



HORT MATTERS

OMAFRA Specialists in Horticulture and Specialty Crops.

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Minor use label expansion granted for Pristine fungicide for suppression and control of several diseases on lowbush blueberries, grapes, greenhouse lettuce and outdoor ornamentals

J. Chaput, Minor Use Coordinator

The Pest Management Regulatory Agency (PMRA) recently announced the approval of several minor use label expansions for **PRISTINE** WG Fungicide (boscalid + pyraclostrobin) for suppression of Septoria leaf spot on lowbush blueberries, control of anthracnose on grapes, control of gymnosporangium rust on outdoor ornamentals, control of apple scab on crabapple trees and suppression of powdery mildew on greenhouse lettuce in Canada. Pristine WG Fungicide was already labeled for use on a range of Canadian specialty and minor crops in the field and greenhouse and has a proven record of efficacy and safety.

These minor use submissions were sponsored by the Agriculture & Agri-Food Canada, Pest Management Centre (PMC) and provinces in response to minor use priorities identified by blueberry, grape, greenhouse lettuce and ornamental producers in Canada.

Disease management has been a high priority for fruit, vegetable and ornamental producers and the registration of Pristine fungicide will provide producers with an effective and useful disease management and resistance management tool.

The specifics of each new minor use label expansion are outlined on the updated Pristine fungicide label. Users should consult the complete label before using Pristine WG Fungicide.

Pristine fungicide should be used in an integrated disease management program and in rotation with other management strategies. Follow all other precautions and directions for use on the Pristine fungicide label.

These minor use submissions were sponsored by the PMC and provinces as a result of priorities established in consultation with producers. We also wish to thank the personnel of **BASF Canada Inc.** for their support of these registrations and the personnel of the **Pest Management Regulatory Agency** for evaluating and approving this important pest management tool.

For copies of the new minor use label for grapes contact Wendy McFadden-Smith, OMAFRA, Vineland (905) 562-3833, for GH lettuce contact Gillian Ferguson, OMAFRA, Harrow (519) 738-1258, for outdoor ornamentals, contact Jennifer Llewellyn, OMAFRA, Guelph (519) 824-4120 ext. 52671 or Jim Chaput, OMAFRA, Guelph (519) 826-3539 or visit <https://agro.basf.ca/basf/agsolutions/SelectRegion.htm> and www.engageagro.com

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OMAFRA STAFF working for you

Horticulture Technology

Mike Celetti	Pathologist	519-824-4120,x58910
Jim Chaput	Minor Use Coordinator	519-826-3539
Hannah Fraser	Entomologist	905-562-1674
Kristen Callow	Weed Management	519-674-1335
Christoph Kessel	Nutrition	519-824-4120, x52480
Vacant	Nutrient Management Planning Spec.	905-562-1170
Anne Verhallen	Soil Management Specialist	519-674-1614
Hugh Martin	Organic Crop Production	519-826-4587
Denise Beaton	Crop Protection Program Lead	519-826-6594
Jason Deveau	Application Technology Spec	519-426-8934

Horticulture Crops

Marg Appleby	IPM Systems Specialist	613-475-5850
Eugenia Banks	Potato Specialist	519-826-3678
Wendy McFadden-Smith	Tender Fruit & Grape IPM Spec.	905-562-3833
Jennifer DeEll	Fresh Market Quality	519-426-1408
Pam Fisher	Berry Crop Specialist	519-426-2238
Janice LeBoeuf	Vegetable Specialist	519-674-1699
Vacant	Vegetable Specialist	519-674-1616
Ken Slingerland	Tender Fruit & Grape Specialist	905-562-1639
Leslie Huffman	Apple Specialist	519-738-1256
Kathryn Carter	Pome Fruit IPM Specialist	519-426-4322
Marion Paibomesai	Vegetable Crop Specialist	519-826-4963

Greenhouse, Agroforestry & Specialty Crops

Jim Todd	Transition Crops Specialist	519-426-3823
Melanie Filotas	Specialty Crops IPM Specialist	519-426-4434
Sean Westerveld	Ginseng & Medicinal Herbs Spec.	519-426-4323
Evan Elford	New Crop Development Specialist	519-426-4509
Wayne Brown	Greenhouse Floriculture Specialist	905-562-4141, x179
Graeme Murphy	Greenhouse Floriculture IPM Spec.	905-562-4141, x106
Shalin Khosla	Greenhouse Vegetable Specialist	519-738-1257
Gillian Ferguson	Greenhouse Vegetable IPM Spec.	519-738-1258
Pam Charbonneau	Turfgrass Specialist	519-824-4120, x52597
Jennifer Llewellyn	Nursery Crops Specialist	519-824-4120, x52671
Todd Leuty	Agroforestry Specialist	519-826-3215
Mahendra Thimmanagari	Crop Bioproducts Specialist	519 826-4593

