and replenish root reserves. Utilization may be increased to 75%, if rest is provided before the next grazing. The rest period may be one year or longer depending on precipitation and usage. In all cases, pastures used late in one season must be given time to recover the following year before re-use.

A **twice-over system** may be used for seeded pastures. Use during the first rotation in spring is reduced and plants allowed to re-grow for later summer or fall grazing. There is a quality benefit of removing seed tillers as seed stems are prevented.

**'Dormant' season** grazing will reduce the forage available for early grazing the next year.

## 10. Sustaining Productivity

Successful forage and beef production in southwest Saskatchewan will involve the management of grass or grass-legume for the optimum use of soil water and nitrogen.

### Water

Soil water is the first limiting factor in forage production in the semiarid prairies. Many studies have reported the relationship of forage yields or carrying capacity to precipitation and other climate variables affecting soil water. Weather cannot be controlled but it is possible to make better use of available water.

Row spacing can be increased for more forage production in dry years. The disadvantages are that the fields become more uneven and erosion may increase. Weeds may invade the bare ground. Cross seeding of grass mixtures or grass alfalfa will reduce erosion and trap water in the square pattern. Kilcher (1982) demonstrated the benefits of cross seeding to alternate or mixed rows.

Standing seed stems or snow fence increased the forage production and carrying capacity of fertilized Russian wildrye at Swift Current by 15% compared to stands in which the standing litter was trimmed to the crown (Holt 1995). This advantage was attributed to snow trapping which increased spring soil water by an average 20(standing stems) or 25 mm (snow fence). On a commercial scale, snow fences would be replaced with tall wheatgrass or other biological barriers. Our preliminary grazing trials indicated that the cattle eat the seed stems and reduced the snow trapping. However, standing litter or mulch will reduce evaporation and increase forage production (Smoliak 1965).

Mixtures of grasses may be more water efficient than monocultures but more work is required on researching complementary grasses.

## Nitrogen

If a seeded grass produces 454 kg (1000 lb) forage per year containing 2% nitrogen (12.5% protein), then 9 kg (20 lb) of nitrogen was removed from the soil just to produce the above ground forage. Even in grazed pastures, most of this nitrogen is not re-cycled very efficiently because of concentration of excreted nitrogen in feces and urine spots or losses to the atmosphere. Some of the nitrogen is replaced through rainfall and some is contributed by free-living nitrogen fixing bacteria in the soil. It is estimated that this may contribute approximately, 3 kg (7 lb) per acre per year. In the absence of a legume, the remainder must be provided by soil organic matter.

**Legume.** If bloat is not a concern and it can be minimized by management, alfalfa is the legume of choice to grow with Russian wildrye. Since Russian wildrye is very competitive with alfalfa, then the rows should be separated. Other non-bloating legumes may be used with Russian wildrye but very little information is available about their use in pasture.

**Nitrogen fertilizer.** Nitrogen fertilizer is a more expensive method of returning nitrogen to the soil. As Russian wildrye has a high demand for nitrogen, it responds very well. However, fertilizer response is water dependant and results are disappointing in dry years. Lawrence and Heinrichs (1968) reported a return of 20 lb forage per lb nitrogen fertilizer for a 15 year period. Kilcher found a lesser response during a drier period. In general, utilization of nitrogen fertilizer will be greater in more favorable environments. The results of Lawrence and Heinrichs and a grazing study reported by Holt et al. (1991) suggest a return of about 12 to 15 animal unit grazing days/acre for the first 30 lb nitrogen applied per acre. The additional grazing capacity must pay for the cost of fertilizer and application. **In most situations, fertilizing pasture is not profitable in this region.** Nitrogen fertilizer may extend the grazing season at both ends, improve forage quality and reduce the variability of production. These may have some monetary value.

**Manure or other mulches.** Manure is a valuable source of nitrogen and other nutrients. When available, it may be spread on pastures providing spreading costs are not prohibitive.

## Renovation

Old stands of forages become low producing or 'root bound'. Many producers extend the lifetime of a Russian wildrye pasture by various means of renovation. Generally it involves thinning the stand by cultivation but herbicides may also be used. The usual implement is a cultivator with narrow 5 to 10 cm (2 to 4 inch) spikes. The field may be harrowed at the time of renovation and a new forage introduced. Usually a legume is sown to take advantage of the input of nitrogen. At Miles City, Montana specialized equipment have been built for range renovation. These include a lister, a 'pitter' and a strip rotovator.

