FORAGE VARIETIES

ALFALFA

MAGNUM VI WET (Co-op Exclusive)

Magnum VI Wet is the latest generation in the Magnum family of branch rooted alfalfas. The branch root trait helps keep more of the root system above the water table, offering a solution to producers looking for an alfalfa variety that will perform on heavier soil types.

This specific root system also helps to make Magnum VI Wet more winter hardy as the branched roots better secures the plant in the ground making it better able to resist heaving when freezing and thawing occurs.

Magnum VI Wet offers greater disease tolerance and winter survival than Magnum III Wet, while offering the same high yield and exceptional regrowth of this earlier variety. In the latest Maritime Alfalfa Variety Evaluation, it produced 106% of the check cultivars yield; making it one of the top cultivars in the trials.

Fine stems, high yield, exceptional regrowth, outstanding disease tolerance, increased winter survival and its ability to tolerate excess water make Magnum VI Wet an excellent alfalfa choice for Maritime farmers.

Its flowering date is approximately June 20.

(Seeding rate: 12-16 kg/ha in a pure stand).

APICA (Co-op Exclusive)

An early alfalfa which is more winter hardy than any other recommended variety. Apica has at least a 10% better chance of survival and consequently produces higher yields than Saranac. It is similar to Saranac in its growth habits, leafiness and quality.

Apica has similar resistance to phytophthora root rot as Saranac, but it is more resistant to Fusarium root and crown rot than Iroquois. This variety has been widely tested in the Atlantic Region, showing outstanding yield performance and excellent winter hardiness.

Its flowering date is approximately June 15.

(Seeding rate: 12-16 kg/ha in pure stand)

AC CARIBOU (Co-op Exclusive)

An excellent variety of alfalfa that is highly resistant to bacterial wilt and resistant to verticillium wilt. AC Caribou is a cross breeding of
Apica, Titan, Iroquois and other high yielding proven varieties of alfalfa.

This medium maturing alfalfa has been widely tested in the Maritimes as SF8001; where its persistence, winter hardiness and disease resistance has been outstanding.

In trials conducted by Dr. Yousef Papadopoulos at the Nappan Experimental Farm and Mr. Naill Coulson at the Charlottetown Research Station, AC Caribou is shown to have very good yields. AC Caribou is a leafy variety with fine stems.

Its flowering date is approximately June 20.

(Seeding rate: 12-16 kg/ha in pure stand)

**ALGONQUIN**

A medium standard type alfalfa that has very good winter hardiness. Algonquin is resistant to bacterial wilt and also has good recovery after cutting. The performance of this variety is somewhat better than Iroquois. Data shows that Algonquin is well adapted to all areas in Western Canada where Iroquois is commonly grown.

Its flowering date is approximately June 20.

(Seeding rate: 12-16 kg/ha in pure stand)

**COMMON ALFALFA**

Alfalfa is the highest yielding perennial forage available in the region. Alfalfa / grass are best used for stored and green feeding, as pasture it will shortens the life of the stand and risks bloat.

This cultivar is deep-rooted and will live for several years on well drained soils. Top performance of this crop will be achieved when provided with well limed soils and pH of 6.5 or greater.

The addition of a grass to an alfalfa stand often reduces heaving, icing and lodging, providing assurance of forage production when there is severe winter kill of legumes.

Its flowering date is approximately June 15 to June 20.

(Seeding rate: 12-16 kg/ha in pure stand)

**BIRDSFOOT TREFOIL**

**AC LANGILLE**

A high yielding variety of birdsfoot trefoil that has very good yield and excellent spring regrowth. This cultivar was developed by the research group at the Napan Research Farm in Nappan, NS.

In trials conducted in Atlantic Canada, AC Langille out yielded every single variety of birdsfoot trefoil recommended in the region, in the
first and second cut during the three years of post establishment testing; it yielded 109% of the check cultivar Leo (1998 forage guide for the Atlantic Provinces).

Growth in spring starts 5-10 days earlier than Leo, but its fall dormancy is similar to Leo.

AC Langille was developed in and for Atlantic Canada. It’s high yield, high dry matter content, excellent spring regrowth, and very good winter hardiness makes it an ideal choice for Maritime farmers.

Its flowering date is approximately June 25.
(Seeding rate: 11 kg/ha in pure stand)

**LEO**

A late blooming type of trefoil that is a favorite for hay or pasture. Leo is a week earlier and grows more upright than Empire. Has superior seedling vigour and excellent winter hardiness. Good tolerance to inadequate drainage.

Its flowering date is approximately June 25.
(Seeding rate 11 kg/ha)

**COMMON BIRDSFOOT TREFOIL**

When successfully established, Trefoil will often out-perform other legumes in areas of low fertility and poor drainage.

Direct seeding gives best results if good weed control is practiced as Trefoil is generally slow to establish and does not tolerate shading in the seedling stage.

If trefoil is overseeded with a cereal at the time of seeding, the cereal seeding rate should not exceed 50 kg/ha and it should be removed early as green chop.

Trefoil based mixtures can be used for pasture, stored feed or green chop, and under proper management can have a long life span.

Its flowering date is approximately June 25.
(Seeding rate: 11 kg/ha in pure stand)

**CLOVER**

**AC CHRISTIE DOUBLE CUT RED CLOVER**

AC Christie was developed at the Charlottetown Research Centre in Prince Edward Island by Dr. Bert Christie. To breed this variety, a selection of cultivars that showed good persistence and freedom from root diseases was carried out.
In trials, this variety has produced more forage yield than any other cultivars in the second and third harvest years. As well, this variety has two unique features: (1) the plants have a more fibrous root system than most red clovers cultivars, and many plants have the ability to generate shoots from below the crown, enabling the plants to survive low winter temperatures that would normally kill red clover plants and (2) the stems have very little pubescence. When harvested and stored as hay, this will reduce the amount of dust generated in handling.

AC Christie’s flowering date is approximately June 16, which is 7-8 days earlier than Marino and 3-5 days earlier than AC Endure. This makes AC Christie the earliest cultivar to flower in Charlottetown trials.

(Seeding rate: 10-12 kg/ha)

**AC ENDURE DOUBLE CUT RED CLOVER**

*(Co-op Exclusive)*

AC Endure is a highly recommended variety of double cut red clover because of its strong seedling vigor, strong stand, high yield, persistence and its ability to produce highly digestible forage.

AC Endure originates from Dr. Bert Christie’s breeding program at the Charlottetown Research Station in Prince Edward Island. It was selected from a group of plants that showed strong vigor and freedom from root discolorations which indicates presence of disease.

In trials conducted in Atlantic Canada, AC Endure (CRS-8) consistently outperformed the check varieties (florex and marino) in the first, second and third years of harvest. Its stand and vigor was double that of the check varieties.

AC Endure is earlier in maturity than either Marino or Florex; approximately June 20. Due to its medium type maturity and superior winter hardiness, AC Endure is an ideal companion in mixtures with timothy, meadow fescue, bromegrass, orchardgrass, white clover, alfalfa and birdsfoot trefoil.

(Seeding rate: 10-12 kg/ha)

**COMMON DOUBLE CUT RED CLOVER**

A productive biennial that is suited for hay or haylage mixes. It is an early flowering type of clover that likes fertile, well drained soils. It tolerates poor drainage better than alfalfa. It also has strong vigorous regrowth.

