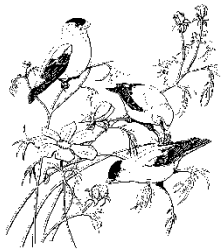


PLANTING & SEEDING GUIDE

Prairie once covered the landscape in southern Manitoba. Growing some in your yard gives you a wonderful opportunity to learn about our fascinating prairie firsthand. It puts you in touch with our history and helps preserve these disappearing plants. In addition, many butterflies, birds, bees, beneficial bugs and other creatures are attracted to your garden for nectar, food, and shelter, creating not just a prairie garden but a whole prairie community. Whether your yard is big or small, you can enjoy a beautiful, low-maintenance prairie.

PREPARATION

Preparing the soil before planting a prairie is a very important first step. This enables the plants to grow and fill in the space as fast as possible. If the topsoil is very sandy or heavy clay (very sticky when wet and very hard when dry), add 8-10 cm (3-4") of organic matter such as peat moss, compost, manure or leaves and work it in.

If you are in a new housing development there may be no topsoil at all. There may be only grey subsoil which has no organic matter and few nutrients. Plants grow poorly in subsoil. You need to add 15 cm (6") of mixed topsoil.

Your site should be weed-free before planting, the same as if you are starting a lawn, vegetable garden or flower bed. Weeds and existing vegetation can be killed in several ways. You can smother, cultivate spray or a combination of these methods. Smothering is fine for small areas. Simply cover the site with heavy black plastic or some other heavy material and leave it on for at least one full growing season. Then cultivate and plant. A faster way is to cover the area with 30 layers of newspaper or cardboard and then add 20cm (8") of topsoil. Planting can begin immediately. The newspaper/cardboard and the grass below it decompose.

Sod cutters also work well for lawn removal when quack grass is not present, however, you may need to replenish the area with more topsoil or organic matter.

Cultivation works well to eliminate most weeds and to prepare the soil bed. A lawn can be removed by cultivating 3 times, a few weeks apart. Make sure the grassroots are dead before planting. Beware of quack grass in the lawn. It has wider leaf blades than lawn grass. If quack grass is present, smothering or spraying with herbicide works better than cultivation.

No one method ensures the area will be free of weed seeds in the soil. However, one final step in preparation will greatly reduce weeds in a new prairie. Once the site is all ready, allow the weeds to sprout after a good rain or watering. Then kill the weeds while still very small, by tilling 2.5 cm (1 inch) deep. If the weeds come up very thick again, repeat one more time. Very weedy sites may require 2 years of weed control before planting or seeding.

Taking the time to prepare your site is worth the effort. Eliminating as many weeds as possible before planting helps ensure a successful prairie and greatly reduces the weeding required after planting. Your wildflowers and grasses will be off to a flying start and will begin to provide you with many years of enjoyment.

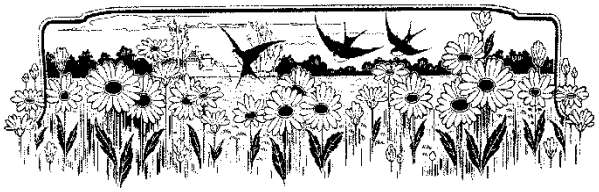
PLANTING

Plugs: Prairies can be started in two ways, either by plugs (transplants) or by seeding. There are several advantages to starting with plugs. The main reason is quicker results. Fast-growing species will bloom in the first year. Most species will bloom and fill in the second year. Some species, especially those with small seeds, can be easier to establish with plugs than by seeding. You can plant directly into dead turf or cultivated soil. With dead turf use a tool to make holes slightly larger than the plugs. Fill the space around the plug with peat moss, compost, or topsoil. The soil is not disturbed by cultivation so many weed seeds in the soil do not germinate. This method is useful on heavy clay sites where it can be difficult to rototill due to excess soil moisture.

Just before planting, apply a layer of weed-free, flax straw mulch 2 - 5 cm (1 - 2 inches) deep. This helps prevent weed germination, resulting in much less weeding during the first 2 years of establishment. It also helps retain moisture. Make openings in the mulch when planting the plugs. Small or medium-sized wood chips or bark chips can also be used for mulch. A gravel mulch, 2.5 cm (1") deep, is better for species which prefer dry soil.

