WEED CONTROL

One of the biggest obstacles to the adoption of no-till is the perception that you grow weeds – not crops. Weeds aren't necessarily worse or more difficult, but the situation is different.

Understanding change in the soil seed bank, weed spectrum, and weed control practices is the key to effective weed control in a no-till system.

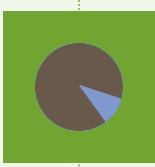
The **no-till seedbed** and **weed bank** differ from the conventional situation in these ways:

- weed seeds stay on or near the surface where they are subject to predation, extreme cold, desiccation and decomposition
- over time and with management, the number of annual weed seeds in the germination zone is reduced
- the minimal soil disturbance favours the local spreading of deep-rooted perennials and winter annuals, making them easier to control.

Weeds are different in no-till. Generally, the **weed spectrum** will change in these ways:

- in the first year of no-till, annuals and perennials can be a problem
- in Year 2, the number of annual weed seeds is reduced by natural and cultural means
- in Year 3, the perennials, biennials and winter annuals peak. But with burndown control (discussed later), their numbers are also reduced.

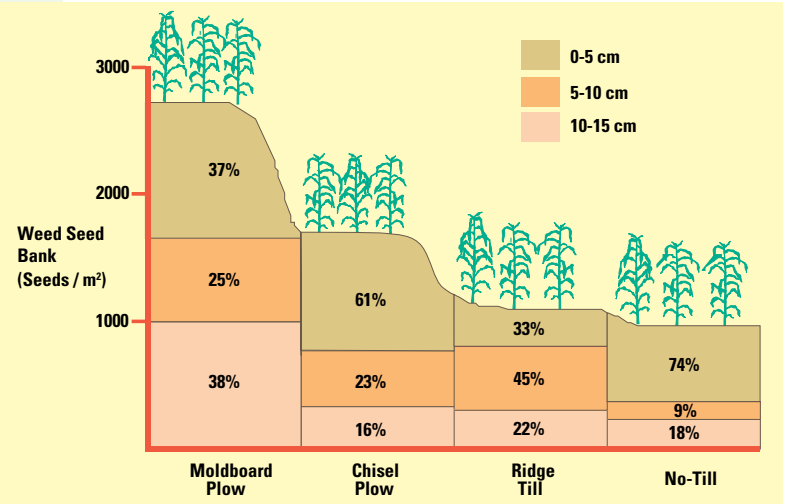
Dr. Clarence Swanton of the University of Guelph found that up to 90% of weed seeds on the soil surface in no-till systems was lost to insects, wildlife, and weather.



Weed Control

In no-till, good weed control gets better and poor weed control gets worse.

WEED CONTROL



Shown here are the effects of tillage methods on depth and population of weed seeds.

WEED CONTROL STRATEGIES

In no-till you lose two tools: the use of tillage and pre-plant incorporated herbicides. However, you are not spreading weeds with tillage.

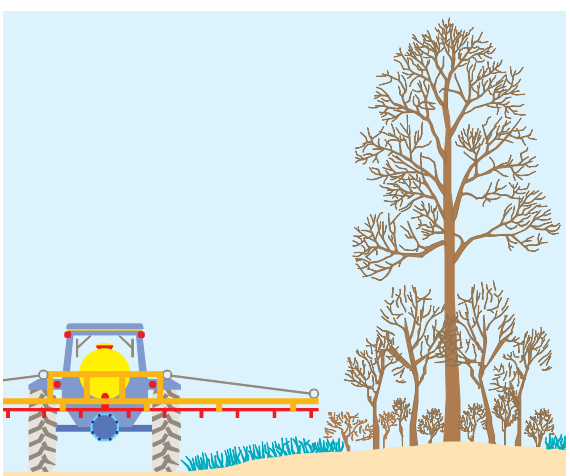
Other weed management tools remain, but the strategy changes.

PREVENTATIVE MEASURES

Use weed-free seed sources. Well-cleaned or certified seed is best.

Control weed sources at field perimeters, but be careful not to kill sod borders or wildlife habitat in fencerows.

