

3. Berry crops

TABLE 3-1

Berry herbicide weed control ratings

NOTES: Ratings are subjective values based on best available information and give general comparisons based on use as described in this guide. Under unfavourable conditions (e.g., too dry, too wet, too cold, or poor application) the herbicides may not be as effective as indicated. Ratings may vary with weed and crop stage and with the timing and rates of the product(s) being used. Please refer to product label for more information on registered weed species, product uses and precautions.

LEGEND: N = No Control P = Poor Control F = Fair Control G = Good Control E = Excellent Control
 - = insufficient information available to make a rating. ✓ = can be used on this crop
 X = cannot be used on this crop

TRADE NAME	Crop Registrations				Grasses						Annual Broadleaves						
	blackberries	currants/gooseberries	highbush blueberries	raspberries	barnyard grass	crabgrass	fall panicum	foxtails	witchgrass	sandbur	chickweed, common	fleabane, Canada	lady's-thumb	lamb's-quarters	mustards	pigweeds	ragweed
SOIL-APPLIED BROADLEAF HERBICIDES																	
SANDEA	X	X	✓	X	N	N	N	N	N	-	G	E	G	G	G	G	G ¹
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES																	
ALION	✓	✓	✓	✓	E	E	E	E	E	E	-	E	E	E	E	F	-
AUTHORITY 480	✓	✓	✓	✓	-	G	-	-	-	-	-	G	-	G	-	G	P
CASORON G-4	✓	X	✓	✓	F	F	F	F	F	-	G	-	F	G	P	G	P
CHATEAU	X	X	✓	X	P	P	P	P	P	-	-	E	F	E	-	E	F
DEVRIKOL 2-XT	✓	X	✓	✓	G	E	G	G	G	G	F	-	F	G	P	G	F
DUAL II MAGNUM or KOMODO HERBICIDE	X	X	✓	X	E	E	G	E	E	-	F	-	P	F	P	G	P
PRINCEP NINE-T or SIMADEX or SIMAZINE 480	✓	X	✓	✓	G	G	F	G	G	-	G	-	E	E	E	E	G
SENCOR or SQUADRON	X	X	✓	✓	F	G	E	G	E	-	E	-	E	E	E	G	G
SINBAR WDG	X	X	✓	X	G	F	G	G	G	P	E	-	F	G	G	F	F

continued

¹ Registered for pre-emergent activity on common ragweed only.

² Weeds cannot be emerged at time of application to achieve this level of control.

³ Not all formulations are registered on all crops. See label for specific uses and rates.

⁴ Yellow foxtail will only be suppressed.

⁵ Top growth only, regrowth can be expected.

TABLE 3-1
Berry herbicide weed control ratings *continued*

TRADE NAME	Perennials																	
	bindweed, field	chickweed, mouse-eared	dandelion	goldenrod	grape, wild	ground-ivy (creeping charlie)	mallow	milkweed	nightshade, climbing	nutsedge	plantains	poison-ivy	quackgrass	sow-thistle	stinging nettle	thistle, Canada	vetches	virginia creeper
SOIL-APPLIED BROADLEAF HERBICIDES																		
SANDEA	F	-	-	-	-	-	G	-	-	F	G	-	-	-	-	-	-	-
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES																		
ALION	E	E	F	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AUTHORITY 480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CASORON G-4	F	F	F	-	P	F	-	-	-	F	F	P	F	F	-	F	F	-
CHATEAU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEVRIKOL 2-XT	-	-	P	-	-	-	-	P	-	P	P	P	P	P	-	P	P	-
DUAL II MAGNUM or KOMODO HERBICIDE	N	-	P	-	-	-	-	N	-	G	P	-	N	N	N	N	N	N
PRINCEP NINE-T or SIMADEX or SIMAZINE 480	P	-	P	-	-	-	-	N	-	P	-	-	F	P	-	P	N	-
SENCOR or SQUADRON	P	-	-	-	-	-	-	P	P	P	-	-	P	P	-	P	P	N
SINBAR WDG	F	G	F	-	-	-	-	F	-	F	G	-	F	P	-	F	P	-

continued

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Berry herbicide weed control ratings