<http://www.ontario.ca/crops>

COMING EVENTS

2011 Grape IPM Spring Tune-up Sessions

April 4 - Rittenhouse Hall, OMAFRA, Vineland
1:00 - 5:30 pm

April 5 - Rittenhouse Hall, OMAFRA, Vineland
9:00 am - 1:30 pm

April 8 - Sanson Estate Winery, Amherstburg
1:00 - 5:30 pm

April 15 - Hillier Town Hall, Hillier 9:00 am - 1:30 pm
Call the AICC to register at 1-877-424-1300.

April 26, **Tender Fruit IPM Spring Tune-up**, Rittenhouse Hall, OMAFRA, Vineland Station, 9:00 am - 1:00 pm.
Call the AICC to register at 1-877-424-1300.

Subscribe on-line to receive notice by email when a new issue of Hort Matters is posted. All you need to do is enter your email address at <http://www.omafra.gov.on.ca/english/subscribe/index.html> and submit.

To receive a fax version of Hort Matters, send your fax number to: OMAFRA, Vineland Resource Centre, Box 8000, 4890 Victoria Avenue N, Vineland Station, ON L0R 2E0 or fax to 905-562-5933.

Edited by:

Hannah Fraser, Entomology Program Lead (Hort)

Prepared by:

Carolyn Prieur, Client Service Rep, Vineland Resource Centre

Suggestions?

We'd like to hear from you

Hort Matters
OMAFRA, Box 8000,
4890 Victoria Avenue N,
Vineland Station, ON L0R 2E0
Ph. 905-562-1674 Fax 905-562-5933

Email:

hannah.fraser@ontario.ca

OMAFRA IPM SCOUT TRAINING WORKSHOPS

Here are the updated IPM scout workshops available for those who will be scouting horticultural crops this year. Handouts/ CD are provided and lunch is on your own.

Workshop	Date & Time	Locations	OMAFRA Workshop Leader
Introduction to IPM	April 28 8:30 a.m. - 4:00 p.m.	1 Stone Road, Conf Rm 2, Guelph (P)	Margaret Appleby
Tomatoes & Peppers	April 29 8:45 a.m. - 2:00 p.m.	2nd Fl, Vet Tech Bldg, Rm 232 Ridgetown College	Janice LeBoeuf
Tender Fruit	May 2 9:00 a.m. - 12:00	Rittenhouse Hall auditorium OMAFRA Vineland	Wendy McFadden- Smith
Grapes	May 2 1:00–4:00 p.m.	Rittenhouse Hall auditorium OMAFRA Vineland	Wendy McFadden- Smith
Cole Crops	May 4 9:00 a.m. - 4:00 p.m.	OMAFRA Woodstock—large boardroom	Marion Paibomesai
Apples	May 3 9:00 a.m. - 4:00 p.m.	OMAFRA Simcoe auditorium (bring copy of OMAFRA Pub 360 & Pub 310)	Kathryn Carter
Lettuce, Celery, Onions, Carrots	May 6 9:00 a.m. - 4:00 p.m.	1 Stone Rd., Conf Rm 3, Guelph (P)	Marion Paibomesai
Strawberries and raspberries	May 11 9:00 a.m. - 3:30 p.m.	OMAFRA Simcoe auditorium Required: OMAFRA Publication 360 Recommended: OMAFRA publication #513	Pam Fisher
Ginseng Garden Walkers Workshop	May 18 7:00 pm - 9:00 p.m.	OMAFRA Simcoe auditorium Recommended: OMAFRA Pub 610	Sean Westerveld Melanie Filotas
Potatoes	May 30 9:00 a.m. - 3:00 p.m.	TBA Recommended: OMAFRA Pub 823, <i>Potato Field Guide</i>	Eugenia Banks
Sweet Corn, Peas and Beans	TBA	Recommended: OMAFRA Pub 363	Elaine Roddy
Vine Crops	TBA	Recommended: OMAFRA Pub 363	Elaine Roddy
Asparagus	TBA	Recommended: OMAFRA Pub 363	Elaine Roddy

(P) = have to pay for parking

To register contact the Brighton Resource Centre at 613-475-1630
or Agricultural Information Contact Centre at 1-877-424-1300.