Scout fields and keep records: help prevent local problems from spreading.



Preventing the invasion of weeds from treed fencerows is an important preventative measure. However, wildlife trees and shrubs should not be killed as well.

WEED CONTROL

CULTURAL METHODS

Rotate crops – changing crops each year will prevent many weeds from getting established, provide more competition, and allow herbicide rotation.

Manage residue – even distribution of residues at harvest will create an even cover over the field, reducing weed seedling establishment.

Plant cover crops – cover crops that are planted or grow (i.e., red clover) after harvest will crowd out weeds.

The three most important measures for weed control in no-till are burndown, burndown and burndown.

Jim Shaw, weed scientist and farmer, Kent County

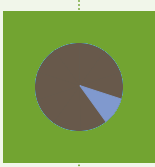
MECHANICAL METHODS

Cultivation – inter-row cultivation can be combined with sidedress nitrogen applications and chemical controls.

CHEMICAL METHODS

Pre- and post-emergence are still useful herbicide application techniques in no-till systems. Residual pre-emergence herbicides can be combined with burndown herbicides. Post-emergence treatments can target the weeds that are present. Refer to OMAFRA *Publication 75* and the label for proper timing of post-emergent herbicides. Remember: in no-till, almost all herbicide is applied post-emergent for some weeds, regardless of the crop stage.

Burndowns are the single most important chemical control method. They can be applied to emerged weeds before, during or after planting.



Weed Control

Burndown: a non-selective herbicide treatment to remove all existing vegetation.

PRINCIPLES AND ADVANTAGES OF BURNDOWN TREATMENTS

The primary objective of a burndown is to remove all existing living vegetation so that the soil warms up earlier and when the crop emerges, it has no competition. Weeds that emerge before the crop are the most competitive. They must be controlled by a burndown. Weeds that emerge later than the crop are not as competitive as those that emerge at the same time as the crop. Burndowns are applied:

- in the fall to control perennial weeds, red clover, perennial forages, volunteer cereals, etc.
- in the spring to kill existing vegetation before crop emergence (annual and winter annual weeds).

Choose the appropriate burndown and rate to match the weed spectrum present in the field.

Care must be taken to ensure that the burndown herbicide being applied does not drift onto neighbouring crops, especially horticultural crops. All hydraulic nozzles produce some fine droplets that can move off-target, even with a gentle breeze.

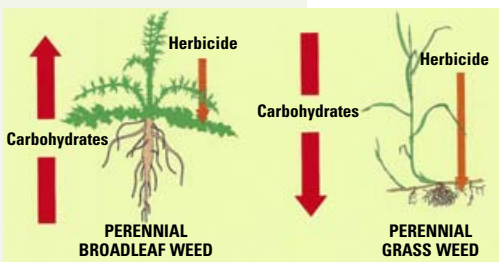
WEED CONTROL

A burndown herbicide must be broad spectrum, without leaving residual product in the soil that could cause problems for the crop. It also has to be cost-competitive. Ideally, the burndown product should be translocated to have a potent effect on perennial weeds. Common burndown products have minimal or negligible impact on ground water quality or wildlife.

Refer to the Conservation Tillage section of OMAFRA *Publication 75* for more information on burndown treatments.

PERENNIAL WEED CONTROL

Spring burndown treatments are most effective at controlling established perennial grasses. Established perennial broadleaf weeds are at the wrong stage of development, with the exception of dandelions. Stored sugars are being moved upwards from stored reserves to support new shoot growth. Translocated burndown chemicals work best when materials move in the opposite direction – shoot to roots. Broadleaves are more susceptible at bud to flowering, when plant sugars move downward to roots and other underground storage organs.



Spring burndown treatments are more effective on quackgrass and less effective on perennial broadleaf weeds than later season applications. That's because translocated burndown chemicals work best when materials move from shoot to roots.

For consistent results, the next best time to treat perennials is towards the end of the growing season (pre- or post-harvest). Perennials respond to day length and temperature fluctuations. These are the triggers that induce them to store energy for winter survival. The plant has produced seed and is finished growing. All photosynthates are moving towards the roots for overwintering. The weed will move herbicide into the root system and go into the winter in a weakened state. If the herbicide doesn't kill it, chances are the winter will.