The extreme renovation is breaking and re-seeding. In a year of above normal rainfall, this was accomplished at the Research Centre in one year without a serious loss of grazing. The earmarked field was grazed heavily until June and then was broken with a double disc. The field was fallowed for the remainder of the year and 'set-up' for seeding by harrow-packing early the next year. The Russian wildrye was sown in one direction. Alfalfa and sweet clover was sown in alternate rows with Dahurian wildrye, across the Russian wildrye. Some grazing was available in the seeding year. **Above average rainfall in summer made this work.** Annuals may be used as 'break' crops to grow out weeds. **If land is prone to erosion, then it is best to proceed cautiously, breaking small strips at a time.**

## 11. Limitations of Russian Wildrye for Pasture

The main complaint about Russian wildrye is its lack of productivity in the long term. possibly due to its high demand for soil nitrogen which is related to the high protein (nitrogen) content of the forage. Reports by White (1985) and Holt et al. (1991b) have described the decline of yield of Russian wildrye as the stand ages. Pastures that contain alfalfa may not decline in yield so quickly as monoculture stands but eventually the alfalfa is also lost. Alfalfa has a relatively high requirement for phosphorus. Fertilizer or manure may extend the life of a Russian wildrye or Russian wildrye-alfalfa stand.

Russian wildrye is a bunch grass with an elevated crown, and results in rough fields. It also may be prone to erosion because of the elevated rows channelling water. Cross seeding of grass-grass or grass-alfalfa will reduce the erosion but will may the sward even more uneven. It may be possible to mix bunch and creeping rooted grasses but this has not been widely tested. The solid stand may defeat the purpose of wide row spacing.

Russian wildrye is very slow to establish but very competitive once in a stand. It may crowd out other forages in the mixtures such as the legume or other grass. Sowing in alternate rows or cross seeding is recommended to reduce the competition of the Russian wildrye.

## 12. What Producers Report

### Adaptation

**Tom Williamson, seed wholesaler, Pambrun:** recommends Russian wildrye for heavier soil and on soil with a high water table and maybe some salinity.

**Ross Williamson, seed producer, Pambrun:** uses Russian wildrye as a three-way crop, seed, hay from seed aftermath and grazing.

**Gary Jones, producer, Crane Valley:** Russian wildrye can be grazed close without damaging the stand in the long-term; can be grown in saline areas and has good quality for fall and winter grazing.

**Jack and Rodney Gamble, producers, Pambrun:** not well adapted to dry upland but does very well in an area with high watertable (and alkali spots).

**Trevor Dyck, land manager, PFRA, Swift Current:** assists in maintaining healthy native grass when used for early season grazing.

**John Ippolito, Extension Agrologist, Rosetown:** some producers are seeding Russian wildrye alone or with other grasses and alfalfa in saline situations, but weed competition has been a problem along with the slow establishment of Russian wildrye.

**Zoheir Abouguendia, Range Agrologist, Swift Current:** recommends Russian wildrye only on heavier textured soils i.e. loams and clays; can do well in saline areas once established.

**Don Millar, PFRA manager, Auvergne-Wise Creek:** Crested wheatgrass is better in a dry year.

### ***Establishment Practices***

**Don Pearson, producer, Eastend:** uses a double-disc press drill with depth bands seeding into clean summerfallow.

**Wayne Crawford, producer, Willow Bunch:** does not find Russian wildrye difficult to establish just slow to develop; sows directly into stubble in late October.

**Doug, Mike and Lyle Smith, producers, Swift Current:** seed into fallow in alternate rows with a cereal (modified hoe drill, seed dropped before packer wheel) or directly into stubble; seed early in spring; do not use in the establishment year and only sparingly in the next year.

**Collin Sauder, producer, Hodgeville:** trickles seed down before the packer of a hoe drill in early spring with no companion crop. Tom Williamson: does not find Russian wildrye difficult to establish; seeds on fallow, in spring, with durum wheat, with a double disc press drill with depth control, at 90 cm (36 inch) spacing (for seed and grazing).

**Zohier Abouguendia:** in several plot trials in the Southwest has seen no advantage of TetraCan over Swift; seeding into clean standing stubble works well and then control annual weeds with mowing; fall seeding may be more appropriate for seeding on saline soils to take advantage of high moisture early in spring.

**Row spacing Gary Jones:** uses a wider row spacing, i.e. 52 cm (21 inches), to get more usable forage in a dry year when, to replace it with purchased hay, is often very expensive; has used a disc to try to smooth out the ridges and will experiment with rolling (when the ground is soft) to level the field.

**Paul Perrault, producer, Ponteix:** seeds in an alternate row with alfalfa at 52 cm (21 inches) each.

**Don Pearson:** seeds in rows of 45 to 60 cm (18 to 24 inches).

**Jack Gamble:** rows of 60 to 90 cm (24 to 36 inches) with alfalfa.

**Mixtures Doug, Mike and Lyle Smith:** seed with alfalfa and sweet clover and also slender wheatgrass which will form snow barriers for 2 to 4 years;

**Wayne Crawford:** tries for about 10% alfalfa in the stand with Russian wildrye.

**John Ippolito:** In his area, Russian wildrye is used with tall wheatgrass and slender wheatgrass in saline areas.

**Zoheir Abouguendia:** seed Russian wildrye with alfalfa and perhaps a short-lived grass such as slender wheatgrass as more complex mixtures cause management problems; in saline areas has observed stands of Russian wildrye with alfalfa, slender wheatgrass, tall wheatgrass and/or Altai wildrye, many with low density; suggests fall seeding in saline areas.