For more information contact:

Margaret Appleby, IPM Systems Specialist, OMAFRA Brighton
613-475-5850

Email: margaret.appleby@ontario.ca

Monitoring for Spotted Wing Drosophila: getting started

Hannah Fraser, Denise Beaton, and Pam Fisher, OMAFRA

Spotted wing drosophila (SWD) is an invasive vinegar fly that has the potential to cause extensive damage to many fruit crops. The first detection of SWD in Ontario was in fall 2010 at a single residential site. We do not know how well this pest will survive the winter, or how quickly it will become established in Ontario. Based on experiences in western North America, we expect it will become a chronic pest to deal with in years to come. Early detection is the key to limiting economic damage.

We are coordinating a SWD monitoring program so we can learn more about the build-up and distribution of this pest in Ontario. We are placing traps at 50 sites with susceptible crops, representing the major fruit growing regions in the province. Results from the sample collections will be reported weekly in OMAFRA newsletters and bulletins.

In addition, we hope that all growers with susceptible crops will be alert to possible SWD outbreaks on their farms. The most susceptible crops include blueberry, raspberries, sweet cherries, although strawberries, grapes, and other fruit with soft flesh, are also at risk.

Growers and scouts can monitor for the presence of SWD adult flies by placing baited traps in susceptible crops and checking the contents once or twice a week. You can purchase pre-made traps or make your own.

Traps can be purchased from Contech Enterprises Inc. (website: www.contech-inc.com or phone: 1-800-767-8658). These traps have red markings on them that the SWD find more attractive.

Traps can also be made with small plastic containers (250-750 mL) with tight fitting lids. Drill 4 small holes (0.5) cm in diameter, in the sides of the containers, which will exclude larger insects but allow vinegar flies to enter.

There are several options for baiting the traps. Apple cider vinegar is very effective, easy to use and relatively inexpensive.

Traps should be placed in the crop canopy, at least 2 weeks before the crop begins to ripen. Traps should be checked and the bait replaced at least once a week. For information on making and using traps for SWD, see http://www.al.gov.bc.ca/cropprot/swd_monitoring.pdf

The next step is to identify SWD flies in your traps! Although the male flies have distinct spots on their wings, the females, which are more numerous and actually cause the damage, do not have spotted wings.

Information on SWD identification will be provided at the OMAFRA IPM scout training workshops in spring 2011. Samples can also be sent to the Pest Diagnostic Clinic in Guelph.

A half-day SWD Identification Training workshop will be held on April 27th at the University of Guelph - Pest Diagnostic Clinic in Guelph. Dr. Brad Sinclair from the Canadian Food Inspection Agency will be the training instructor. Space is limited, so please register with Denise Beaton at 519-826-6594 (or email denise.beaton@ontario.ca) by April 22nd. There is no registration fee, but there is an on-site parking fee.



Commercially available Contech Vinegar Fly traps may be used to monitor SWD, though homemade versions are also effective. Use only apple cider vinegar, which must be replaced weekly.

Photo credit: E. Beers, Washington State University

Damping-off, Wirestem and Bottom rot in Cole Crops

Michael Celetti, Plant Pathologist - Horticulture Crops Program Lead

One of the most common problems encountered in cole crop seedling transplant production this time of year is “damping-off” (Figure 1). Damping-off is a disease that results in the rotting, collapse and finally death of seedlings just before or soon after they emerge. It often starts out in a few plants in a flat of seedlings growing in the greenhouse but can spread quickly throughout the entire flat and into neighbouring flats.

The most common damping-off pathogen encountered in cole crop seedling production is *Rhizoctonia solani* which can also cause seed and root rot on many vegetable seedlings. Other pathogens such as *Pythium* and *Phytophthora* can cause severe damping-off particularly if the soil is kept too wet for a long period of time. Proper identification of the damping-off pathogen is critical since seed treatments that control damping-off caused by *R. solani* are different than those that control *Pythium* and *Phytophthora* (see below).