ABOUT THIS TABLE

The next table is designed to help no-tillers control or suppress a number of weeds. The information was gathered from the label, researchers, industry personnel and farmer experience. Once you identify the weed that you wish to control, look in the table for which products may work. Then look in OMAFRA *Publication 75,* read the label, and talk to the company representative or a ministry crop advisor for rates, timing of application and other information regarding control of that weed.

The Ontario Ministry of Agriculture, Food and Rural Affairs and Agriculture and Agri-Food Canada do not offer any warranty or guarantee and they do not assume any liability for any crop loss, animal loss, personal injury and environmental hazard caused by the use of a pesticide mentioned in this publication.

WEED CONTROL

PROBLEM WEED CONTROL IN NO-TILL

WEEDS GERMINATING FROM SEED

EMERGED SEEDLINGS TO MATURE PLANTS

SPREADING ATRIPLEX (ANNUAL)

Key characteristics are:
- reproduces only by seed
- similar to lambsquarters
- leaves opposite each other near the base only.

To control in corn:
- choose from many soil-active pre-emergence broadleaf herbicides.

To control in soybeans:
- choose from many soil-active pre-emergence broadleaf herbicides.

Key characteristic is:
- unlike lambsquarters, each flower is enclosed between green, triangular to diamond-shaped bracts.

To control in corn:
- Roundup (pre-crop emergence)
- Pardner
- 2,4-D, Banvel, Kil-Mor, Shotgun.

To control in soybeans:
- Roundup (pre-crop emergence)
- Blazer + Basagran (on small seedlings).

COMMON CHICKWEED (ANNUAL OR WINTER ANNUAL)

Key characteristics are:
- reproduces by seed and leafy stems that root at the nodes to form dense patches
- leaf blades are oval with pointed tips.

To control in corn:
- Atrazine, Bladex (pre or post)
- Striker (pre or post)
- Fieldstar (pre or post).

To control in soybeans:
- Sencor, Lexone (pre-emergence)
- Afolan, Linuron, Lorox (pre-emergence)
- Afesin (pre-emergence)
- Pursuit (pre-emergence).

Stems of mature plants are prostrate, spreading or nearly erect, 5-50 cm (2-20") long.

Key characteristics are:
- small, white flowers throughout the growing season.

To control in corn:
- Roundup (burndown late fall or before crop emergence in spring)
- Bladex
- Laddok
- Atrazine + oil
- Marksman, Banvel, Clarity.

To control in soybeans:
- Roundup (burndown late fall or before crop emergence in spring)
- Sencor, Lexone (pre-crop emergence)
- Afolan, Linuron, Lorox+oil (pre-crop emergence).

To control in wheat:
- Refine Extra (post)
- Buctril M (post).

CANADA FLEABANE (WINTER ANNUAL OR ANNUAL)

Key characteristic is:
- reproduces by seed.

To control in corn:
- choose from many soil-active pre-emergence broadleaf herbicides.

To control in soybeans:
- Broadstrike Dual
- choose from many soil-active pre-emergence broadleaf herbicides.

Note: Pursuit removes the main growing point, causing the plant to develop multiple stems from auxiliary buds.

Key characteristics are:
- stems of established plants are tall (1-1.8 m) and hairy with few branches
- flowers are yellow green, 3-5 mm wide and are found at the top of the stem.

To control in corn:
- Roundup (burndown before crop emergence)
- Touchdown (burndown before planting)
- Striker (post) • Fieldstar (post)
- post – Banvel, Kil-Mor, 2,4-D.

To control in soybeans:
- Roundup (burndown before crop emergence)
- Touchdown (burndown before planting).

To control in wheat:
- post – Buctril M, Kil-Mor, Banvel, 2,4-D.

WEED CONTROL

PROBLEM WEED CONTROL IN NO-TILL, cont'd.