The spacing of the plugs depends on the species involved. Many species for dry to medium sites tend to be smaller plants and these should be planted 20 cm (8") apart. One tray of 70 plugs will plant 35 square feet at 20 cm spacing. Species for medium to wet soil should be planted 25-30cm (10-12") apart. One tray of 70 plugs then will cover 50-70 square feet.

Plugs can be planted from late May to mid July, to give them time to root well before winter. The new planting will require watering once or twice a week for about 6 weeks if it doesn't rain until the plants are established. Occasional watering during the rest of summer may be required if long dry spells occur. Late summer and fall planting of plugs is not recommended especially in heavy clay soils. This is because the plants do not have time to root properly before freezing up. Some plants can then be heaved out of the ground as the soil thaws in spring, causing the death of the plants. If late summer or fall planting is your only option, it is better to use 4.5" pots since they do not heave out. Fall seeding can also be done.



Seeding: This is an easier method of planting a prairie and is more economical, however it takes a little longer for results. It usually takes 3-5 years to establish a prairie from seed. The best time for seeding is late April to July or October to November before it snows.

On heavy clay soils, October or November seeding tends to work better. Fall seeding exposes the seed to a cold, moist period called stratification. This improves the germination of many wildflower seeds. When seeding in late spring some flower seeds and most grasses will germinate immediately and other varieties will wait until the following spring.

For small areas, seeding can be done by hand broadcasting. To ensure even distribution of the seed, mix the seed with some type of filler material such as peat moss, sawdust or vermiculite. Moisten the filler material slightly so the seed will stick to it. Mix the seed evenly into the filler. Use 1 bushel (8 gallons or 36 litres) of filler per 1,000 square feet. Take half of the total mix and slowly scatter it across the whole area to be seeded, trying not to run out before completely covering the site. Then spread the second half of the mix evenly over the same area, walking perpendicular to your first pass.

After seeding, cover lightly by raking, then pack with a lawn roller. Packing is very important. Packing provides good seed contact with the soil, which improves germination. Applying 2 or 3 cm (1") of mulch, such as weed-free straw, after seeding helps keep the site moist. If conditions are dry after seeding, watering once or twice a week for 6-8 weeks will give optimum germination and seedling survival. Very sandy soils may need watering more often. Do not over-

water. Overwatering can drown seedlings, especially on heavy clay soil. After 8 weeks, water occasionally if dry spells occur, to stimulate good root growth. Watering the second year will not be necessary unless it is a dry spring.

When seeding a prairie, one must be patient. The plants remain small for the first year or two because their energy is mainly going to establish a deep root system. They seem to be quickly overtaken by annual weeds, so before the weeds get too tall, the area should be mowed at 10-15cm (4-6"). Expect to mow every three weeks, 4-6 times the first year. This doesn't hurt the prairie plants and prevents the weeds from going to seed. It allows sunlight and good air circulation for the seedlings and makes the area look tidier. No matter how it looks don't be discouraged. The second year you will be amazed at the difference. More dormant wildflower seeds will germinate and add to the diversity of the prairie. Fast-growing species will provide you with long-awaited flowers. Gaillardia, Coneflower, Black-Eyed Susan, Yarrow, Goldenrods, and Sunflowers will bloom the second summer. Other species will bloom in the following years.

A combination of plugs and seeding can also be used to plant a prairie. You can seed the prairie grasses in spring or early summer and plant the wildflower plugs right after seeding. Or, an area of plugs can be planted and then in 2-3 years you can collect seed from these mature plants to seed another area.

Plant Selection: Choose the species based on soil conditions and the amount of sunlight your site receives. If you have mostly shade, prairie plants will not grow. A woodland garden with native shade plants is better.

A prairie is naturally made up of grasses and flowers. Grasses provide a green backdrop for the flowers and a lot of textural interest in the fall when flowering is finished. They also act as mulch and fill in the space between the flowers to help suppress weeds. 30-60% grasses are suggested. Select at least two types of grasses, one cool season (blooms in June) and one warm season (blooms in July/August), for early and late season cover and interest.

