

Asparagus: A Perennial Worth the Wait

Grow with USask



Asparagus (*Asparagus officinalis*) is a perennial vegetable that is easily grown on the Prairies. Although it takes several years to establish a productive asparagus patch, once established, that same asparagus patch can be productive for several decades to come. The key to a successful asparagus 'patch' is planting into light soil (sandy loam to loam) with good fertility and choosing the right cultivar.



contain seeds which eventually fall off and germinate into new plants. The formation of these berries (seeds) uses plant resources that are then not available to produce more or larger spears (the part that we eat!). More recent asparagus cultivars that have been released are male hybrids. Consequently, these recent cultivars are more productive than many of the older named varieties. Ten years of research at the University of Saskatchewan Vegetable Research Trials have shown that 'Guelph Millennium', 'Guelph Thiessen', 'Andreas', 'Arianne', 'Jersey Supreme' and 'Jersey Giant' consistently outperformed 19 other cultivars with 'Guelph Millennium' being the top yielder every year. More detailed information on the U of S Asparagus Cultivar trials can be found at: <http://veg.usask.ca/wp-content/uploads/Asparagus-book-2015.pdf>

Choosing the Right Cultivar

Asparagus plants are dioecious: this means that each plant is either a male or female plant. Older asparagus cultivars like 'Martha Washington' and 'Viking' were common cultivars to grow on the Prairies in the past. These cultivars had both male and female plants. While both female and male plants produce edible spears, research has shown that female plants may not be as productive as male plants since they also produce fruit (small red berries). These berries

Germinating Seed

Asparagus is native to most of Europe, northern Africa and western Asia. It grows best in cooler climates with warm summers and cold winters. Asparagus seed is slow to germinate: it can take up to two weeks at room temperature. The plants are very tender and fragile when they emerge. Although seeds can be directly planted out in spring, it is best to start seedlings indoors in February. Seeds should be planted 0.5cm deep. Keep planted seeds at room temperature and media moist. To avoid seed rot, do not



Female and male asparagus ferns



Male asparagus fern without fruit

overwater. Once seedlings have emerged, ensure that adequate light is available. Hold your hand 20-25cm above the plant and place a white sheet of paper beside the plant. If your hand makes a definite shadow on the white paper, your light is adequate. Fertilize asparagus seedlings once per week with 20-20-20 soluble fertilizer. Mix according to label directions.

■ Transplants

If you don't have the time or space to grow your own plants, check out your local garden centre in the spring for asparagus transplants or one year old crowns. Asparagus crowns refer to the roots of the asparagus plant. Do not transplant older asparagus crowns, crowns that appear diseased or crowns dug from an asparagus patch in decline. One of the biggest problems with asparagus is the disease,

Fusarium crown rot. Fusarium crown rot is a devastating disease that will destroy your asparagus patch and render your soil uninhabitable to asparagus for years. Fusarium crown rot can be spread by planting infected crowns in a new patch. Presently, there is no certification program in place to ensure that asparagus crowns are 'fusarium free'. Fusarium crown rot is common in soils but if you are lucky enough not to have it in your soil, one way of avoiding introducing it into your soil is to grow your own seedlings or purchase locally grown asparagus seedlings from a reputable grower. Avoid purchasing older asparagus crowns whenever possible.

■ Preparing the Soil

Because asparagus is a perennial crop, it is very important to prepare the soil in the asparagus patch with care and attention. If possible, choose an area with loam to sandy loam soil. The soil must have good drainage. Poorly drained soil will promote Fusarium crown rot disease. Prior to planting, add a layer of well rotted manure (at least 5 cm thick). Work the manure into the soil and ensure the area to be planted is worked well. Asparagus seeds, transplants and crowns should be planted out in spring or early summer. Planting can occur as soon as the ground has thawed and soil can be easily worked. Dig a trench at least 20cm deep. Plant seeds, crowns or transplants in the trench and cover with 5cm of soil. As the growing season progresses, fill in the furrow a little every few weeks, covering part of the plant but never burying the entire plant. By the end of the growing season, the trench should be level with the surrounding soil. Spacing is 30cm in-row and 2m between rows. After planting roots or transplants, water in with 10-52-10 fertilizer mixed according to label directions. This fertilizer is high in phosphorous and will encourage root growth.



Asparagus seedlings

■ Irrigation

While the new transplants or seedlings need moisture for good growth, it is very important not to overwater your new asparagus patch. It is best to water less frequently but deeply. Allow at least the top 2.5cm of soil to dry thoroughly before watering. Wet soil conditions encourage the development of Fusarium crown rot.