WEEDS GERMINATING FROM SEED	EMERGED SEEDLINGS TO MATURE PLANTS

PROSTRATE AND STRIATED KNOTWEED (ANNUAL)

Key characteristics are:
- reproduces from seed only
- leaves are alternate, broad in middle and narrow at both ends
- stems are thin, wiry, prostrate, up to 1 m long.

To control in corn:
- choose from many soil-active pre-emergence broadleaf herbicides
- Bladex.

To control in soybeans:
- choose from many soil-active pre-emergence broadleaf herbicides.

Note: Harder to control once plant is greater than 8-10 cm in diameter.

Key characteristics are:
- forms a deep tap root
- small flowers found where leaf joins stem.

To control in corn:
- Roundup (burndown before crop emergence)
- Touchdown (burndown before planting)
- Marksman (post) • Laddok (post)
- Banvel (post) • Atrazine (post)
- Bladex (post).

To control in soybeans:
- Roundup (burndown before crop emergence)
- Touchdown (burndown before planting)
- Blazer (post)
- Blazer+Basagran (post)
- Basagran (post).

PRICKLY LETTUCE (ANNUAL, WINTER ANNUAL OR BIENNIAL)

Note: A large percentage of the population is naturally resistant to Pursuit.

Key characteristics are:
- reproduces from seed only
- variable-shaped leaves have deep lobes that curve backwards and have spiny midribs.

To control in corn:
- choose from many soil-active pre-emergence broadleaf herbicides.

To control in soybeans:
- choose from many soil-active pre-emergence broadleaf herbicides.

Key characteristics are:
- stems are erect and tall 1.5 m (5')
- fine tufty yellow flowers from June to late fall.

To control in corn:
- Roundup (burndown before crop emergence)
- Touchdown (burndown before planting)
- Marksman (post)
- post – Atrazine, Laddock
- post – 2,4-D, Banvel, Kil-Mor.

To control in soybeans:
- Roundup (burndown before crop emergence) • Touchdown (burndown before planting)
- Blazer + Basagran (post).

FIELD VIOLET (ANNUAL)

Key characteristics are:
- reproduces only from seed
- leaves of young plants are very small with long stalks, rounded blades, and a few shallow teeth.

Key characteristics are:
- stems erect, short or multi-branches, 30 cm (12")
- white and yellow flowers on long thin stalks found from early May to autumn.

To control in corn:
- post – Banvel, Clarity, Marksman.

To control in soybeans:
- Blazer (post).

WEED CONTROL

PROBLEM WEED CONTROL IN NO-TILL, cont'd.

WEEDS GERMINATING FROM SEED

EMERGED SEEDLINGS TO MATURE PLANTS

FIELD BINDWEED (PERENNIAL)

Key characteristics are:
- reproducing by seed and by extensively spreading whitish, underground roots
- arrowhead-shaped leaves
- slender, smooth stems that grow prostrate or vine-like.

Key characteristics are:
- flowers on long stalks, white or pink, 2.5 cm (1") diameter, funnel-shaped.

To control in corn:
- Kil-Mor
- Banvel, Clarity
- Caliber, Cobutox, Embutox, Tropotox Plus
- Ultim
- Roundup (spot treatment, or post-harvest)
- Touchdown (spot treatment or post-harvest).

To control in soybeans:
- Roundup (spot treatment, pre-harvest, post-harvest)
- Touchdown (spot treatment or post-harvest)
- Blazer, Basagran (suppression).

To control in wheat:
- Roundup (pre-harvest, post-harvest)
- Touchdown (post-harvest)
- post harvest – Banvel, Clarity, Kil-Mor, Tropotox Plus, Caliber, Cobutox, Embutox, 2,4-D.

DANDELION (PERENNIAL)

Key characteristic is:
- reproduces only by seed.

To control in corn:
- Marksman
- Atrazine.

To control in soybeans:
- Sencor, Lexone
- Afolan, Linuron, Lorox
- Pursuit.

Farmer experience says that Roundup + Pursuit or Roundup followed by a post application of Pursuit + Basagran is effective.