LEGEND: **N** = No Control **P** = Poor Control **F** = Fair Control **G** = Good Control **E** = Excellent Control
 - = insufficient information available to make a rating. ✓ = can be used on this crop
 X = cannot be used on this crop

TRADE NAME	Crop Registrations				Grasses						Annual Broadleaves						
	blackberries	currant/gooseberries	highbush blueberries	raspberries	barnyard grass	crabgrass	fall panicum	foxtails	witchgrass	sandbur	chickweed, common	fleabane, Canada	lady's-thumb	lamb's-quarters	mustards	pigweeds	ragweed
POST-EMERGENCE GRASS HERBICIDES																	
POAST ULTRA	X	X	✓	✓	G	G	E	G	E	-	N	N	N	N	N	N	N
SELECT or ARROW or CENTURION	X	X	✓	✓	G	G	E	G	E	-	N	N	N	N	N	N	N
VENTURE L	✓	X	✓	✓	E	E	E	E	E	-	N	N	N	N	N	N	N
POST-EMERGENCE BROADLEAF HERBICIDES																	
AIM EC	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	G	G	G	-
BASAGRAN	X	X	✓	X	N	N	N	N	N	N	G	-	E	F	G	G	G
CALLISTO 480 SC or MESTER 480 SC HERBICIDE	X	X	✓	X	-	-	-	-	-	-	-	-	-	E	E	E	F
GOAL 2XL or BASKET 2XL	X	X	✓	X	P	P	P	P	P	-	F	-	G	G	E	E	G
SANDEA	X	X	✓	X	N	N	N	N	N	N	G ²	N	G ²	G ²	G	G	G
2,4-D ³	X	X	✓	✓	N	N	N	N	N	-	F	-	P	G	E	E	G
POST-EMERGENCE GRASS AND BROADLEAF HERBICIDES																	
GLYPHOSATE ³	✓	✓	✓	✓	E	E	E	E	E	-	E	E ³	E	E	E	E	E
IGNITE SN	X	X	✓	✓	E	E	E	E	E	-	E	G ⁵	E	E	G	E	E
PRISM	✓	X	✓	✓	E	G	E	G ⁴	E	-	-	-	F	F	E	E	P

¹ Registered for pre-emergent activity on common ragweed only.

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³ Not all formulations are registered on all crops. See label for specific uses and rates.

⁴ Yellow foxtail will only be suppressed.

⁵ Top growth only, regrowth can be expected.

TABLE 3-1
Berry herbicide weed control ratings

TRADE NAME	Perennials																	
	bindweed, field	chickweed, mouse-eared	dandelion	goldenrod	grape, wild	ground-ivy (creeping charlie)	mallow	milkweed	nightshade, climbing	nutsedge	plantains	poison-ivy	quackgrass	sow-thistle	stinging nettle	thistle, Canada	vetches	virginia creeper
POST-EMERGENCE GRASS HERBICIDES																		
POAST ULTRA	N	N	N	N	N	N	N	N	N	N	N	N	F	N	N	N	N	N
SELECT or ARROW or CENTURION	N	N	N	N	N	N	N	N	N	N	N	N	F	N	N	N	N	N
VENTURE L	N	N	N	N	N	N	N	N	N	N	N	N	F	N	N	N	N	N
POST-EMERGENCE BROADLEAF HERBICIDES																		
AIM EC	-	-	-	-	-	-	G	-	G	-	-	-	-	-	-	-	-	-
BASAGRAN	F	-	-	-	-	-	-	P	P	G ⁵	P	-	P	P	G ⁵	F	P	-
CALLISTO 480 SC or MESTER 480 SC HERBICIDE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GOAL 2XL or BASKET 2XL	P	-	G	-	-	-	-	P	-	P	-	-	P	P	-	P	N	-
SANDEA	F	-	-	-	-	-	-	G	F	-	E	G	-	-	-	-	-	-
2,4-D ³	P	P	G	P	P	P	P	P	-	P	G	-	P	F	-	G	P	-
POST-EMERGENCE GRASS AND BROADLEAF HERBICIDES																		
GLYPHOSATE ³	G	E	E ⁵	-	G	P	P	E	-	P	E	E	E	E	P	E	P ⁵	G ⁵
IGNITE SN	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	P	E	G ⁵	G ⁵	G ⁵	G ⁵
PRISM	-	-	-	-	-	-	-	-	-	-	-	-	F	-	-	-	-	-

TABLE 3-2

Strawberry herbicide weed control ratings

LEGEND: N = No Control **P** = Poor Control **F** = Fair Control **G** = Good Control **E** = Excellent Control
 - = insufficient information available to make a rating.