(Seeding rate: 10 to 12 kg/ha)
**COMMON SINGLE CUT RED CLOVER**
This is another popular legume that yields well in the year following seeding. Single cut red clover is ten days later in maturity than the double cut type. Timothy is the best grass to mix with it; use 5 and 7 kg/ha of timothy and clover, respectively. Best results are obtained when the red clover is treated with inoculant.

**COMMON ALSIKE**
A very popular clover that is very well adapted to soils of poor drainage. It also grows well in soil with low pH. This clover is a hybrid between Red Clover and White Clover. Alsike is a medium height clover with smaller leaves and flowers than Ladino. Yields can be good under high fertility and even rain fall distribution. In mixtures add 2 to 3 kg/ha.

**HUIA WHITE CLOVER**
An improved variety of white clover that has high yield and very good winter hardiness. This variety is highly suitable for a rotational and continuous grazing program.

Huia White Clover produces short growing plants with medium size leaves, which makes it ideal for mixing a perennial ryegrass in a pasture program. Its flowering date is similar to Sonja and Milkanova (approximately June 26).

Because of its good establishment after seeding, this variety is an ideal companion in grass mixtures.

In research trials conducted in the Maritimes and abroad, Grasslands Huia shows very good persistence under rotational and continuous grazing.

(Seeding rate: use 3-5 kg/ha in mixtures with other species)

**SONJA WHITE CLOVER**
An excellent variety of white clover. In trials conducted by Dr. Joanna Fraser at the Nova Scotia Agriculture College in co-operation with Dr. H. T. Kunelius at the Research Station in Prince Edward Island, Sonja has been shown to have superior winter hardiness and higher dry matter yields with Orchardgrass than Sacramento Ladino. Both locations also found Sonja to have higher yields than Sacramento in mixtures with grasses such as timothy, tall and meadow fescue, bluegrass and reed canarygrass.

This variety has very good winter hardiness and has excellent regrowth adding quality to pastures. It has slightly smaller leaves than Sacramento, but is tall growing and is suitable for use in silage and haylage mixtures. Its flowering date is approximately June 26.

(Seeding rate: use 3-5 kg/ha in mixtures with other species)
MILKANOVA WHITE CLOVER
A high yielding variety of white clover, that is highly recommended for the Maritime’s growing conditions.
Milkanova has an excellent regrowth and very good winter hardiness.
This variety has been widely tested in our region, where it has shown very good performance. Its flowering date is approximately June 26, which is similar to Sonja White Clover.
In trials conducted in the Atlantic region, Milkanova shows better yield than Sacramento Ladino.
This variety is well adapted to soils with variable conditions.
(Seeding rate: use 3-5 kg/ha in mixtures with other species)

COMMON WHITE CLOVER
This low growing type of clover is winter hardy and persistent under grazing.
White clover has high potential as a forage crop because of its palatability and high protein content in the leaves. It also has excellent regrowth following cutting or grazing.
White clover is used primarily as a pasture legume in mixtures with grass. This legume is valuable as a source of protein and of the minerals: calcium, phosphorus, magnesium, potassium, sodium and vitamins A and D.
(Seeding rate: use 3-5 kg/ha in mixtures with other species)

COMMON YELLOW BLOSSOM SWEET CLOVER
This is tall growing clover which is adapted to most kinds of soil. It is a good source of nitrogen and a soil conditioner when plowed under, as its deep root system will grow under adverse soil conditions.
Yellow Blossom Sweet Clover requires good pH and the proper strain of inoculant must be used when seeding this legume.
A seeding rate of 15 to 17 kg/ha of yellow blossom sweet clover is recommended.

GRASSES
AC NORDIC ORCHARDGRASS
A highly recommended variety of orchardgrass.
AC Nordic is a medium type maturity orchardgrass that has fair tolerance to variable drained soils. Its heading date is approximately June 18.
This variety has good winter hardiness, high yield and excellent regrowth under favourable moisture conditions.
AC Nordic is an upright bunchgrass with medium wide long dark green leaves and dense tillers. Its yield is 98% of kay orchardgrass which is approximately 8.4 ton/ha.

Because of its high yield, good palatability, AC Nordic orchardgrass is highly recommended for farm use and in the Atlantic region.
(Seeding rate: 11 kg/ha)

**KAY ORCHARDGRASS**

A early variety of orchardgrass that has good growth under cool and wet conditions, such as in early spring. Its heading date is approximately June 15.

This variety has good winter hardiness and good palatability. Because of it’s medium-late maturity, Kay orchardgrass is well suited for mixes with legumes such as: Alfalfa and Clover and other grasses such as: Meadow Fescue.

In trials conducted in the Atlantic Region, Kay shows higher yields than Frode and starts heading four days later.

Like any orchardgrass, Kay requires well-drained soils to produce top yield. In trials conducted at the Ottawa Research Station, Kay shows considerable resistance to Rust.
(Seeding rate: 11 kg/ha)

**EARLY ARCTIC ORCHARDGRASS**

A highly recommended variety of Orchardgrass that has very good yield and fair tolerance to soils with variable drainage. Its heading date is approximately June 20.

This medium late variety has been widely tested in Atlantic Canada showing outstanding performance.

Arctic is well suited for mixes with legumes such as Alfalfa and Clover and other grasses such as Meadow Fescue and Timothy.
(Seeding rate: 11 kg/ha)

**COMMON ORCHARDGRASS**

Orchardgrass is highly suitable for conserved forage as well as rotational grazing. It requires well-drained soil. Surface drainage is also necessary as ice or flooding will kill orchardgrass. Quality decreases rapidly after heading. In order to preserve the palatability, orchardgrass must be cut as heads emerge from the boot.
(Seeding rate: 11 kg/ha)
AC ROCKET BROMEGRASS

AC Rocket is an erect, sod forming smooth bromegrass which was selected for its leafiness, fine stems and rapid recovery after harvest. Seedlings are quick to emerge in the spring, filling the areas where alfalfa disappears in older stands. Good drought tolerance and excellent winter survival are characteristics of this variety.

Its heading date is approximately June 18.

AC Rocket is useful for hay, haylage or rotational grazing. Its ability to maintain green leaves in the bale make it a good choice for horse hay.

In the latest Maritime Forage Variety Evaluations, AC Rocket was one of the top yielding bromegrass varieties, matching the yield of the check variety.

Its leafiness, outstanding winter hardiness, rapid recovery after harvest and high yields makes AC Rocket a great choice for Maritime farmers growing smooth bromegrass.

(Seeding rate: 15 kg/ha)

RADISSON SMOOTH BROMEGRASS (Co-op Exclusive)

A highly recommended variety of smooth Bromegrass that has early maturity, excellent regrowth vigor and high yield.

Radisson also has a good tolerance to soils with variable drainage. Its heading date is approximately June 18.

This variety of smooth Bromegrass has been widely tested in Ontario, Quebec and the Maritimes. Data coming from these trials shows Radisson with an outstanding performance, good quality forage and high yield.

Radisson grows taller than Saratoga and also has longer and wider leaves than those of Tempo and Baylor.