Fall applications are generally more reliable than spring applications. The control of this weed in the spring is dependent on a burndown followed by a residual herbicide that has some activity on the weed.

Key characteristics are:
- bright yellow flowers
- white seed heads.

To control in corn:
- Kil-Mor • Ultim
- Marksman
- Roundup, Touchdown, Amitrol-T (burndown late fall or before crop emergence in spring).

To control in soybeans:
- Amitrol-T (burndown or post-harvest)
- Roundup (burndown late fall or before crop emergence in spring, post-harvest or pre-harvest)
- Touchdown (burndown in fall, or before planting or post-harvest).

To control in wheat:
- Amitrol-T (burndown before planting or post-harvest)
- Roundup (burndown before crop emergence, pre- or post-harvest)
- Touchdown (burndown before planting or post-harvest)
- Kil-Mor (spring-suppression)
- Spring (suppression)-Caliber, Cobutox, Embutox, Tropotox Plus
- 2,4-D (spring-suppression or post-harvest).

WEED CONTROL

PROBLEM WEED CONTROL IN NO-TILL, cont'd.

WEEDS GERMINATING FROM SEED	EMERGED SEEDLINGS TO MATURE PLANTS

DOGBANE (PERENNIAL)

Key characteristics are:
- spreads by seed and underground in rhizomes
- leaves are opposite, oblong and drooping.

To control in corn:
- choose from many soil-active pre-emergence broadleaf herbicides.

To control in soybeans:
- choose from many soil-active pre-emergence broadleaf herbicides.

Key characteristics are:
- stems are slender and smooth
- flowers are in bunched clusters.

To control in corn:
- Kil-Mor, Banvel – apply as late as possible (drop pipes)
- Roundup (spot treatment)
- Touchdown (spot treatment).

To control in soybeans:
- Roundup (pre-harvest, spot treatment or wick wiper)
- Amitrol-T (spot treatment or wick wiper)
- Touchdown (spot treatment or wick wiper).

GOLDENROD (PERENNIAL)

Key characteristic is:
- reproduces by seed and rhizomes.

This is a tough weed. Control will be improved with a burndown, followed by a residual herbicide that has some activity on the weed.

Key characteristics are:
- 20-200 cm high
- branching only in upper part.

To control in corn:
- high rates of Banvel (split application)
- Banvel + Phenoxy mixtures
- high rates of Amitrol-T, Roundup, Touchdown (spot treatment).

To control in soybeans:
- high rates of Amitrol-T (spot treatment)
- high rates of Roundup (spot treatment or pre-harvest)
- high rates of Touchdown (spot treatment).

To control in wheat:
- post-harvest Estaprop, Dichlorprop-D, Turboprop.

HORSETAIL (PERENNIAL)

Key characteristics are:
- young plants emerge from blackish rhizomes found up to 1 m (3 1/3') below the soil
- young shoots are light-coloured, hollow and jointed.

While horsetail tolerates most herbicides, farmers have had some success with Striker + Ultim.

Key characteristics are:
- shoots are green, slender, erect hollow stems with branches but no leaves
- resembles small pine tree.

To control in corn:
- Ultim • Striker • MCPA
- Elim.

To control in soybeans:
- Amitrol-T (high rate, burndown before crop emergence)
- Linuron + oil (high rate) + 28% N (burndown before crop emergence)
- Blazer (post).

WEED CONTROL

PROBLEM WEED CONTROL IN NO-TILL, cont'd.

WEEDS GERMINATING FROM SEED	EMERGED SEEDLINGS TO MATURE PLANTS

MILKWEED (PERENNIAL)

Key characteristics are:
- reproduces from seed or shoots emerging from undergound roots
- opposite leaves are tapered, oblong, and have pointed tips and smooth edges.

To control in corn:
- choose from many soil-active pre-emergence broadleaf herbicides.

To control in soybeans:
- controlled by many soil-active pre-emergence broadleaf herbicides.

NOTE: Pre-harvest Roundup is a good option in wheat.

Key characteristics are:
- tall (1-2 m), erect stems with whorled branches at top
- flowers are white to purplish
- seed pods are green and warty.