**Collin Sauder:** uses slender wheatgrass with Russian wildrye in saline areas and alfalfa at a low level.

**Don Pearson:** seeds with alfalfa and accepts there may be a risk.

**Roy Jennett:** does not seed with alfalfa for fear of bloat in producer-owned cattle.

### ***Productivity and Quality***

**Collin Sauder:** has seen minimal Russian wildrye response to fertilizer or manure.

**Wayne Crawford:** feels that he gets more production by waiting until June before grazing Russian wildrye.

**Doug, Mike and Lyle Smith:** yields drop quickly with age of stand.

**Trevor Dyck:** better quality than crested wheatgrass for summer and fall use.

**Carrying Capacity** Don Pearson: 1.25 ha (3 acres) per animal unit month for Russian wildrye, 0.6/ha (1.5/acre) for crested wheatgrass and 2.4 ha (5.7 ac) for native range at Eastend.

**Paul Perrault:** 1.2 ha (3 acres) per animal unit month for native range and Russian wildrye.

**Jack Gamble:** on high watertable (with alkali spots), 40 cow-calves for 80 days on 38 ha (90 acres) (or 0.35 ha (0.85 acres) per animal unit month).

**Zoheir Abouguendia:** estimates about 0.7 to 0.8 ha (1.7 to 2 acres) per animal unit month is required in spring, perhaps a

**John Abouguendia:** estimates about 0.7 to 0.8 ha (1.7 to 2 acres) per animal unit month is required in spring, perhaps a little less if grazed only in the fall.

**Roy Jennett:** Russian wildrye, 0.7 ha (1.6 ac) per animal unit month (includes creek bottom) to 1.0 ha (2.5 ac) per animal unit month; native range, (3.7 to 6.2 ac) per animal unit month.

**Don Millar:** Russian wildrye, 0.5 - 0.7 ha (1.3 to 1.7 ac) per animal unit month; crested wheatgrass, 0.4 - 0.5 ha (1 to 1.3 ac) per animal unit month (a new stand); native range, 1.0 to 2.0 ha (2.5 to 5 ac) per animal unit month.

**Grazing System Wayne Crawford:** uses Russian wildrye in a rotational grazing system.

**Doug Smith and family:** use for a short period in spring and more intensively in the fall.

**John Ippolito:** most producers are using a complementary system of seeded grasses with native range and stubble.

**Zoheir Abouguendia:** community pastures use Russian wildrye in spring in a complementary system with native range as do some producers; usually recommends for fall use; season-long, heavy grazing results in reduced vigor and productivity, increased soil compaction and possible weed encroachment!

**Don Millar and Roy Jennett:** use in a complementary system with native range.

**Sustaining Production Doug, Lyle and Mike Smith:** seed with slender wheatgrass, intermediate wheatgrass or tall wheatgrass or leave a strip (if hayed) for snow trapping (with some success).

**John Ippolito:** some producers are broadcasting or banding fertilizer along the row; in one trial visible differences of broadcast urea were seen in the spring but yield differences could not be measured in the fall.

**Zoheir Abouguendia:** a moderate level of production can be sustained with seasonal grazing at moderate stocking rates and monitoring for vigor and condition of stands; sustaining production will require additional inputs such as fertilization, interseeding with alfalfa or spiking; long-term effect of repeated spiking on soil quality is unknown.

**Don Pearson:** has used manure on fields near home, also chemical fertilizer and spiking and harrowing (with seeding of alfalfa and sweet clover).

**Limitations Trevor Dyck:** production declines in older stands; seed stalks can cause pink eye; better for summer and fall use; crested wheatgrass is the better choice for early season use.

**John Ippolito:** weeds are a serious problem in saline plantings.

**Collin Sauder:** seed stalks are unpalatable and may cause pink eye; low production in old stands; soil erosion with wide row spacings on rolling land.

**Raymond Prefontaine:** if over-grazed, pasture sage and bromeweed will invade; needs rest more so than crested wheatgrass.

**Zoheir Abouguendia:** some producers feel that stockpiling Russian wildrye for fall grazing creates some problems with seed heads i.e. low palatability, pink eye, inaccessible when snow is heavy.

**Roy Jennett:** pasture sage appeared in an old stand after the drought of 1994.

**Don Pearson:** Russian wildrye needs a lot of fertility to keep it productive.

#### ***Would you seed Russian wildrye again?***

**Don Pearson:** Russian wildrye was once supposed to be the wonder grass but not so; it may work better in special seasons i.e. spring or fall.

**Paul Perrault:** would not seed again because of low productivity and it does not fit in with his operation.

**Jack Gamble:** would seed again on selected ground; does not replace crested wheatgrass for early spring; not for even winter use.

**Doug, Mike and Lyle Smith:** depends on the need but no more than a third of all seeded grasses; very dependent on weather and works best with alfalfa and/or clover.

**Raymond Prefontaine:** will continue to use Russian wildrye on his ranch; uses in rest rotation with native range, early and late in grazing season; has ten times more Russian wildrye than crested wheatgrass.

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