(Seeding rate: 15 kg/ha)

CARLTON BROMEGRASS

A variety of Bromegrass that is well adapted to northern climate. This variety has good winter hardiness and medium maturity. Its heading date is approximately June 18.

Carlton Bromegrass has been widely tested across the country, showing high performance and good disease resistance.

This bromegrass is a good forage producing variety and a good companion in alfalfa mixtures.

(Seeding rate: 15 kg/ha)
**COMMON BROMEGRASS**
Bromegrass is an excellent companion for alfalfa in a hay or haylage system. It has early maturity, good yield, and good growth, especially on drought soils.

Bromegrass has a deep root system and requires well drained soil. It provides early pasture and will regrowth to provide good late pasture.
(Seeding rate: 15 kg/ha)

**PADDOCK MEADOW BROMEGRASS**
A highly recommended variety of meadow bromegrass that has an excellent regrowth vigor.

This high yielding variety of meadow bromegrass has moderate tolerance to soils with variable drainage.

Paddock meadow brome responds well to a good fertility program and it is an excellent companion for legumes in a grazing program.

This variety has a very early maturity rating and offers a productive fall growth with good frost tolerance. Its heading date is approximately June 15.

In trials conducted in Atlantic Canada Paddock meadow brome yielded 103% of Saratoga bromegrass which is approximately 7.5 ton/ha.

Because of its main attributes, this variety is highly recommended in the region for a full season pasture program.
(Seeding rate: 14-16 kg/ha)

**VENTURE REED CANARYGRASS**
An excellent variety of Reed Canarygrass that is recommended for the Atlantic Region. Its heading date is approximately June 17.

Like Palaton, Venture Reed Canarygrass has an excellent tolerance to variable drainage soils. It is an early maturing variety. Its yield is similar to those of Palaton Reed Canarygrass.

Venture is low in alkaloids. This variety is very winter hardy and withstands excessive moisture conditions, including flooding. This variety also tolerates soils with low pH.

Seeding rate: 10-12 kg/ha straight seed
In a mix with Alfalfa: Venture 4-6 kg/ha
Alfalfa 7-10 kg/ha

**PALATON REED CANARYGRASS**
A very early variety of Reed Canarygrass that is palatable to cattle and other livestock animals. Its heading date is approximately June 18. This variety is very winter hardy and withstand excessive moisture
conditions including flooding. Palaton also has good disease resistance and it is an outstanding pasture grass in combination with legumes.

Like any Reed Canarygrass, this tall leafy variety will tolerate soils with low pH. Palaton has low alkaloids content, very good yield and excellent winter hardiness.

Seeding rate: 10-12 kg/ha straight seed
In a mix with Alfalfa: Palaton  4-6 kg/ha
Alfalfa    7-10 kg/ha

**COMMON REED CANARYGRASS**

A tall wide leaved plant that will tolerate excess moisture including flooding and low pH, this species will produce high yields on well drained, fertile soils. Reed Canarygrass loses quality extremely rapidly after heading. If grazed heavily enough or cut sufficiently often to prevent heading, it makes good quality and high yielding forage.

This cultivar is low in Alkaloids, also has good disease resistance and it is an outstanding pasture grass in combination with legumes.

(Seeding rate: 10-12 kg/ha pure stand, 4-6 kg/ha in a legume mix)

**KOKANEE TALL FESCUE** *(Co-op Exclusive)*

Kokanee is an erect, leafy bunch plant with wide deep green leaves. It exhibits excellent seedling vigor and exceptional tillering ability. This new variety of tall fescue is also Endophyte free.

Kokanee is well adapted to tougher soil conditions like saline and low pH. It shows great resilience to heat and drought conditions and is very winter hardy.

Its heading date is approximately June 18.

In the latest Maritime Forage Variety Evaluations, Kokanee was one of the top yielding tall fescue varieties, matching the yield of the check variety.

Adaptation to a wide array of soil types, excellent seedling vigor, outstanding winter hardiness and high yields makes Kokanee a great choice for Maritime farmers growing tall fescue.

(Seeding rate: 16-20 kg/ha)

**COURTENAY TALL FESCUE** *(Co-op Exclusive)*

A high yielding variety of tall fescue that is well adapted to most type of soils. Like any other tall fescue, Courtenay makes a good fall pasture as growth is adequate and maintained at that time of year.
Courtenay has medium early maturity and it is Endophyte free. Its heading date is approximately June 18. Data from the Ontario Forage Trial Report shows that Courtenay has excellent yields, and grows very well in the Northern and Southern parts of that province. In the Maritimes, this variety has been tested in the regional trials where it shows an excellent establishment and outstanding yields. (Seeding rate: 16-20 kg/ha)

**COMMON TALL FESCUE**
A deep-rooted, long-lived perennial grass that is tolerant to soils with imperfect drainage. Tall Fescue is adapted to most type of soils and resistant to trampling. This cultivar is a bunch grass that with even mowing or grazing will produce an even sod. Tall Fescue is adapted to pasture, or stored feed. Both palatability and quality is improved if the fescue is cut early and grazed heavily. This species makes a good fall pasture as growth is adequate and quality is maintained at that time of the year. (Seeding rate: 16-20 kg/ha)

**KOLUMBUS MEADOW FESCUE**
*(Co-op Exclusive)*
Kolumbus is a leafy variety of Meadow Fescue that is well adapted to the same climate and soil as Timothy. It performs exceptionally well in a rotational grazing system but can be used for stored feed if seeded in mixtures. Its heading date is approximately June 19. In the latest Maritime Forage Variety Evaluations Kolumbus produced an average annual yield of 8.49 t/ha (based on 2-yrs of testing); this was similar to the check variety. Its leafy semi-erect growth habit, high dry matter yields and tolerance to soils with variable drainage, makes Kolumbus a great pasture or silage grass choice for Maritime farmers. (Seeding rate: 15-16 kg/ha)

**SIGMUND MEADOW FESCUE**
A new variety of meadow fescue that is highly recommended for the Maritime region. This variety provides excellent yield and very good palatability. Sigmund Meadow Fescue is a medium early variety with an approximate heading date of June 19. This variety has a good tolerance to soils with variable drainage conditions.
In trials conducted in Atlantic Canada, Sigmund Meadow Fescue outyielded Mimer Meadow Fescue by 3%. Also showing very good winter hardiness and good field persistence.
Like other varieties of meadow fescue, Sigmund is highly suitable for rotational grazing, but it can also be used for stored feed if seeded in mixtures with timothy, orchardgrass and clover.
(Seeding rate: 15-16 kg/ha)

**COMMON MEADOW FESCUE**
A perennial bunch grass that grows 35 to 70 cm tall. Is adapted to the same climate and soil as timothy. Meadow fescue is highly recommended for rotational and continuous grazing. It is used primarily for pasture, generally in mixtures. It will tolerate wet soils with proper care and fertilization.
(Seeding rate: 15-16 kg/ha in a pure stand)