To control in corn:
- Ultim + Banvel, Ultim + Pardner
- Marksman • Pardner, Atrazine
- Banvel • Kil-Mor • Roundup (spot treatment)
- Touchdown (spot treatment).

To control in soybeans:
- Amitrol-T
- Roundup, Touchdown (wick wiper, spot treatment)
- Blazer, Blazer + Basagran (suppression).

YELLOW NUTSEDGE (PERENNIAL)

Key characteristics are:
- reproduces from seed and rhizomes
- leaves are shiny, grass-shaped.

To control in corn:
- early pre-emergence – Dual, Frontier.

To control in soybeans:
- early pre-emergence – Broadstrike Dual
- early pre-emergence – Dual, Frontier.

Key characteristic is:
- stems are triangular.

To control in corn:
- Laddok (post) • Basagran (post)
- Atrazine + oil (post).

To control in soybeans:
- Pursuit + Basagran (post)
- Pursuit (post)
- Basagran (post).

ORCHARD GRASS (PERENNIAL)

Key characteristic is:
- reproduces from seed or emerges from clumps.

To control in corn:
- many soil-active pre-emergence grass herbicides.

To control in soybeans:
- controlled by many soil-active pre-emergence grass herbicides.

Key characteristics are:
- stems are flat and 90-150 cm tall.

To control in corn:
- high rates of Roundup, Touchdown – fall application (best) or burndown before crop emergence.

To control in soybeans:
- high rates of Roundup, Touchdown – fall application (best) or burndown before crop emergence.

QUACKGRASS (PERENNIAL)

Key characteristics are:
- spreads by light-coloured underground stems that have hard, white, sharp-pointed tips and seeds
- leaves are flat, nearly smooth.

To control in corn:
- choose from many soil-active grass herbicides.

To control in soybeans:
- choose from many soil-active grass herbicides.

Key characteristics are:
- may form a green fluorescent spike
- stems are erect 30-120 cm (1-4 ft.) tall.

To control in corn:
- Roundup, Touchdown (burndown before crop emergence, spot treatment or post-harvest)
- post – Ultim, Elim EP.

To control in soybeans:
- Assure • Venture • Select
- Roundup (burndown before crop emergence, spot treatment, pre- or post-harvest)
- Touchdown (burndown before planting, spot treatment or post-harvest).

WEED CONTROL

PROBLEM WEED CONTROL IN NO-TILL, cont'd.

RYEGRASS (PERENNIAL)

WEEDS GERMINATING FROM SEED

Key characteristics are:
- grows as a bunch grass, not from rhizomes.

To control in corn:
- choose from many soil-active pre-emergence grass herbicides.

To control in soybeans:
- choose from many soil-active pre-emergence grass herbicides.

EMERGED SEEDLINGS TO MATURE PLANTS

Use the full rate of Roundup in the fall.

Key characteristics are:
- has stems and heads about the size of quackgrass
- only one fluorescent stalk.

To control in corn:
- Roundup, Touchdown (burndown before crop emergence, spot treatment or post-harvest).

To control in soybeans:
- Roundup (burndown before crop emergence, spot treatment, pre- or post-harvest)
- Touchdown (burndown before planting, spot treatment or post-harvest)
- post – Assure, Venture, Select.

CANADA THISTLE (PERENNIAL)

Key characteristics are:
- reproduces from seed and by horizontal roots, which produce new shoots, often forming dense patches
- leaves more or less lobed, spiny and alternate
- stems erect, 20-150 cm (1-5') high, branched, slender, smooth.

To control in corn:
- choose from many soil-active broadleaf herbicides.

To control in soybeans:
- choose from many soil-active broadleaf herbicides.

Note: This weed is controlled best in corn or wheat.

Key characteristics are:
- flower heads are numerous, purple or sometimes white.

To control in corn:
- post – Striker, Banvel/Clarity, Kil-Mor
- post – Tropotox Plus, Caliber, Computox, Embutox
- Roundup, Touchdown (spot treatment).

