

RGA Gardening Fact Sheet #9: Weeds

Gardening enhances our personal and community space. All plants, from trees to flowers, beautify our living area, provide edible food and offer environmental benefits ranging from the oxygen we breathe to creating summer shade to cool our homes. By growing plants, we better appreciate our natural environment and the ecological relationships between soil, water and climate. Gardening helps the young to the young-at-heart understand the responsible use and protection of our natural environment, as well as the impact we have on the “big picture” of environmental stewardship.

With support from the Conexus Credit Union's (CCU) Community Investment Program, the Regina Garden Associates (RGA) at the Regina Floral Conservatory aim to promote environmental stewardship through a series of gardening fact sheets, teaching appreciation of growing plants and basic gardening practices to the general public. Visit the Regina Floral Conservatory often and continue learning about gardening through our fact sheets.



Defining a Weed and Management

Just what is a weed? Merriam Webster dictionary defines as “a plant that is not valued where it is growing and is usually of vigorous growth”. The Weed Control Act, 2010 regulates the control or management of weeds in the Province of Saskatchewan. It categories weeds into prohibited, noxious and nuisance.

Weeds may be classified as native or introduced and their growth can be annual, biennial or perennial. A weed's characteristic of vigorous growth leads to plant competition for food, water and light. Weed growth is generally perpetuated by high seed production and/or extensive vegetative reproduction through root rhizomes or other plant parts. Weed seed can be long-lived and forms part of the soil's natural seed bank. When soil is disturbed by tillage or subject to environmental stresses, weed seeds are an indicator as they are often the first to germinate on bare ground and damaged areas.

In the garden and lawn, homeowners typically use weed control or management to reduce plant competition and to improve the aesthetic look. Options for weed management range from synthetic chemical herbicides to hand-picking. Herbicides are regulated for sale in Canada by the Health Canada Pest Management Regulatory Agency (PMRA). Since 2000, PMRA is re-evaluating lawn and garden care pesticides, including herbicides. Using the most current science, the process assesses the human and environmental health risk from specific chemicals. Results lead to retention or removal of the chemical from herbicides for sale. Further, Canadian provinces and urban municipalities are considering, and in certain cases, enacting legislation and bylaws to reduce the use of herbicides for non-essential or cosmetic use, including gardens and lawns. For certain, home gardeners are seeking weed management that will be sustainable, but effective without risk to their health or the environment.

This garden fact sheet introduces the common weeds of Saskatchewan's lawns and gardens, how to apply integrated pest management techniques, and offers options to reduce the use of herbicides.

Choosing Integrated Pest Management

Adopted by horticulture, integrated pest management or IPM is a strategy to plan and manage a variety of methods to reduce pest populations to an acceptable level.

A pest can be animal, plant or other organism. For managing weeds, IPM focuses on (1) prevention (2) regular monitoring, (3) identification of the weed and its biology, (4) assessment of the need, (5) use of a combination of management methods and (6) evaluation and adjustment in gardening practices. The methods focus on prevention



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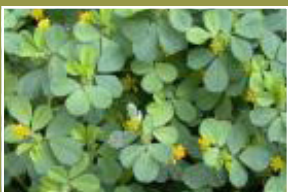


Canada Thistle

Choosing Integrated Pest Management (cont.)

and where materials are used, they are selected and applied to be least harmful to humans and the environment.






Prevention is first priority and examples include the maintenance of a healthy lawn through appropriate watering, fertilization, over-seeding and aeration. Regular monitoring of the garden and lawn is essential throughout the growing season. Weeds should be identified and considered relative to their biology – are they an annual or perennial? As well as how they reproduce from seed or vegetative rhizome. When we understand the plant, then it is reasonable to consider whether there is a practical need to act. If yes, what are the options for managing? Acting promptly is essential followed by evaluating the results and then adjusting how we garden in the future.

Common Saskatchewan Lawn & Garden Weeds Annuals

Genus / Species	Common Name	Photo	Biology	Management Options
Amaranthus blitoides	Prostrate Pigweed		Prostrate pigweed reproduces by seed. Spring seed germination is most common on bare ground with warm moist soils. It is most common in the garden. Growth habit is a low ground spreading weed.	Remove seedlings prior to flowering and seed set. Use hand-picking, tillage and hoeing. Spray with a horticultural vinegar.
Capsella bursa-pastoris	Shepherd's Purse		Shepherd's purse reproduces by seed. Fall germination is followed by over-winter dormancy of seedlings and mature growth in the following spring. It is most common in the garden.	Remove seedlings in fall. Use hand-picking, tillage and hoeing. Mature plants should be removed before flowering and seed set.
Chenopodium album	Lamb's-Quarters		Lamb's quarters reproduces by seed. Spring seed germination occurs on bare ground. It is most common in the garden.	Remove before flowering and seed set. Mowing, hand-picking, tillage and hoeing are effective to control. Spray seedlings with a horticultural vinegar.
Medicago lupulina	Black Medic		Black medic reproduces by seed. Growth habit has extensive ground stems. It grows both in lawns and gardens.	Maintain a healthy lawn and remove complete plant in garden and lawn. Hoe, hand-pick and till to remove. Mowing is ineffective.
Polygonum aviculare	Prostrate Knotweed		Prostrate knotweed reproduces by seeds. Germination is typically on hard-packed surfaces in the garden and lawn.	Maintain a healthy lawn and aerate. In the garden, hoe, hand-pick or till to remove prior to flowering and seed set.
Senecio vulgaris	Common Groundsel		Common groundsel reproduces by seed. It has a shallow roots system and is less competitive with other plants. These characteristics help managing this weed. It grows primarily in gardens and occasionally in lawns.	Remove before flowering and seed set. Hoe or hand-pick weeds. Fall tilling will reduce seed germination.