**RYEGRASS**

**ANNUAL TYPE**

**FABIO (Diploid Italian) (Co-op Exclusive)**
An excellent mid-season variety of annual ryegrass that is highly recommended for pasture and plowdown.
In trials conducted in Atlantic Canada, Fabio shows outstanding performance, out yielding everyone of the Italian ryegrass varieties recommended in the region.
This variety has broad leaves with dark green colour. It produces high root mass yield, which is ideal for plowdown in a crop rotation.
Fabio Ryegrass produces top annual yields, very good spring regrowth and good mid-season digestibility.
In an official test carried out in Europe, this variety shows high dry matter performance, good persistence and disease resistance.
Because of its main attributes, Fabio Ryegrass is highly recommended for farmers in Atlantic Canada that are in crop rotation or in pasture programs.
(Seeding rate: 25 - 35 kg/ha)

**AUBADE (Tetraploid Westerworlds)**
Aubade is an excellent variety of annual ryegrass that is highly recommended for hay - haylage - pasture production. Aubade is a tall, vigorous growing and early maturing variety that produces high

- 12 -
yields of good quality forage. When Aubade is used for pasture, it should be either clipped or harvested for green chop or silage once during the season.
(Seeding rate: 25-35 kg/ha)

LEMTAL (Diploid Italian)
An early maturing Italian annual ryegrass. It is low growing but is an erect variety that is highly digestible. It has good regrowth potential after cutting. It will remain productive late into the fall. It is an excellent pasture-plowdown variety.
(Seeding rate: 25-35 kg/ha)

COMMON ANNUAL RYEGRASS
Annual ryegrass is a rapidly growing bunchgrass that is adapted to a wide range of soils conditions. It regrowth continuously throughout the season and has the potential to be highly productive if it receives enough rainfall and nitrogen. During periods of little or no rainfall the plants stop growing and may die.
When seeding, the seed should be placed 1 cm deep and the seedbed rolled to ensure good emergence from the light, fluffy seed.
(Seeding rate: 25-35 kg/ha)

PERENNIAL TYPE
LACTAL (Tetraploid)
Lactal is an excellent forage type perennial ryegrass that is highly recommended for pasture or silage. Its seedlings have tremendous vigor, making it quick to establish. With rapid regrowth characteristics, Lactal produces consistently high yields.
Lactal is highly palatable and digestible; making it exceptional forage in any type of feeding program.
Its approximate maturity date is July 2.
Stand establishment is best achieved when seeded into a firm seed bed. Establishment in reduced tillage systems has also been successful. Similar to other perennial ryegrasses, Lactal benefits from generous nitrogen applications.
Ease of establishment, high consistent yields and great feed quality make Lactal perennial ryegrass an excellent choice for farmers in the Maritimes.
(Seeding rate: 25-35 kg/ha)
**BASTION (Tetraploid)**

A medium-late forage type perennial ryegrass, with good forage production and acceptable winter hardiness. Its approximate maturity date is July 2.

Bastion has high palatability, high intake and outstanding yield. It can be used in mixtures with alfalfa at the rate of 2-3 kg/ha. Bastion also can be blended with Italian ryegrass to produce early spring growth, leafy and high quality summer forage. It will maintain the palatability throughout the grazing season. Research has shown that Bastion has good resistance to rust and snow mold.

(Seeding rate: 25-35 kg/ha)

**COMMON PERENNIAL RYEGRASS**

Perennial ryegrass is a light quality forage that makes an excellent pasture for grazing animals. It is a very rapid growing species that requires fertile soils, ample moisture and a relatively mild climate.

Perennial Ryegrass is a bunchgrass with a relatively shallow root system, which will decrease productivity during hot weather if moisture is lacking.

Perennial ryegrass should be seeded in a mix with other cultivar to provide assurance to the crop during harsh winters.

(Seeding rate: 25-35 kg/ha)

**TIMOTHY**

**RICHMOND**

An early variety of Timothy that has performed exceptionally well in the Maritimes. Richmond has good height and is a very leafy variety. In Maritime cultivar evaluation trials, Richmond yields 105% of the check variety in the first cut and equivalent to the check variety in the second cut.

As and early Timothy, Richmond is a good companion for Flemish type Alfalfa such as Apica.

Its heading date is approximately June 25.

(Seeding rate: 9-11 kg/ha in a pure stand)

**AURORA**

An early maturing timothy variety that has an excellent seedling vigour and a very high yield potential. Aurora Timothy has very good regrowth, very good winter hardiness and excellent lodging resistance. Its superior lodging resistance provides this variety with an improved disease resistance due to better air movement beneath
the plant. Less disease pressure means a healthier and higher quality plant.

In trials conducted in western Canada and overseas, Aurora has outperformed other leading timothy varieties. On farm trials conducted in the Maritimes, Aurora Timothy has shown tremendous yield potential combined with excellent disease resistance and very leafy plants.

Because of its main attributes, Aurora is an ideal variety for the compacted timothy hay export market.

Its heading date is approximately June 26.

(Seeding rate: 9-11 kg/ha in a pure stand)

**MARIPOSA**

An early maturing type of Timothy that has a heading date similar to Richmond, which is later than Salvo and earlier than Climax.

Mariposa is a nine clone synthetic variety which is derived from the variety Richmond.

In trials conducted in the Atlantic Region, Mariposa outyielded Salvo and other early varieties of Timothy.

Its yield, leafiness and height are similar to those of Richmond Timothy.

Mariposa Timothy is a good companion when mixed with Flemish type Alfalfa such as Apica

(Seeding rate: 9-11 kg/ha in a pure stand)

**CHAMP**

An early maturing timothy that is earlier than Itasca and later than Basho. This variety has food yield in both first and second cut.

In 1998, Champ was the standard timothy in the Atlantic Trials, with yields of 5.0 t/ha for first cut; and 3.4 t/ha for second cut.

This variety has excellent seedling vigor and may be readily established in fall seeding between approximately August 15 and September 10.

The distinctive characteristic of this variety is its quick regrowth and aftermath production. Its heading date is approximately June 27.

(Seeding rate: 9-11 kg/ha)

**NOVIO (Co-op Exclusive)**

A new variety of Timothy recommended for the Atlantic Region. Novio is a high yielding variety of Timothy with very good digestibility and good regrowth.

In trials conducted in Atlantic Canada, Novio shows an outstanding performance as a medium type Timothy, where its yield is 107% of the
check in the first cut and 104% in the second cut. Because of its high yield, good aftermath, excellent winter survival and high digestibility, this variety is ideal for stored forage and in a continuous grazing program. 

Its heading date is approximately June 30. 
(Seeding rate: 9-11 kg/ha in a pure stand)

**CLIMAX**

A medium maturing timothy that has very good yield. 
Climax outyields the standard Champ by 7% in the first cut. Its yield in the second cut is slightly higher than Salvo. 

This variety grows tall and leafy before the first cut. Its heading date is approximately July 1. 
(Seeding rate: 9-11 kg/ha)

**ITASCA (Co-op Exclusive)**

A medium maturing variety that produces a leafy stand and the best regrowth after cutting than any of the other varieties tested in the Maritimes.

In trials conducted in the Atlantic region, Itasca timothy shows outstanding yields, outperforming every early, medium and medium-late varieties of timothy recommended. This variety yields 109% of the check variety in the first cut and 105% in the second cut. 

Its heading date is approximately July 4. 
(Seeding rate: 9-11 kg/ha in a pure stand)

**WINNETOU (Co-op Exclusive)**

Winnetou is a late heading timothy with high dry matter yields and significantly improved forage quality. This variety has excellent disease resistance and has good winter hardiness.