To control in soybeans:
- Roundup (burndown before crop emergence, spot treatment or pre-harvest)
- Touchdown (burndown before planting or spot treatment)
- Blazer • Amitrol-T (burndown before crop emergence)
- Basagran + Blazer • Basagran.

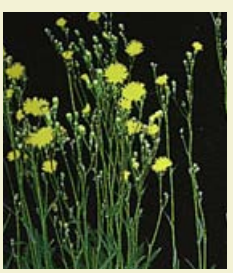
To control in wheat:
- Roundup (pre- and post-harvest)
- Touchdown (post-harvest)
- post-harvest Banvel, Clarity, Kil-Mor, Tropotox Plus, Caliber, Combutox, Embutox, 2,4-D.

SOW THISTLE (PERENNIAL)

Key characteristics are:
- reproduces from germinating seeds and from buds on underground roots
- leaves are similar to dandelion
- stems are erect – up to 1.5 m.

To control in corn:
- choose from many soil-active broadleaf herbicides.

To control in soybeans:
- choose from many soil-active broadleaf herbicides.



The burndown treatment will not give season-long control.

Key characteristics are:
- bright yellow flowers
- up to 4 cm across.

To control in corn:
- post (drop pipes) – Banvel, Clarity, 2,4-DB, 2,4-D
- Marksman (post, drop pipes)
- Roundup, Touchdown (spot treatment).

To control in soybeans:
- Roundup (spot treatment, pre-harvest)
- Touchdown (spot treatment) • Blazer.

To control in wheat:
- Roundup (pre-harvest and post-harvest)
- Touchdown (post-harvest)
- Banvel, Clarity, 2,4-DB, 2,4-D (post-harvest).

WEED CONTROL

PROBLEM WEED CONTROL IN NO-TILL, cont'd.

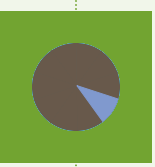
WEEDS GERMINATING FROM SEED	EMERGED SEEDLINGS TO MATURE PLANTS
WILD CARROT (BIENNIAL, SHORT-LIVED PERENNIAL)	
 **Key characteristics are:** • seedlings emerge throughout the season with two long cotyledons • first true leaf has three main divisions. **To control in corn:** • choose from many soil-active broadleaf herbicides • Striker • Fieldstar. **To control in soybeans:** • Broadstrike Dual • Pursuit.	 **Key characteristics are:** • second year stem erect 1 m • deeply penetrating tap root • large compound white flower. **To control in corn:** • Amitrol-T, high rates of Roundup, Touchdown (burndown, spot treatment). **To control in soybeans:** • Amitrol-T (burndown) • Roundup (burndown, spot treatment or pre-harvest) • Touchdown (burndown before planting or spot treatment).
WIRESTEM MUHLY (PERENNIAL)	
 **Key characteristics are:** • reproduces by seed or by short, scaly, many branched rhizomes • stems are slender, wiry up to 100 cm long. **To control in corn:** • choose from many soil-active grass herbicides. **To control in soybeans:** • choose from many soil-active grass herbicides.	 **Key characteristics are:** • stems are many branched. **To control in corn:** • high rates of Roundup, Touchdown (spot treatment, post-harvest). **To control in soybeans:** • Roundup (burndown before crop emergence, spot treatment or pre-harvest) • Touchdown (burndown before planting or spot treatment) • Fusilade • Venture • Select • Assure. **To control in wheat:** • Roundup (pre-harvest and post-harvest) • Touchdown (post-harvest).
WOODY SPECIES (BROADLEAF TREES AND SHRUBS)	
Key characteristics are: • seedling or sprout from root collar • varied-shaped leaves from numerous sources. **See the table Susceptibility of Woody Plants to Various Herbicides and Mixtures as Foliage Spray and the Brush Control section in OMAFRA *Publication 75*. Tillage will also help to control these.** **Note: Other glyphosate products include Glyfos, Laredo, Renegade and Wrangler. Check label for registrations.**	 **Woody plants must be leafed out for control with burndown.** **Key characteristics are:** • woody stems 3 cm-1 m tall. **To control in corn:** • Banvel, Clarity • Marksman • 2,4-D • Kil-Mor • Roundup (spot treatment). **To control in soybeans:** • Roundup (spot treatment).