Seedlings that survive damping-off prior to transplanting may succumb to *R. solani* infection later in the field. Often, *R. solani* will rot young secondary roots and girdle the stems of recently transplanted cole crop seedlings just above or below the soil line, leaving only the stiff vascular tissue to hold up the seedling. The stiff vascular tissue looks and feels like a wire with the plastic insulation removed from which the disease gets its name "wirestem" (Figure 2). Infected plants appear stunted, wilted and blue or purple in colour. They are easily pulled out of the soil due to the absence of secondary roots that would normally anchor the seedling.

Bottom rot on cabbage, Chinese cabbage and other head forming cole crops is a disease also caused by *R. solani* (Figure 3). The symptoms are often noticed much later in the season. Leaves and petioles of head forming cole crops that come in contact with *R. solani* infested soil develop dark brown to grey oval lesions. Often the lesions will develop concentric rings as the pathogen colonizes the lower leaf petioles and leaves. Eventually the pathogen colonizes the entire head which appears to rot from the bottom up.



Figure 1. Damping-off of cole crop seedlings infected with *Rhizoctonia solani*.



Figure 2. Broccoli seedling with wirestem symptoms. Note the lack of secondary roots and the stiff wire-like main root.



Figure 3. Bottom rot symptoms appear as dark brown or grey lesion on lower leaves and petioles of head forming cole crops that come in contact with *Rhizoctonia* infested soil.

The following are a few tips to help cole crop growers avoid or reduce the risk damping-off, wirestem and bottom rot from becoming established in their greenhouse and field production.

Sanitation: Many outbreaks of damping-off and wirestem can be traced to poor sanitation practices in the greenhouse. *Rhizoctonia solani* produces persistent sclerotia that can stick to surfaces of seedling trays and benches. Power washing dirt off of surfaces and disinfect equipment, benches, and particularly seedling trays in the greenhouse with a 1-part bleach to 4-parts water solution before planting will significantly reduce the potential of the damping-off pathogens surviving on these surfaces and re-infecting.

Growing medium: Use sterilized or heat-treated growing mediums. Soil-borne pathogens that cause damping-off can occasional occur naturally in peat moss and soilless mixes

Seed treatment: When ordering seed, be sure to choose the correct seed treatment. Maxim 480 FS is a good seed treatment for reducing damping-off in seedling flats caused by *Rhizoctonia* but will not control damping-off caused by *Pythium* or *Phytophthora*. Apron XL LS seed treatment controls damping-off caused by *Pythium* and *Phytophthora* but not *Rhizoctonia*. Seed treatments usually provide protection for about a 4-6 weeks depending upon the environment conditions. As the seedling grows, the seed treatments either get diluted within the plant or are broken down rendering them less effective particularly if conditions that favour damping-off persist during the spring. However, by the time the seed treatments are no longer effective, plants are usually well established and less susceptible to damping-off.

Chemical Drench: Maestro and No-Damp are fungicides that can be applied as drenches to vegetable seedlings or soil to help control damping-off. Always read and follow the directions on fungicide labels carefully prior to mixing and applying.

Seeding Depth: Never plant seeds too deep and ensure that the right temperature is maintained for rapid seedling emergence and growth. Deep seeding causes stress on seedlings as they emerge through the soil and results in a greater area of susceptible stem tissue exposure below the soil line to the wirestem and damping off pathogens.

Fertilizer: Provide seedlings with the proper nutrients. Applying too much or too little fertilizer will affect the health of the seedlings and their ability to defend against disease.

Watering: Avoid over water seedlings and always allow the seedling plugs to dry out between watering. The longer the soil stays wet or saturated, the more likely water molds will infect and cause disease problems. However, allowing soil to dry too much between watering may stress the seedlings and encourage wirestem caused by *Rhizoctonia*.

Transplanting: Avoid transplant diseased seedlings into the field. Inspect all transplants growing in seedling trays for disease symptoms prior to planting. It is best to discard entire trays that have seedlings with symptoms if possible, since the pathogen could have spread to adjacent seedlings in the tray even though they may appear healthy at the time of transplanting.

Sweet Potato Industry Meeting

Ontario's sweet potato production has grown significantly over the last ten years, with over 1200 acres in 2010. Growers and other interested parties are invited to attend a Sweet Potato Industry Meeting on April 6 to learn about options for forming an industry association.