TRADE NAME	Grasses						Annual Broadleaves									
	barnyard grass	crabgrass	fall panicum	foxtails	witchgrass	volunteer grains	chickweed, common	fleabane, Canada	groundsel	lady's-thumb	lamb's-quarters	mustards	pigweeds	ragweed	snapdragon, dwarf	violet, field (field pansy)
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES																
AUTHORITY 480	-	G	-	-	-	-	-	G	G	-	G	-	G	P	-	-
BONANZA or TREFLAN or RIVAL	G	E	G	E	G	E	G	-	P	F	G	P	G	P	-	-
CHATEAU	P	P	P	P	P	-	-	E	-	F	E	-	E	F	G	-
DACTHAL W-75	F	G	G	G	G	G	G	-	N	N	G	P	F	N	F	F
DEVRINOL 2-XT	G	E	G	G	G	G	G	-	G	F	G	P	G	F	N	N
DUAL II MAGNUM or KOMODO HERBICIDE	E	E	E	E	E	-	-	-	-	P	F	P	G	P	-	-
GOAL 2XL or BASKET 2XL	P	P	P	P	P	P	-	-	G	G	E	E	E	G	G	E
PRINCEP NINE-T	G	G	F	G	G	-	G	-	-	E	E	E	E	G	-	-
REFLEX	N	N	N	N	N	N	-	-	-	E	F ²	E	E	E	-	-
SINBAR WDG	G	F	G	G	G	G	G ³	-	P	F ³	G ³	G ³	F ³	F ³	P	P ³
POST-EMERGENCE GRASS HERBICIDES																
POAST + MERGE	E	G	E	E	E	E	N	N	N	N	N	N	N	N	N	N
VENTURE L	E	E	E	E	E	E	N	N	N	N	N	N	N	N	N	N

continued

¹ Seedling bindweed control only. This product will not control established bindweeds.

² Suppression only.

³ Low rates and single applications may provide less control.

⁴ Not all formulations are registered on all crops. See label for specific uses and rates.

⁵ Top growth only; regrowth can be expected. Repeated treatments may provide control.

⁶ Spot treatment only.

TABLE 3-2
Strawberry herbicide weed control ratings *continued*

TRADE NAME	Perennials																
	bindweeds	brome grass	chickweed, mouse-eared	daisy, ox-eye	dandelion	ground-ivy (creeping-charlie)	mallow	milkweed	nutsedge	plantains	poison-ivy	quackgrass	sorrel, sheep	sow-thistle	thistle, Canada	toadflax, yellow	vetches
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES																	
AUTHORITY 480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BONANZA or TREFLAN or RIVAL	P	-	P	N	N	N	N	P	P	N	N	P	N	P	P	N	N
CHATEAU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DACTHAL W-75	-	-	G	N	F	-	-	-	N	N	-	N	-	-	-	-	-
DEVRIROL 2-XT	G ¹	G	-	-	P	-	-	P	P	P	-	P	N	P	P	-	N
DUAL II MAGNUM or KOMODO HERBICIDE	N	-	-	-	P	-	-	N	G	P	-	P	-	N	N	-	N
GOAL 2XL or BASKET 2XL	-	-	-	P	-	-	-	-	-	-	-	-	P	P	P	-	-
PRINCEP NINE-T	P	-	-	-	P	-	-	N	P	-	-	F	-	P	P	-	N
REFLEX	-	N	-	-	-	-	-	-	-	-	-	N	-	-	-	-	-
SINBAR WDG	-	G	-	P	P	-	-	F	F	G	-	F	G	P	F	P	P
POST-EMERGENCE GRASS HERBICIDES																	
POAST + MERGE	N	-	N	N	N	N	N	N	N	N	N	F	N	N	N	N	N
VENTURE L	N	E	N	N	N	N	N	N	N	N	N	F	N	N	N	N	N