■ Fusarium Crown Rot

Symptoms of Fusarium crown rot in an asparagus patch include shriveled and rotting spears before or after emergence in spring. Ferns (spears that have been allowed to develop and grow) will be stunted, yellow to brown in color. As the disease progresses, crown vigor declines: fewer spear/ferns appear and eventually crowns die. Infected crowns and stems will have a reddish-brown discoloration when cut open. The damage usually appears in one section of the asparagus patch (usually the area that is the wettest) and eventually spreads throughout the entire patch. There are no treatments for Fusarium crown rot in asparagus. Do not replant into an area that you know has a history of Fusarium crown rot as the disease is long-lived in the soil. Fusarium crown rot can also be spread on cutting knives moving from infected spears to non-infected spears.

■ Weeding

It is important to keep your asparagus patch weed free. Weed control in perennial crop areas can sometimes be a challenge. If it is available, use wood or straw mulch (seed-free) between rows to keep the weeds down.

■ Harvesting

In order to establish a strong, healthy asparagus patch, refrain from harvesting any spears until your patch is at least 3 years old. Harvesting prior to year 3 will decrease the vigor of the plot and compromise the health of the developing crowns. In year 3, harvest up to 2 spears per plant. In year 4, harvest spears for 4-5 weeks. In year 5, harvest for 6-8



White Asparagus Spears



Asparagus spears ready for harvest



Admiring the harvest

weeks. A good rule of thumb is to stop harvesting when spear diameter is less than 10mm (3/8"). Spears should be harvested when they are 10-20cm (4-10") in length. Old spears will be fibrous. Cut spears up to 5cm below the soil line.

Traditionally, asparagus harvest occurs in spring. However, in certain parts of Asia, asparagus harvest occurs throughout the growing season. 'Mother Stalk' asparagus harvest refers to the method of harvest in which the first 4-5 spears that emerge in spring are allowed to grow and develop into full sized ferns. It is these 4-5 ferns that will supply food to the roots throughout the rest of the season. For the remainder of the season, spears are harvested from this same plant.

White asparagus: Have you ever wondered how white (blanched) asparagus is grown? Regular asparagus plants are grown in mounds of soil or mulch. These mounds exclude the light, limit the amount of chlorophyll that is produced and result in white spears. Spears are harvested by digging into the mound.

■ Managing the Asparagus Patch

As the season progresses and harvest ends, the asparagus patch turns into a ferny hedge by mid-summer. Weeding can be a challenge during this time but it is imperative to keep weeds to a minimum in this perennial crop. Once the asparagus ferns turn yellow and die in the fall, the ferns should be either mowed or removed from the patch in fall. Some gardeners at northern latitudes tend to leave their asparagus ferns in place over winter in order to catch snow thereby providing extra frost protection to the asparagus crowns. This is not recommended if you have noticed asparagus beetles in your patch; most notably, the common asparagus beetle (*Crioceris asparagi*) and the spotted asparagus beetle, (*Crioceris duodecimpunctata*).



Asparagus ferns turn yellow and die in the fall

■ Insects

The common asparagus beetle (*Crioceris asparagi*) and the spotted asparagus beetle, (*Crioceris duodecimpunctata*) are pests of asparagus. As the name suggests, the common asparagus beetle is found more often in the Prairie asparagus patch and is also more destructive than the spotted asparagus beetle. Both beetles are approximately 0.5cm long with oval shaped bodies and medium length antennae. Both beetle types have slug-like larvae with visible heads and legs. Common asparagus beetle larvae are light gray with a black head whereas spotted asparagus beetle larvae are orange.

The common asparagus beetle is bluish black in color with 6 cream colored spots on its back. The spotted asparagus beetle is reddish-orange with 12 black spots on its back. The spotted asparagus beetle should not be confused with beneficial lady bugs which are very similar in colour but are more rounded and dome shaped than the spotted asparagus beetle. The spotted asparagus beetle prefers to

eat asparagus berries and rarely causes damage to leaves and ferns.

Common asparagus beetle adults overwinter in sheltered locations, including the hollow stems of old asparagus plants. Adults will appear in the soil just as the spears are emerging from the soil in spring. These early emerging common asparagus beetles can feed on spears early in the season, causing browning and scarring on the spears as well as spears that bend over in a shepherd's crook appearance shortly after emergence.

The adult beetles lay numerous dark brown, oval-shaped eggs in rows on spears or ferns. Within one week, the eggs hatch and larvae start feeding on ferns. After about two weeks, the larvae fall to the ground and pupate in the soil. About one week later, the adults emerge to start another generation and feed on ferns for the remainder of the growing season. Excessive feeding on the ferns can result in weakened crowns which will be more susceptible to Fusarium crown rot.

The best method of control for common asparagus beetle is to employ good sanitation practices: remove all dead ferns from the patch late in fall. Hand pick common asparagus beetles in the patch when possible and dump these pests into a pail of soapy water. Biological controls like lady bugs, *Tetrastichus asparagi* (a tiny metallic green wasp) and other predators should be encouraged. Avoid using toxic chemicals as these chemical controls will also kill any beneficial insects in the garden.



Asparagus beetle (*Crioceris asparagi*)