Winnetou has a low tendency to produce stems after the first harvest in the spring, making it a top choice for pasture renovation.

In the latest Maritime Forage Variety Evaluations, Winnetou showed yields similar to the check variety and out-yielded other late timothy varieties such as Drummond and Farol.

Its high dry matter yields and outstanding forage quality makes Winnetou a great choice for Maritime farmers growing silage or hay or for the ones pasturing animals. 

Its heading date is approximately July 8. 
(Seeding rate: 9-11 kg/ha)
**DRUMMOND**

A Late maturing Timothy that has high yield in the first and second cut.

Drummond Timothy has been widely tested in the Atlantic Trial and its performance has been outstanding as a late Timothy. This variety of Timothy is quite resistant to rust. Its heading date is approximately July 8.

(Seeding rate: 9 - 11 kg/ha)

**COMMON TIMOTHY**

Timothy is widely adapted, easy to establish and maintain, also is compatible with all legumes. When cut at the boot to heading stage, it is a good forage for all classes of livestock. Good second crop can be obtained if the first crop is removed at the heading stage and before bloom appears.

Timothy added to legume mixture provides insurance against loss of forage production during a year in which legumes winterkill. This cultivar will grow in acid, wet soils, but both yield and quality are improved when grown on well drained soils, where both, lime and fertilizer are added.

(Seeding rate: 9-11 kg/ha)

**CO-OP CERTIFIED MIXTURES**

**APICA 65% - NOVIO 35%**

An excellent early mixture for well-managed fields. It will produce a high yield, long term stand if planted on fertile, well-drained soil. This mixture is a good choice for an early hay-haylage system.

(Seeding rate: 15 kg/ha)

**APICA 65% - RICHMOND 35%**

A top yielding mixture that is well suited for an early cut of hay-haylage. The presence of a Flemish Alfalfa (Apica) and an early Timothy gives this mixture an early advantage over other standard mixtures.

Like any other mixture with Alfalfa in it, this mixture requires well drained soils, PH of 6.5 or greater and good fertility.

(Seeding rate: 15 kg/ha)
**AC CARIBOU 65% - AURORA 35%**

A high yielding, high quality mixture that is suited to well drained soils, with high PH and a good fertility. The fibrous roots of the timothy improves resistance to frost heaving.

(Seeding rate: 15 kg/ha)

**AC CARIBOU 65% - ITASCA 35%**

Our best mid-season mixture for well-managed fields. It will produce a high yield, long-term stand when planted on fertile, well-drained soil.

(Seeding rate: 15 kg/ha)

**WINNETOU 85% - AC CHRISTIE 15%**

An excellent mid-season forage mixture that is highly recommended for hay production.

The presence of AC Christie Red Clover in this mixture will provide farmers with a high yielding and a long lasting mix.

(Seeding rate: 13 kg/ha)

**AC ENDURE 60% - ITASCA 40%**

An excellent mid-season mix that is suitable for fair to well-drained soil. This mix makes a good short-term stand and is a good choice for a later hay-haylage system.

(Seeding rate: 12 kg/ha)

*For your convenience, Co-op Certified Forage Mixtures come pre-inoculated.*

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**RECOMMENDED MIXTURES FOR THE ATLANTIC PROVINCES**

The mixtures that are indicated “PREMIXED” will be available from your Co-op Farm Stores. Other mixtures will be mixed based on your request.

**RECOMMENDED CERTIFIED HAY MIXTURES**

The persistence and yield of the following recommended hay mixtures will be superior on well limed and fertilized soils. The mixtures with bromegrass and orchardgrass may be difficult to dry since first cut heading dates are in late May/early June for most areas in the region. A hay drier may be necessary for mixtures with considerable amount of legumes.
### A. Moderate to Well Drained Soils

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Rate</th>
<th>Comments</th>
<th>Co-op Suggested Certified Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>65% Alfalfa 35% Timothy</td>
<td>15 kg/ha</td>
<td>Although alfalfa is not as difficult to wilt as red clover, a hay drier will allow baling at higher moisture improving leaf retention.</td>
<td>Apica/Novio (PREMIXED) Apica/Richmond (PREMIXED)</td>
</tr>
<tr>
<td>50% Alfalfa 50% Bromegrass</td>
<td>20 kg/ha</td>
<td>Select an early type of alfalfa. Bromegrass can be superior to timothy in quality and regrowth.</td>
<td>Apica/Radisson</td>
</tr>
</tbody>
</table>

### A. Moderate to Well Drained Soils (continued)

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Rate</th>
<th>Comments</th>
<th>Co-op Suggested Certified Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>60% Alfalfa 40% Orchardgrass</td>
<td>17 kg/ha</td>
<td>Select an early type of Alfalfa. This mixture is well adapted to three cuts. Orchardgrass has excellent regrowth potential but, matures very early; therefore the first cut should be harvested as haylage.</td>
<td>Apica/Kay</td>
</tr>
<tr>
<td>70% Orchardgrass 30% Timothy</td>
<td>14 kg/ha</td>
<td>Three cuts are possible. Heads out in late May/early June; therefore, plan to use first growth for pasture or haylage. Use very early timothy cultivars.</td>
<td>Kay/Champ</td>
</tr>
<tr>
<td>70% Bromegrass 30% Timothy</td>
<td>15 kg/ha</td>
<td>This mixture is well adapted to deeper drought soils. Due to early maturity, plan to take first cut as haylage. Use early timothy cultivars.</td>
<td>Radisson/Champ</td>
</tr>
</tbody>
</table>

### B. Poor and Imperfectly Drained Soils

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Rate</th>
<th>Comments</th>
<th>Co-op Suggested Certified Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>15% Red Clover 85% Timothy</td>
<td>13 kg/ha</td>
<td>Red Clover is difficult to field cure. A hay drier will reduce heating in the mow. Red clover is a short lived perennial which usually</td>
<td>AC Christie/Winnetou (PREMIXED)</td>
</tr>
</tbody>
</table>
### B. Poor and Imperfectly Drained Soils (continued)

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Rate</th>
<th>Comments</th>
<th>Co-op Certified Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>doesn’t produce longer than three years. Avoid excessive red clover in mixtures.</td>
<td></td>
</tr>
<tr>
<td>35% Timothy 14 kg/ha 65% Reed Canarygrass</td>
<td></td>
<td>Low alkaloid varieties of Canarygrass can be used on farms without hay driers or on poorly drained fields, which are subjected to periodic flooding. The quality and palatability declines rapidly following heading.</td>
<td>Champ/Venture</td>
</tr>
<tr>
<td>35% Timothy 18 kg/ha 65% Meadow Fescue</td>
<td></td>
<td>Meadow fescue heads early. It needs to be grown with early timothy cultivars and harvested early. Meadow fescue should provide better mid-summer and fall regrowth for either 2nd cut or after grazing.</td>
<td>Champ/Sigmund</td>
</tr>
<tr>
<td>35% Timothy 12 kg/ha 65% Birdsfoot Trefoil</td>
<td></td>
<td>Trefoil is often difficult to get established properly. Trefoil can handle lower fertility situations and needs 50% bloom before harvest. Trefoil will not persist under frequent cutting.</td>
<td>Champ/AC Langille</td>
</tr>
<tr>
<td>Timothy 10 kg/ha</td>
<td></td>
<td>Straight timothy should be considered on farms without hay driers and/or in coastal areas that are subject to difficult drying conditions. Select varieties with varying maturities to spread out the harvest season.</td>
<td>Varieties listed on pages 14 - 17</td>
</tr>
</tbody>
</table>