The meeting will take place at the Simcoe OMAFRA Resource Centre Auditorium, 1283 Blueline Rd on Wednesday April 6 at 2:30 pm. For those who cannot attend in person, a web-based conferencing system has been set up to connect to the meeting by computer. Connection information will be provided upon registration.

To register, call the Agricultural Information Contact Centre at 1-877-424-1300 or email ag.info.omafra@ontario.ca or for more information, contact Melanie Filotas at melanie.filotas@ontario.ca.

Site Selection for New Plantings

Leslie Huffman, Apple Specialist

Selecting the best site for your new orchard is a critical factor in the success of your planting. Just because there WAS an orchard in a field doesn't mean there SHOULD be an orchard there. So it's important to critically assess your site before proceeding. Collecting soil samples, topographical maps, drainage maps, weather and wind information are an important first step. Also a long-term cropping history of the site will be helpful.

Excellent water drainage is important for apples and especially for certain rootstocks. Apple trees do not like "wet feet", especially during the growing season. Many sites should be systematically tiled before planting, although some may be improved by installing an additional tile line between existing tiles. Another consideration is to plan the tile lines to avoid planting trees or support posts directly over them.

Soil type and fertility is another consideration. Sandier soils often have better drainage, but may not have good water-holding capacity. Soils with high levels of organic matter are preferred, both due to natural fertility and to improved water-holding capacity. Your soil test will indicate nutrient deficiencies and soil pH issues that should be corrected before planting. Most new planting systems use tall trees as a natural way to manage growth, and fertile soil with good water holding capacity will make it easier to achieve tree height in less time.

Availability of water for irrigation or spraying may be a consideration for some orchards. Many new orchards will be trickle irrigation or fertigated so a reliable source of quality water nearby is important.

Air drainage is also important, to avoid cold pockets during winter freezes, and frost pockets during bloom or at harvest. Windbreaks and neighbouring forests can create problems with cold, although these features may offer some benefits with wind abatement. Recent losses due to spring frosts has encouraged some Ontario growers to invest in wind machines, so it may be prudent to consider where machines could be located to be effective if needed.

Wind can also be a concern for orchards. Strong winds can hamper good spray coverage, which can be critical during wetting periods in the spring. Strong winds may also hamper bee activity during pollination time. Mild winds are useful as apples enlarge to promote quick drying and less russetting. But wind and soil erosion during this period may increase skin russetting.

Consider whether it will be practical to align rows north-south. The orientation of "hedge-rows" of trees is important to align N-S to capture the most sunlight and allow quality fruit to be produced throughout the canopy.

Previous orchard sites should be assessed for the risk of Apple Replant Disease (ARD). Replant issues can rob 30-50% of an orchard's profitability, but is not always present, and is difficult to predict. Sampling for nematodes, presence of fungal diseases, and soil fertility and pH is important to start. Analyze issues in the previous orchard as a start. The longer a site is left without apples, the risk of replant issues will be reduced.

Take a hard look at this short list of potential problems, and decide what can be done to correct things before proceeding with a new orchard.

Minor use label expansion granted for Acramite 50WS miticide for control of mites on tree nuts, Crop Group 14

The Pest Management Regulatory Agency (PMRA) recently announced the approval of a minor use label expansion for **ACRAMITE** 50WS miticide (bifenazate) for control of 2-spotted spider mite (TSSM) and red mite on tree nuts, crop group 14 in Canada. Crop group 14 includes beechnuts, almonds, butternuts, chestnuts, hazelnuts [filberts], hickory nuts, pecans and walnuts. Acramite 50WS was already labeled for management of mites on apples, caneberries and grapes in Canada.

This minor use submission was sponsored by the minor use office of OMAFRA in 2009 in response to minor use priorities identified by tree nut producers and extension personnel. This is the first minor use registration in Canada for these pests on tree nuts.

Access to new mite management tools is a high priority for tree nut producers and the label expansion of Acramite 50WS will provide tree nut producers with an effective mite management and resistance management tool.

Acramite 50WS miticide can be applied at a rate of 568 grams product per ha (10 pouches per 4 ha) for TSSM and at a rate of 851 grams product per ha (15 pouches per 4 ha) for red mite in spray volume of 1000 L per ha as soon as mites appear. A maximum of 1 application per season is permitted. The pre-harvest interval for tree nuts is 14 days.

Acramite 50WS miticide should be used in an integrated pest management program and in rotation with other management strategies. Follow all other precautions and directions for use on the Acramite 50WS label.