continued

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POST-EMERGENCE BROADLEAF HERBICIDES																
AIM EC	-	-	-	-	-	-	-	-	G	-	G	G	G	-	-	-
2,4-D ¹	N	N	N	N	N	N	P	-	P	P	G	E	F	G	P	P
LONTREL XC or PYRALID HERBICIDE	N	N	N	N	N	N	N	-	G	-	P	-	P	E	-	-
REFLEX	N	N	N	N	N	N	-	-	-	E	F ²	E	E	E	-	-
POST-EMERGENCE GRASS AND BROADLEAF HERBICIDES																
BETAMIX	P	P	P	F	P	-	-	-	-	F	G	F	G	G	-	-
GLYPHOSATE ^{6,4}	E	E	E	E	E	E	E	E ⁴	G	E	G	E	E	G	-	-
IGNITE SN	E	E	E	E	E	-	E	G ⁵	E	E	G	E	E	E	-	-

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	bindweeds	brome grass	chickweed, mouse-eared	daisy, ox-eye	dandelion	ground-ivy (creeping-charlie)	mallow	milkweed	nutsedge	plantains	poison-ivy	quackgrass	sorrel, sheep	sow-thistle	thistle, Canada	toadflax, yellow	vetches
POST-EMERGENCE BROADLEAF HERBICIDES																	
AIM EC	-	-	-	-	-	-	-	G	-	-	-	-	-	-	-	-	-
2,4-D ⁴	P	N	P	P	G	P	N	N	N	G	-	N	G	F	G	-	P
LONTREL XC or PYRALID HERBICIDE	N	N	N	G	G	N	N	N	N	N	N	N	E	G ⁵	E	N	E
REFLEX	-	N	-	-	-	-	-	-	-	-	-	N	-	-	-	-	-
POST-EMERGENCE GRASS AND BROADLEAF HERBICIDES																	
BETAMIX	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P
GLYPHOSATE ^{6,4}	G	E	E	-	G	P	P	E	G	E	E	G	G	E	E	G	P ²
IGNITE SN	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	G ⁵	P	E	G ⁵	G ⁵	G ⁵	G ⁵

Cultural weed control in berry crops

A successful weed control program must integrate cultural and chemical weed control practices. Growers cannot depend entirely on chemical weed control in berry crops, since there is a limited spectrum of herbicides registered for these crops.

PERENNIAL WEED CONTROL

It is important to identify and control perennial weeds in the preplanting year. It is very difficult to control perennial weeds once a planting is established because of crop sensitivity to some herbicides and since it is not possible to clean cultivate in established berry crops. The following perennial weeds present serious problems in these crops: quackgrass, bindweed, vetch, wild grape, perennial nightshade, thistles, ground-ivy (creeping charlie) and burdock. In strawberries, sheep sorrel, toad flax and milkweed also present problems. Systemic herbicides such as glyphosate should be applied to perennial weeds in the preplanting year. Consult the product label and be sure to use the recommended rate for the weed in question. Apply the herbicide at the proper stage of growth of the weed, otherwise only temporary control will be achieved. Repeated cultivation of some perennial weeds such as bindweed will also provide control.

SITE PREPARATION

A green manure crop such as perennial ryegrass, Sudan grass, oilseed radish, tillage radish or mustards should be established in the preplanting year following or in conjunction with measures to control perennial weeds. This crop will provide competition to reduce weed growth as well as improve the soil structure. Non-selective herbicides can be applied before planting the green manure crop and before plowing it under. Short residual selective herbicides such as 2,4-D may be used with the green manure crop, but avoid using herbicides that leave a soil residue that will carry over into the planting year.