Genus / Species	Common Name	Photo	Biology	Management Options
Stellaria media	Common Chickweed		Common chickweed reproduces by seeds and by vegetative stems. Chickweed is more common in gardens. It prefers shaded moist soils.	Remove before flowering and seed set. Hoe, hand-pick or till weeds ensuring removal of all stems.
Thlaspi arvense	Stinkweed		Stinkweed reproduces by seed. It grows in gardens and seeds germinate throughout the growing season.	Hoe, hand-pick or till. Remove before flower and seed set. Fall till to kill seedlings.

Common Saskatchewan Lawn & Garden Weeds Perennials

Genus / Species	Common Name	Photo	Biology	Management Options
Campanula rapunculoides	Creeping Bellflower		Creeping Bellflower reproduces by seed and by vegetative roots. Creeping Bellflower grows in both gardens and lawns.	In gardens, dig out entire plant including roots. Maintain a healthy lawn to reduce potential for Creeping Bellflower seed germination. Horticultural vinegar will kill top growth.
Cirsium arvense (Noxious Weed)	Canada Thistle		Canada Thistle reproduces by seed and vegetative by extensive horizontal root rhizomes which grow rapidly and propagate colonies of seedlings. Removal of mature root rhizomes is very difficult. Canada Thistle grows in lawns and gardens.	Ground cover plantings and mulch in the garden will reduce seed germination and deter seedlings as they have low tolerance to shade. Seedlings may be picked, hoed or tilled. Frequent mowing of top growth of mature plants will progressively weaken roots and kill the plants.
Elytrigia repens (Nuisance Weed)	Quackgrass		Quackgrass reproduces by seed and primarily by vegetative rhizome roots. Root growth is horizontal and extensive. Mowing and tilling of rhizomes encourages spread. Preference is for cool, moist soil in lawn and garden. Quackgrass secretes a chemical that stunts growth of surrounding plants.	Maintain a healthy lawn to reduce seed germination. Mature plants in lawns and gardens will have to be dug out and to include the roots. In a garden, bare ground can be solarized with a dark tarp. Horticultural vinegar may be applied.
Plantago major	Plantain (Broadleaf Plantain)		Plantain reproduces by seed. It grows in both lawns and gardens.	Maintain a healthy lawn to reduce seed germination.. Hoeing, hand-picking and pilling in the garden should occur before plants flower and set seed.
Taraxicum officinale (Nuisance Weed)	Dandelion		Dandelion reproduces by seed and from buds on tap roots. It grows in lawns and gardens.	Gardens with mulch and ground cover will reduce seed germination. Removal of mature tap roots is a must before picking or hoeing. Corn gluten meal prevents seedling germination. Horticultural vinegar kills seedlings and tops of mature weed.



Options to Manage Weeds

Reduce soil disturbance to avoid exposing the soil's seed bank for germination. In the vegetable garden, this means deep tilling and amending of the soil in spring and late fall. For the remainder of the growing season use shallow soil disturbance by hoeing.

Create less favourable conditions for seed germination and seedling growth:

- For existing lawns, damaged and bare ground areas should be repaired with a mix of compost, loam soil and grass seed.
- Promote a healthy dense growth of lawn grass that will out-compete weed seed germination.
- In planting beds, cover bare soil with a dense mulch of 4 in (10 cm) depth and place on a heavy duty landscape fabric. For a natural look, use an organic mulch of spruce and periodically top up every few years. Mulch reduces the potential for growth of perennial weeds and for germination of airborne weed seed. The shading also reduces light needed for germination of annual weed seed.
- For vegetable gardens, use corn-starch-based biodegradable mulches sold as a thin roll which can be cut to cover the planting row and/or the between row area. Weed germination will be reduced while the microclimate for vegetable transplants is enhanced by warmer soil temperatures, particularly in the early portion of the growing season.
- For established lawns, apply corn gluten meal to reduce the potential of seed germination of dandelion, lamb's quarters, portulaca, redroot pigweed and plantain. It is not effective on established plants and does inhibit all plant seed germination.
- For new site preparation of lawns, planting beds and vegetable gardens, prior to planting or seeding, manage perennial weeds by a combination of multiple tillage along with solarization. On the latter, use a heavy duty black plastic or rubber tarp to cover the ground. The tarp excludes light and is effective in killing plants

Reduce and remove seedlings and mature plants:

- Hand-pick, hoe or till to remove seedlings and mature plants before flowering and seed set.
- Use safer herbicide alternatives and spot spray only as needed. Iron based chelate is an alternative to synthetic chemicals like 2-4 D. It is licensed under eco brand names, an alternative post-emergent broadleaf herbicide with lower toxicity but comparable results. Apply in lawns only and spot spray for black medic, common chickweed, Canada thistle, plantain and dandelion.
- Horticultural vinegar is effective in causing desiccation and death of seedlings.