**RECOMMENDED CERTIFIED HAYLAGE MIXTURES**

The following mixtures contain significant amounts of legumes which require an adequate pH and soil fertility level for optimum performance and persistence. Careful attention should be paid to the timing of the last cut. Although none of the mixtures are well suited to grazing of the aftermath, those containing Ladino white clover will tolerate this practice better than those with predominately alfalfa and red clover.
### A. Loamy Soils with good surface and internal drainage

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Rate</th>
<th>Comments</th>
<th>Certified Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>80% Alfalfa, 20% Timothy</td>
<td>15 kg/ha</td>
<td>This high yielding, high quality mixture is suited to well drained soils, with a minimum pH of 6. Having a grass in the mix improves dry down and reduces frost heaving.</td>
<td>AC Caribou/Itasca, Apica/Novio</td>
</tr>
<tr>
<td>60% Alfalfa, 40% Orchardgrass</td>
<td>17 kg/ha</td>
<td>Orchardgrass is less compatible with alfalfa than timothy, but has superior regrowth and is better suited to a three cut system. Select an early alfalfa.</td>
<td>Apica/Kay</td>
</tr>
<tr>
<td>55% Alfalfa, 45% Bromegrass</td>
<td>20 kg/ha</td>
<td>This mixture should be used on well drained fields. Choose an early type of alfalfa. Bromegrass is very compatible with alfalfa.</td>
<td>Apica/Radisson</td>
</tr>
</tbody>
</table>

### B. Variable to imperfectly drained soils

**Heavy soil moisture.**

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Rate</th>
<th>Comments</th>
<th>Certified Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>30% Alfalfa, 30% Timothy, 40% Bromegrass</td>
<td>18 kg/ha</td>
<td>For fields containing soils with variable drainage. eg. formed dykeland. This mixture does well in an aggressive 2-3 cut system, starting with an early June harvest.</td>
<td>AC Caribou/Itasca/Radisson</td>
</tr>
<tr>
<td>60% Red Clover, 40% Timothy</td>
<td>12 kg/ha</td>
<td>Best suited for short rotations. Contains a high percentage of Red Clover in the first two production years, as the red clover thins out, both yield and quality will decline.</td>
<td>AC Endure/Itasca (PREMIXED)</td>
</tr>
<tr>
<td>30% Red Clover, 10% White Clover, 40% Timothy, 20% Meadow Fescue</td>
<td>20 kg/ha</td>
<td>The additional grass improves the reliability and the longevity of this mixture.</td>
<td>AC Endure/Milkanova/Itasca/Sigmund (PREMIXED)</td>
</tr>
</tbody>
</table>
RECOMMENDED CERTIFIED PASTURE MIXTURES
Well Managed Controlled Grazing System

These mixtures are designed with careful consideration to the specific attributes of each species. Larger, erect, easily defoliated species with quick regrowth are best suited for rotational grazing and conservation. Close attention must be paid to fertility levels, stocking rates and rotational grazing practices, if the following mixtures are to remain productive.

A. Moderately Well to Well Drained Soils

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Rate</th>
<th>Comments</th>
<th>Co-op Suggested Certified Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% White Clover 12 kg/ha 80% Orchardgrass</td>
<td></td>
<td>A dual purpose mixture for early cut silage and early rotational grazing. Must be managed well, if underutilized will become stemmy. Subject to winter kill.</td>
<td>Milkanova/Artic</td>
</tr>
<tr>
<td>10% White Clover 22 kg/ha 40% Orchardgrass 50% Perennial Ryegrass</td>
<td></td>
<td>Palatable mixture. Caution, perennial ryegrass lacks winter hardiness, plant only where appropriate. Consideration must be given to winter kill susceptibility.</td>
<td>Milkanova/Kay/Baston</td>
</tr>
<tr>
<td>10% White Clover 22 kg/ha 30% Orchardgrass 60% Meadow Fescue</td>
<td></td>
<td>Dual purpose mixture for early cut silage and rotational grazing. Meadow fescue helps give a better bottom to the pasture producing a tighter sod, more resistant to punching.</td>
<td>Milkanova/Kay/Sigmund (PREMIXED)</td>
</tr>
</tbody>
</table>

B. Imperfectly Drained Soils

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Rate</th>
<th>Comments</th>
<th>Co-op Suggested Certified Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% White Clover 20 kg/ha 30% Timothy 60% Meadow Fescue</td>
<td></td>
<td>Timothy, though less productive than orchardgrass, is more winter-hardy, especially on imperfectly drained soils. Some timothy cultivars are more productive under grazing than others.</td>
<td>Milkanova/Winnetou/Sigmund (PREMIXED)</td>
</tr>
<tr>
<td>10% White Clover 22 kg/ha 30% Orchardgrass 60% Meadow Fescue</td>
<td></td>
<td>Dual purpose mixture for early cut silage and rotational grazing.</td>
<td>Milkanova/Kay/Sigmund (PREMIXED)</td>
</tr>
</tbody>
</table>
TRADITIONAL MARITIME MIXTURES

We also have the following available:

- **70-15-15 Itasca, Low Brassica**
  (70% Itasca Timothy + 15% DC Red Clover + 15% Alsike Clover)

- **70-15-15 Climax, Low Brassica**
  (70% Climax Timothy + 15% DC Red Clover + 15% Alsike Clover)

- **70-15-15 Common, Low Brassica**
  (70% Common Timothy + 15% DC Red Clover + 15% Alsike Clover)

- **60-20-20 Climax, Low Brassica**
  (60% Climax Timothy + 20% DC Red Clover + 20% Alsike Clover)

- **60-20-20 Common, Low Brassica**
  (60% Common Timothy + 20% DC Red Clover + 20% Alsike Clover)

- **80-20 Climax, Low Brassica**
  (80% Climax Timothy + 20% Alsike Clover)

- **80-20 Common, Low Brassica**
  (80% Common Timothy + 20% Alsike Clover)

- **Clover Double Mix**
  (80% Common Timothy + 20% DC Red Clover)

*(Seeding rate for Maritime Mixtures: 18-20 kg/ha)*

ATLANTIC PASTURE MIXTURES

**MILK FLO PASTURE**

A widely adapted mixture that is easy to establish. This mixture is very popular among farmers in the Atlantic Region. The Milk Flo Pasture is a mix of six different type of grasses in the following percentages:

- Orchardgrass: 25%
- D.C. Red Clover: 12%
- Common Timothy: 23%
- Alsike Clover: 11%
- Meadow Fescue: 21%
- White Clover: 8%

*(Seeding rate: 15-18 kg/ha)*

**GREEN PERMANENT PASTURE**

This Permanent pasture is very well adapted to most types of soil. The combination of different grasses and legumes will provide good quality forage to the herd while grazing in the fields.