This minor use submission was sponsored by the minor use office of OMAFRA as a result of priorities established in consultation with producers. We also wish to thank the personnel of **Chemtura Agrosolutions** for their support of this registration and the personnel of the **Pest** Management Regulatory Agency for evaluating and approving this important pest management tool.

For copies of the new minor use label contact Melanie Filotas, OMAFRA, Simcoe (519) 426-4434, Hannah Fraser, OMAFRA, Vineland (905) 562-1674 or visit <http://www.engageagro.com> and/or <http://www.chemturaagrosolutions.com>

Minor use label expansion granted for Fulfill 50 WG insecticide for control of aphids on highbush blueberries and leafy vegetables, Crop Group 4 in Canada

The Pest Management Regulatory Agency (PMRA) recently announced the approval of a minor use label expansion for **FULFILL** 50 WG insecticide (pymetrozine) for control of aphids on highbush blueberries and leafy vegetables, crop group 4 in Canada. Crop group 4, leafy vegetables includes crops such as celery, lettuce, parsley, spinach, rhubarb, edible amaranth, arugula, chervil, edible chrysanthemum, cress, endive, fennel, purslane, radicchio and swiss chard. Fulfill 50 WG insecticide was already fully labeled for use on potatoes in Canada and approved under emergency use for highbush blueberries in B. C. and has a proven record of providing producers with effective aphid management.

The minor use project for highbush blueberries sponsored by Agriculture & Agri-Food Canada, Pest Management Centre (AAFC-PMC) was submitted in 2004 in response to minor use priorities identified by producers and extension personnel in Canada. The minor use project for leafy vegetables was sponsored by the Quebec Horticultural Council (CQH) in 2009.

Management of aphids on highbush blueberries and leafy vegetables have been high priority items for a number of years and the registration of Fulfill 50 WG insecticide will provide highbush blueberry and leafy vegetable producers with an effective and useful aphid management tool.

For **highbush blueberries** Fulfill insecticide can be applied at a rate of 193 g product per hectare in a spray volume of 500 – 1,000 L water per hectare. A maximum of 2 applications per crop per year is permitted with the 1st application pre-bloom and the 2nd application post harvest. The use of a surfactant (as specified on the label) is also recommended. The pre-harvest interval is 85 days.

For **leafy** vegetables, crop group 4 Fulfill insecticide can be applied at a rate of 193 g product per hectare in a minimum spray volume of 100 L water per hectare. Apply when aphids 1st appear and do not apply more than twice. Allow at least 7 days

between applications and follow the pre-harvest interval of 14 days. The use of a surfactant (as specified on the label) is also recommended.

Fulfill insecticide should be used in an integrated pest management program and in rotation with other management strategies. Follow all other precautions and directions for use on the Fulfill insecticide label.

We wish to thank the **AAFC-PMC and CQH** for sponsoring these respective submissions. We also wish to thank the personnel of **Syngenta Crop Protection Canada Inc.** for their support of this registration and the personnel of the **Pest Management Regulatory Agency** for evaluating and approving this important pest management tool.

For a copy of the new minor use label for blueberries contact Pam Fisher, OMAFRA, Simcoe, (519) 426-2238 or Kevin Schooley, OBG, Kemptville (613) 258-4587. For a copy of the new label for leafy vegetables, crop group 4 contact Marion Paibomesai, OMAFRA, Guelph (519) 826-4963, Jim Chaput, OMAFRA, Guelph (519) 826-3539 or visit <http://www.syngenta.ca>

Weed Series: Field Bindweed

Kristen Callow, Weed Management Specialist (Hort)

Scientific Name: *Convolvulus arvensis*

Family: Pink Family (Caryophyllaceae)

General Description: [Perennial](#) reproducing by seed and by an underground root system.

Habitat: Field bindweed occurs throughout Ontario in cultivated fields, gardens, lawns, roadsides, and waste places.