MULCHING

For bramble and bush fruit, biodegradable plastic mulch could be used for weed control in the planting strip. Straw mulch will also assist in weed control beneath the plants or in the planting strip if it is applied early in the season before the weed seeds germinate. Use mulch that is free of weed seeds and ensure that enough nitrogen is provided for the plants. The mulch should be pulled away from around the plants for winter rodent protection. For strawberries, use of straw mulch before weeds germinate can help control weeds. Do not use straw that has been treated with glyphosate. Some growers are trying plasticulture as a way to improve weed control.

REDUCING WEED PRESSURE

Cultivation can provide weed control between the rows. In bramble and bush fruit, a vigorous sod between the rows will prevent weeds from becoming established. It is better to seed in a fescue sod rather than rely on a natural sod composed of weed and grass species, because the weeds will seed into the herbicide strip.

ROTATING HERBICIDE FAMILIES

(See Table 1-5. *Counties with confirmed resistant weed populations*).

In perennial crops, rotation of herbicide families is important to minimize the build up of seed from weed escapes, including triazine tolerant weeds. Rotation will also help avoid an accumulation of herbicide residues in the soil that may result in crop injury over a period of years and may hinder replanting.

continued

Herbicide application timings

PRE-PLANT (PP) TREATMENTS

Pre-plant treatments are applied before the berry field is planted. Some of these herbicides kill seedlings soon after germination while others also kill weed seeds. Most herbicides used for these treatments must be thoroughly incorporated into the soil by cultivation soon after application.

PRE-PLANT (PP) WEED AND COVER CROP CONTROL

Control cover crops and emerged weeds before planting berry crops. Alternatively, a grower may choose to kill the cover crop and/or emerged weeds just before planting the berry crop and either till the area or leave the seedbed untilled.

PRE-PLANT INCORPORATED (PPI)

Two incorporations at right angles operating at a depth of 10 cm (4 in.) using a double disk (7-10 km/h) or vibrating shank S-tine cultivator (10-13 km/h) are required unless otherwise stated. Cultivation-type equipment used for herbicide incorporation is known to spread perennial weeds to previously uninfested areas. Special attention should be directed toward machinery cleanliness, and/or treating fields with perennial weeds last.

PRE-EMERGENCE (PRE)

Rainfall at 1.5-2 cm (0.6-0.8 in.) within 7-10 days after application is necessary to activate pre-emergence treatments. Shallow cultivation, rotary hoeing or harrowing will control weed escapes and improve herbicide activity in the absence of rainfall. These materials prevent emergence of many weed seedlings without reducing crop stand. Apply immediately after seeding or at least before the emergence of the crop. If these materials are applied after weeds have emerged, kill is usually poor. Best results are obtained with this method when conditions for weed seed germination are good.

POST- EMERGENCE (POST)

These chemicals are applied after the berry crop is planted. Applied as directed, the weeds can be killed without injury to the crop. Leaf stage of the weeds is critical for good control. Smaller weeds are generally easier to kill but there needs to be enough leaf surface to intercept the herbicide. Apply according to leaf stages specified on pesticide label. Crop stage is important to optimize crop safety. Adjuvants will frequently improve the weed control when used as directed. Weather or other conditions may influence the optimum rate of adjuvant, see the product label for more details. Always use appropriate drift management technology.

INTER-ROW WEEDING

The herbicide is directed between the berry crop rows onto the emerged weeds. The herbicide is used as a rescue operation where other methods of weed control have failed. Use special low pressure (7-15 kPa) applicators such as dribble bars or vibra jets equipped with shields to prevent wetting the crop.

WIPER APPLICATORS FOR SELECTIVE WEED CONTROL

Wiper applicators (rope-wick, roller applicator or similar device) have been extensively used with glyphosate. Check product labels for use of this application technique with other herbicides.

WATER VOLUMES

All herbicide treatments should be applied in a minimum of 150-300 L water/ha (60-120 L water/acre) unless otherwise specified on the label.

CAUTION: Simazine, KARMEK, DEVRINOL, and SINBAR residues high enough to harm many crops may persist for several years after removal of the planting.

Rates per hectare or acre refer to area actually treated with herbicide.