Select several different flowers with bloom times throughout the year so you always have something blooming. The larger the area being planted the more varieties you can include.

WEED CONTROL & MAINTENANCE

One of the reasons for planting a prairie is the ease of maintenance in this "Sustainable Landscape". Once established the chores of regular mowing, watering and fertilizing are almost eliminated.

For a plugged prairie, weeding is necessary several times in the first and second years. This takes out the competition and allows the plants to grow faster. It also prevents the weeds from reseeding. Weeding is very important for a successful establishment. Once established, the annual weeds disappear and little weeding is required. If perennial weeds appear, they should be pulled, cut off at ground level or very carefully spot-sprayed with herbicide to prevent spreading. This should only be done when it is very calm, such as in the early morning. As the prairie matures there will be less and less bare soil each year and therefore less chance for weeds to invade. Watering is usually needed in the first year. After this, rainfall is fine.

For a seeded prairie, weed control is very important in the first few years. During the first year prairie wildflowers and grasses grow slowly and annual and biennial weeds grow quickly. The easiest way to deal with the weeds is to mow the area with a lawn mower or weed eater. When the weeds reach 20-30 cm (8-12 inches), cut them back to 10-15 cm (4-6 inches). The prairie plants will still be small so they won't be damaged. Mowing the weeds allows the sunlight to reach the smaller prairie seedlings and keeps the weeds from reseeding. One of the most critical steps in the success of your prairie planting is mowing regularly during the first year of establishment. Expect to mow 4-6 times, the first year, about every 3 weeks, depending on rainfall. Let the vegetation grow taller in fall to protect the young plants over winter and help trap snow for insulation and spring moisture. Hand weeding is not encouraged during the first year because prairie seedlings are very small at that time and are easily damaged or pulled up along with the weeds. Mowing or cutting back with a weedeater is a better and easier option.

In the spring of the second year, mow the dormant planting very low (about 2.5 cm or 1 inch) and rake off the cuttings if thick. Spring mowing exposes the soil to the sun. This stimulates the germination of prairie seeds that are still dormant, as well as the growth of prairie plants that germinate in the first year. If weeds are still around in the second year, mow or cut back in mid-June to a height of 30 cm (12"). For scattered weed patches, spot mowing or hand weeding can be done to minimize impact on the young native plants. If fast-growing biennial weeds like Sweet Clover are present, they should be mowed or pulled just before flowering. Annual weeds will usually disappear as the prairie matures and the wildflowers and grasses take over.

For longer-term management of the prairie burning or mowing regularly will help ensure its success. It is best to leave the prairie plants standing in the fall so they can trap snow over the winter and provide shelter and food for wildlife. After a few growing seasons, the new prairie will start to build up thatch. This is simply an accumulation of dead plant material from previous years' growth. Before the land was settled, prairie fires were fairly common and this effectively removed the thatch.

Regular spring burning can be started at the beginning of the third growing season. It should generally be done in early to mid-spring and can be done every three to five years or so. Burning removes the dry plant material and exposes the soil. This allows the sun to warm the soil earlier resulting in increased growth, flowering and seed production. If burning is done in spring it also helps to set back cool season grasses and weeds which have already started to grow. This favours the warm-season prairie plants which are still dormant under the soil. Every precaution should be taken to burn safely. Follow local fire regulations and use caution.

If burning is not possible or you prefer not to burn, spring mowing is a good alternative. It can be done at the same time as burning. Mow very low to the ground, about 2.5 cm (1 inch). This simulates a fire by cutting back last year's vegetation and exposing the soil to the sun. It also makes the area look tidier first thing in the spring if you have skeptical neighbours. Many ground nesting birds build their nests in late spring so do not mow too late in the season.

Once established, a prairie is easy to maintain. Planting your prairie will give you a beautiful, low-maintenance, sustainable prairie community as well as the opportunity to learn a lot about our complex and fascinating grassland ecosystem.

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