The Green Permanent pasture is a mix of the following species:

- Common Timothy: 25%
- Alsike Clover: 10%
- Perennial Ryegrass: 20%
- White Clover: 10%
- Meadow Fescue: 35%

*(Seeding rate: 15-18 kg/ha)*
EQUINE PASTURE MIX
A broad spectrum pasture mix especially designed for horses. This mixture provides excellent feed value and long term endurance. The Equine Pasture Mix is also designed to form a sod which will withstand the abuse from tramping and close cropping. This mixture performs well in our maritime growing conditions.
This special horse pasture mix is packed in 44 lbs. ready to plant 2 acres at the seeding rate of 22 lb/acre.
This mixture provides the following amount of seed per acre:
Common Timothy  3 lbs.  Perennial Ryegrass  4 lbs.
Brome grass     4 lbs.  Kentucky Blue Grass  1 lb.
Orchardgrass    4 lbs.  Creeping Red Fescue  2 lbs.
Meadow Fescue   4 lbs.
(Seeding rate: 22 lbs./acre)

LAND IMPROVEMENT MIXTURES

PLOWDOWN MIXTURE
This mixture is based on legume species. Legume such as Red Clover and Sweet Clover have long been used as nitrogen-fixing, green manure or plowdown crops, to add organic matter and nitrogen to the land, as well as to improve soil structure.
The Plowdown mixture contains the following legume species:
Single Cut Red Clover  55%
Alsike Clover         30%
Yellow Blossom Sweet Clover  15%
(Seeding rate: 15-18 kg/ha)

GROUND COVER MIXTURE
An easy establishing mixture, that can be used in a short term crop rotation program. The Ground Cover mixture is ideal for soil erosion control and to break disease cycle when rotating crops.
This mixture contains the following species:
Common Timothy  70%
Single Cut Red Clover  15%
Alsike Clover      15%
(Seeding rate: 15-18 kg/ha)

CUSTOM MIXTURES
Your Co-op offers you the option to create your own mix to meet your specific needs. When formulating these mixes, please specify the percentage of each species you wish to have in the mixture. These mixes will be blended, pre-inoculated, bagged and tagged at our
licensed mixing facility and sent you your Co-op. A nominal fee of $8.00/bag will be charged to cover the cost of this service.

**SEED INOCULANTS**

Seed inoculants contain bacteria that are responsible for legumes being able to use nitrogen from the air. For each legume species, there is a unique strain of bacteria that assists in this nitrogen-fixing function. For example, the Balsac strain alfalfa inoculant has been shown to be the most effective in the Atlantic Region.

It is recommended that all legume seeds be treated with the correct strain of fresh inoculant just prior to seeding.

Your Co-op Farm store carries a good selection of inoculants:

- Alfalfa and Sweet Clover - 1 package treats 25 kg of seed
- Bird’sfoot Trefoil - 1 package treats 25 kg of seed
- Red, White, Ladino and Alsike Clover - 1 package treats 25 kg of seed
- Soybean - 1 package treats 700 kg of seed
- Fababean - 1 package treats 455 kg of seed
- Pea and Vetch - 1 package treats 700 kg of seed

**SUMMER ANNUAL CROPS**

**COMMON SORGHUM-SUDAN GRASS**

Sorghum-Sudan Grass hybrids are tall growing, mainly recommended in longer season areas.

These annual grasses require medium to well-drained soils and good fertility.

Plants should not be grazed or cut too early, during droughts, or after frosts in order to decrease the risk of prussic acid poisoning.

In longer season areas, Sorghum-Sudan Grass seeded in early May will be ready for grazing in August. Rotational grazing makes better use of the forage and allows regrowth of previously grazed areas.

(Seeding rate: 14-16 kg/ha)

**COMMON JAPANESE MILLET**

An annual grass that is grown occasionally as forage. It grows 2 to 4 feet tall. The inflorescence is a panicle made up from 5 to 15 sessile erect branches. Japanese Millet has an erect growth habit, its seeds are swollen or enlarged. The main value of this annual grass is as a pasture or soilinng crop.

The plant is difficult to cure for hay because of its thick stems, but its hay is palatable when cut before plants start heading.

(Seeding rate: 20-40 kg/ha)
COMMON VETCH

An annual forage crop that can be grown as a clover and green-manure crop, or for hay, pasture or silage. Vetch makes its best development under cool temperature conditions. All Vetches grow best on fertile soils.

In Charlottetown, vetches have been tested as short term forage crop and also as fast growing legume rotation crops. Most common vetches, sometimes called spring vetches are semi-vinyl plants with slightly large leaves and stems that may grow 2 to 5 feet or more in length.

(Seeding rate: 40 kg/ha)

WHITE MUSTARD

BRACO WHITE MUSTARD

Braco is a new generation of white mustard developed with the purpose of reducing nematode population in potato fields and other vegetable crops.

Braco has the capacity to reduce the Cyst Beet nematode by more than 89%.

This variety is a good source of green manure. It has fast emergence and an efficient soil covering, providing a natural weed control and a good deep root system.

For best results in nematode reduction, Braco should be planted in late July to mid August, after the main crop has been harvested and the field has been plowed. This variety has a high Nitrogen uptake capacity and reacts very positively to a good application of manure.

(Seeding rate: 20-25 kg/ha)

OIL SEED RADISH

IKARUS OIL SEED RADISH

Oil Seed Radish is a cultivar that is gaining popularity amongst Maritime growers, as a cover crop rotation on potato fields and some other vegetable crops.

Ikarus is a new generation of Oil Seed Radish developed to reduce Nematode population in potato and other root crops.

This crop should be seeded in late June or early July. It will grow through the fall season without being affected by early frost.

The main attributes of this crop are that it provides rapid soil cover, excellent erosion control, good source of organic matter and excellent breakdown in disease cycles, such as nematode.
For good growth, this crop must have a large amount of nitrogen available. This can be provided either from recent manure application or nitrogen left in the soil from previous crops.

(Seeding rate: 10-14 kg/ha)

**PEARL MILLET**

*PP102 PEARL MILLET*

A forage-type Pearl Millet with the added benefit of nematode suppression.

Research conducted by Agriculture and Agri-Food Canada (AAFC) in Quebec has shown Pearl Millet to control nematodes in soil, making it an ideal crop to be grown in rotation with potatoes, strawberries and apples. Also, forage Pearl Millet can be used as conserved forage or for pasture. When planted after risk of frost has passed, Pearl Millet can produce high quality forage with yields similar to Sorghum-Sudan Grass but without the risk of prussic acid poisoning.

With its ability to suppress nematode populations, as well as produce high quality forage, PP102 Pearl Millet makes a good choice as an annual crop in rotation.

Seeding rate: when drilling use 8-14 kg/ha
when broadcasting use 17-23 kg/ha

**FORAGE KALE**

*COMMON FORAGE KALE*

Like other brassica, Forage Kale is an excellent crop for providing high quality pasture from September to December when many other crops have stopped production.

Forage Kale will stand tall resisting frost and surviving some snow falls without changing its quality.

This crop should be seeded mid-June late-July to provide high quality forage for grazing in late fall. They required well drained, fertile soils with a PH of at least 6.0

Seeding rate: when drilling use 3-5 kg/ha
when broadcasting use 4-6 kg/ha

**FORAGE RAPE**

*COMMON FORAGE RAPE*

Forage Rape is a broadleaf, upright-growing plant that is highly suitable for pasture program for cattle, mature sheep and goats.
Like any other Forage Brassica, Rape is frost hardy and it can be left out for grazing in October, November and December. This leafy cultivar should be seed early in July for best results in the establishment of this late season crop.