Seedlings

- Cotyledons opposite, round and notched at the end

Stems

- Stems slender
- Smooth or pubescent or very finely hairy
- Usually twining or curling
- Prostrate or climbing on any nearby object

Leaves

- Leaves are [alternate](#) (1 per node)
- With short or long stalks
- Variable in form but commonly arrowhead-shaped with 2 [basal](#) lobes and smooth margins
- Sometimes long and narrow, or broader and nearly round except for the 2 basal lobes
- Stalkless

Flowers and Fruit

- Flowers on long stalks from axils of leaves, always with a pair of small, narrow, green bracts on the flower [stalk](#) some distance below the flower
- Flowers have 5 small green sepals and a white to pinkish funnel-shaped [corolla](#) 2-2.5cm (1 in.) in diameter when fully opened
- Seedpods are roundish, about 5mm long containing 1 to 4 seeds each of which is about 3mm long, pear-shaped and 3-angled with 1 side rounded and with tiny grayish bumps
- Flowers from mid-June until autumn

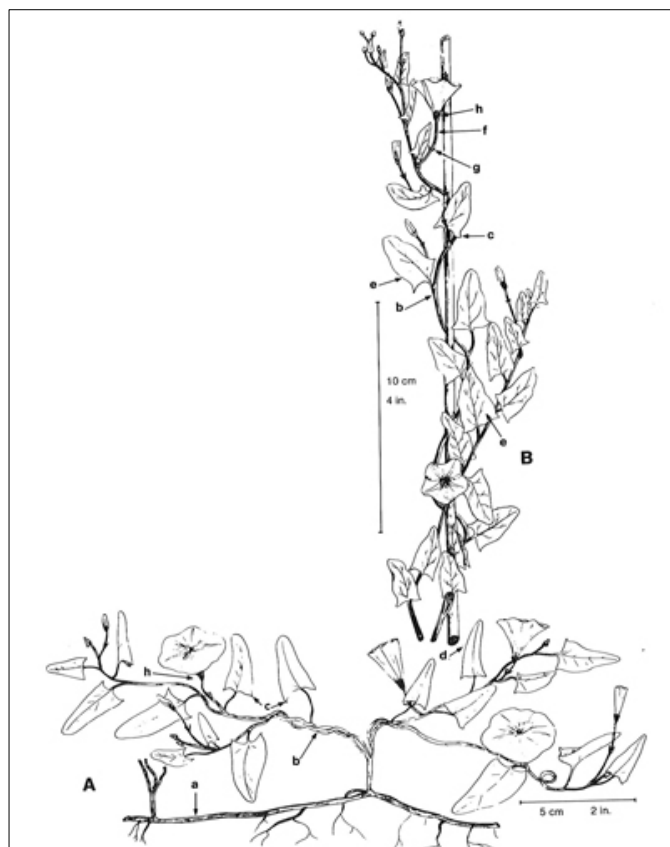


Figure 1: Field bindweed. A. Plant reproducing from horizontally spreading root. B. Portion of flowering stem twining around an erect support.

Roots and Underground Structures

- An extensively spreading and very persistent, whitish underground root system.

Often Confused With / Distinguishing Features

It is often confused with hedge bindweed and wild buckwheat. It is distinguished from hedge bindweed, which also has [perennial](#) roots, by its smaller leaves, flowers usually not over 2.5cm in diameter, and the 2 small bracts near the middle of the flower stalk, these tiny bracts never enclosing the base of the flower. It is distinguished from Wild buckwheat by being perennial with extensively creeping, white, cord-like, fleshy roots which produce new shoots and form dense patches; by its white or pinkish, funnel-shaped flowers with long stalks, and by the absence of an [ocrea](#) (membranous sheath) surrounding the stem at the base of each leafstalk.

Management Options

Controlling field or hedge bindweed is a challenge, because of its extensive, perennial root system. Because bindweed grows in patches, a systemic herbicide with glyphosate (eg. Roundup) can be effectively used as a spot spray. The key is to wait until bindweed shows first bloom (bud to full bloom), and use a 2% solution (2L Roundup in 100L water). Established patches usually take at least two applications in subsequent years for complete control.

Before herbicides, growers used two years of summer fallow with cultivation every 10 days to eradicate bindweed. This shows the reserves in its extensive root system.

Your best dollars will be spent each year in early summer to control new seedlings, and spot treat established patches in bloom.

References

<http://www.ontarioweeds.com/weed.php?w=CONAR>



Figure 2: Cotyledon and first true leaves of a field bindweed seedling.



Figure 3: Young seedling plant.



Figure 4: The arrowhead shaped leaf of field bindweed.



Figure 5: Mature flowering plant.



Figure 6: Flowers of field bindweed.



Figure 7: Field bindweed seeds.