A number of brand names of pesticides are given in this chart as a convenience to the grower. This is neither an endorsement of the product nor a suggestion that similar products are not effective. Many of the products listed above have various formulations available. Refer to the Herbicides Used in Ontario table in OMAFRA *Publication 75*.

WEED CONTROL

Weed pressure will be greatest in the first year of no-till. Extra diligence in weed control at this time can save a lot of grief in following years.

**Don Lobb,
Huron County**



Weed Control

TIPS

CROP COMPETITION

Select crops that provide greatest competition for weed infestations.

Crops grown in narrow rows shade the ground faster and compete better with weeds.

RESIDUE MANAGEMENT & WEED CONTROL

More residue cover means fewer annual weeds. The more aggressive the tillage, the more weed seeds are planted.

CROP ROTATION & WEED CONTROL

Select crops that provide greatest competition for weed infestations.
Select crops that allow chemical family rotation.

NUTRIENT MANAGEMENT & WEED CONTROL

Feed the crop, not the weeds. Weeds benefit from broadcast fertilizers.
Band or sidedress fertilizers on no-till crops.

MECHANICAL CONTROL

Inter-row cultivation or cultivation with band spraying can reduce the amount of post- and pre-emergence product used in no-till and ridge till.

CHEMICAL CONTROL

Remember, other than the lack of tillage and pre-plant incorporated options, most chemical options remain in no-till and ridge till. Residual pre-emergents can be combined with burndown. Not all products are registered for tank mixing: check the label. Post-emergents can be combined with cultivation or nitrogen sidedress applications.

Clean up problems before they start. Use spot treatments and field border applications to prevent the spreading of weeds.

Timing is everything:

- ▸ kill perennials in field and perimeters in the fall
- ▸ kill weeds when they're small
- ▸ kill sod and clover crops in fall.

Avoid spraying over natural habitat areas such as wood-lots, windbreaks, water-courses, wetlands and wildlife corridors.

WEED CONTROL

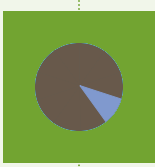
TIMING OF BURNDOWNS

		Advantages (+) or Disadvantages (–)
Before planting	+	no soil or residue to move
	+	weeds are dead at planting
	–	could be done too soon
During planting	+	saves time and money
	+	more weeds have emerged
	+	include a residual herbicide for one pass control
	–	could be too windy/dusty at planting
	–	planter may cover weeds with soil and residue
After planting	+	allows for flexibility in field operations
	–	crops could emerge before treatment
	–	drift could injure adjacent crops
	–	weeds may be covered with soil and residue

Broad spectrum burndowns with minimal residual effects are the best choice. Wait the specified time before planting after certain chemicals.

We time our spring burndown just before planting. By that time not only are the perennials established, but most of the weed seeds have already germinated.

Randy Molzan, Lambton County



SPRAYER ADJUSTMENTS

Add foam markers to the sprayer to assist with burndown application accuracy.

The sprayer should be able to work in rough conditions.

Select nozzles, water volumes, etc., to ensure good coverage of the weeds.

Foam markers help when applying burndown.

WEED CONTROL

ROW-CROP CULTIVATORS

High clearance residue cultivators may be used for no-till weed control and in the ridge till system:

- to build ridges
- for nitrogen sidedress applications
- to kill inter-row weeds.

Cautions and Considerations:

- if you disturb soil in valleys of sloping land, rills may form
- cultivation could disturb weed seed and macropores
- combine operations may be more difficult after cultivation in no-till (due to loose soil between rows, disturbed stones, etc.)
- post-emergence in-row herbicide treatments can be applied with the cultivator
- a narrow shank will move less soil.

Refer to *Field Crop Production* (Best Management Practices) for more information on row-crop cultivation.

High clearance residue cultivators may be used for no-till weed control and in the ridge till system.