Seeding rate: when drilling use 2-5 kg/ha
when broadcasting use 5-7 kg/ha

**STUBBLE TURNIPS**

**COMMON STUBBLE TURNIPS**

Stubble Turnips are fast-growing, with large leaves and root bulb. About ¾ of the root bulb is above ground and can be readily grazed by livestock. Both the bushy tops and the large roots are eaten by the animals when grazing.

Like Forage Kale and Forage Rape, Stubble Turnips are an excellent crop for providing high-quality pasture from September to December.

Forage Turnips are planted using the same guidelines for Forage Rape. It should be seeded on well drained soils with a pH at least 6.0 and with good fertility.

Seeding rate: when drilling use 2-5 kg/ha
when broadcasting use 3-6 kg/ha

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**INLAND PLASTICS Ltd.**

Heavy Duty Covers for Round and Square Bale Hay

- Silver/Black 20’ X 48’
  Covers approx. 750-1,000 Square Bales
- Silver/Black 23’ X 48’
  Covers approx. 72 Bales 4’ x 4’ Long
- Silver/Black 25’ X 33’
  Covers approx. 48 Bales 4’ x 4’ Long
- Silver/Black 25’ X 48’
  Covers approx. 72 Bales 4 1/2’ x 4’ Long
- Silver/Black 28’ X 48’
  Covers approx. 72 Bales 5’ x 4’ Long
- Silver/Black 33’ X 48’
  Covers approx. 72 Bales 6’ x 4’ Long
Crops must be fertilized in order to produce well. Unfertilized crops are often characterized by low yields, low protein content and low nutritional value. Your fertility plan should be based on soil samples taken from each field.

From the soil sample results, Valley Fertilizers Ltd. can produce custom blended fertilizers, especially designed to meet your cropping needs. This will ensure that you are not wasting money on unnecessary fertilizers, or robbing yourself of yield by under fertilizing. In the absence of a soil test the following recommendations may be followed.

The nutrient needs of forage mixtures will change depending of the species present in the stand. In stands with over 60% legume content, most of the nitrogen is being provided by the legume. Legume forage stands require large amounts of phosphorous and potash for root growth and increased persistence.

Follow one of the fertility schedules below, based on the content of legume in your stand:

Forages with over 60% legume: apply 5-10-30 at 300 kg/ha first thing in the spring when there is about one inch of growth. Apply 0-10-30 at 250 kg/ha each cut, and 0-0-60 at 150 kg/ha after the last cut, to increase your legume’s winter survival.

On forage fields that have less than 60% legume content: apply 34-0-0 at 150 kg/ha, when growth is starting in the spring. After each cut apply 18-6-18 at 250 kg/ha, and 0-10-30 at 100 kg/ha after

Boron should be added to the fertilizer blend when fertilizing alfalfa.
WEED CONTROL IN FORAGES

If forage crops are to produce at their full potential, weed control is necessary. While direct, band seeding of forages promotes a more vigorous stand with fewer weeds.

In alfalfa and birdsfoot trefoil, direct or underseeded, many broadleaf weeds may be controlled using Cobutox 2,4-DB. This herbicide can be applied at the rate of 2.75 - 3.5 L/ha when crop is in the first to fourth trifoliate leaf stage. Do not apply if crop is to be used for seed production later in the season.

Cobutox can be used for establishment of new seedlings of red clover/grass mixtures, either direct or underseeded. The application rate should be 2.75 - 3.5 L/ha. Treat crop as soon as possible after the first trifoliate leaf appears. Do not spray sweet clovers.

To control quackgrass in forage fields, a full rate application of IPCO Factor 540 (0.85 - 1.25 L/ha) in the fall is recommended. This is a non-residual treatment that will give two seasons control of quackgrass in pure stand legumes.

Some other effective herbicides used in established grasses for pasture or hay are:
- 2,4-D to control: blueweed, chicory, dandelion, hawkweed, milkweed, wild carrot, yellow rocket, etc.
- MCPA to control: buttercup, burdock, dandelions, and wild carrot.
- Banvel to control: Canada thistle, field bindweed, leafy spurge, tansy ragwort, and chickweed.

Your Co-op Country store carries a broad range of crop protection products to control weeds in forages.

For further details on the use of these chemicals and the susceptibility of weeds to them, see publication 75, “Guide to Chemical Weed Control”.

For Product Labels and MSDS, visit our website: www.co-opcountry.com
WEED CONTROL IN FORAGE INCREASES YIELD

If forage crops are to produce at their full potential, weed control is essential. While direct, band seeding of forages promotes a more vigorous stand with fewer weeds, chemical weed control is probably still necessary. The following charts give an overview of effective products, carried at CO-OP Farm Store to control the weeds listed.

### FORAGE LEGUMES DIRECT SEEDED PRODUCTS

<table>
<thead>
<tr>
<th>Site</th>
<th>Herbicides (active ingredients)</th>
<th>Broadleaf weeds</th>
<th>Mustard</th>
<th>Lambsquarters</th>
<th>匍匐型杂草抗性</th>
<th>Foxtail</th>
<th>Barnyard grass</th>
<th>Wild oats</th>
<th>Old witch grass</th>
<th>Quickgrass</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREFLAN (BONANZA)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>IPCO COBUTOX 625</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>IPCO COBUTOX 625 &amp; IPCO MCPA 500</td>
<td>X</td>
<td>X</td>
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<tr>
<td>IPCO FACTOR 540</td>
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<td>X</td>
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</table>

### ESTABLISHED FORAGE LEGUMES PRODUCTS

<table>
<thead>
<tr>
<th>Site</th>
<th>Herbicides (active ingredients)</th>
<th>Canada Thistle</th>
<th>Chokory</th>
<th>Yellow Rocket</th>
<th>Seedling Dandelions</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPCO COBUTOX 625</td>
<td></td>
<td>X</td>
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<tr>
<td>SENCOR</td>
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<tr>
<td>IPCO FACTOR 540</td>
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</tbody>
</table>

*SPOT TREATMENT OR PREPLANT

### PASTURES MOSTLY GRASSES PRODUCTS

<table>
<thead>
<tr>
<th>Site</th>
<th>Herbicides (active ingredients)</th>
<th>Blue Weed</th>
<th>Burdock</th>
<th>Buttercup</th>
<th>Canada Thistle</th>
<th>Chickweed</th>
<th>Dandelion</th>
<th>Goats Beard</th>
<th>Tansy Ragwort</th>
<th>Water Hemlock</th>
<th>Wild Carrot</th>
<th>Goldenrod</th>
<th>Hawkweed</th>
<th>Leaft Spurge</th>
<th>Milkweed</th>
<th>Nodding Bull Thistle</th>
<th>Scotch Thistle</th>
<th>Field Bindweed</th>
<th>Yellow Carrot</th>
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</thead>
<tbody>
<tr>
<td>IPCO 2,4-D AMINE 600</td>
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**USE ONLY AS SPOT TREATMENT AT EARLY FLOWERING OF MILKWEED.**

ALWAYS CHECK MANUFACTURERS’ LABELS FOR COMPLETE DETAILS OF USE.