TABLE 3-3

Herbicide treatment rates for berry crops

BLUEBERRIES, HIGHBUSH		
<p>Mulching: Biodegradable mulch could be used for weed control within the plant row. Sawdust mulch will assist in weed control if it is applied early in the season before the weed seeds germinate. Apply sawdust 5 cm (2 in.) thick. The mulch will not prevent the germination of weed seeds that may blow onto the surface of the mulch. In subsequent years, the organic matter in the mulch may tie up and thus reduce the effectiveness of certain residual herbicides.</p>		
TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFEST/MAX. # APPLICATIONS
SOIL-APPLIED BROADLEAF HERBICIDE		
<p>Trade Name: SANDEA (72.6 WG) Product Rate/ha: 35-70 g/ha Product Rate/acre: 14-28 g/acre Active Ingredient(s): halosulfuron (25-51 g/ha)</p>	<p>Group #: 2 PCP #: 31209</p>	<p>REI: 12 hours PHI: 14 days Rainfast: 4 hours Max. Applications: 2</p>
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES		
<p>Trade Name: ALION 200 SC (200 g/L) Product Rate/ha: 0.375 L/ha Product Rate/acre: 0.15 L/acre Active Ingredient(s): indaziflam (0.075 kg/ha)</p>	<p>Group #: 29 PCP #: 30451</p>	<p>REI: 12 hours PHI: 14 days Rainfast: moisture required for activation Max Applications: 1</p>
<p>Trade Name: AUTHORITY 480 (480 g/L) Product Rate/ha: 219-290 mL/ha Product Rate/acre: 87.6-116.8 mL/acre Active Ingredient(s): sulfentrazone (0.105-0.140 kg/ha)</p>	<p>Group #: 14 PCP #: 29012</p>	<p>REI: 12 hours PHI: 3 days Rainfast: moisture required for activation Max. Applications: 1</p>
<p>Trade Name: CALLISTO 480 SC or MESTER 480 SC HERBICIDE (480 g/L) Product Rate/ha: 0.3 L/ha Product Rate/acre: 0.12 L/acre Active Ingredient(s): mesotrione (0.144 kg/ha)</p>	<p>Group #: 27 PCP #: 27833 or 33632</p>	<p>REI: 12 hours PHI: 60 days Rainfast: 3 hours for emerged weeds Max. Applications: 1</p>

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued***BLUEBERRIES, HIGHBUSH**

The nitrogen requirements of the crop will change as the mulch is degraded. Initially nitrogen will be consumed by micro-organisms, thus necessitating higher rates of nitrogen fertilizer. Later, as the sawdust is degrading, nitrogen will be released and the crop may require less nitrogen fertilizer than an unmulched crop. It may take 2 years or more for sawdust mulch to significantly decompose. Adjust fertilizer rates according to mulch breakdown, plant growth and leaf nutrient analysis results.

PRECAUTIONS - For more information, see the label.

SOIL-APPLIED BROADLEAF HERBICIDE

- New, 1 year or more and established plantings.
- **Do NOT** apply to Elliot variety blueberries.
- 1-4 year bushes apply 35-47 g/ha (14-19 g/acre).
- Older than 4 year bushes apply 35-70 g/ha (14-28 g/acre).
- Allow a minimum of 45 days between applications.
- **Do NOT** apply more than 140 g/ha (56 g/acre) per season.
- Rains greater than 2.5 cm (1 in.) within 5-7 days of application may cause temporary yellowing and delay development of crop.
- **Do NOT** contact green tissue.
- **Do NOT** spray over top of plastic mulch.

SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES

- Established plantings for at least one year after the bushes have been planted and exhibit normal growth and vigor.
 - PRE to weeds. Apply as a directed spray to the soil before weeds germinate. If weeds have emerged, this product may be tank-mixed with a burndown herbicide (consult label for further instructions).
 - May be applied at any time throughout the growing season when the ground is not frozen or snow covered.
 - Excessive crop or weed debris present on the soil surface at time of application may prevent uniform product distribution reaching the soil and result in reduced weed control.
- Avoid spraying the green bark of trunks/branches, foliage and fruit.
 - Best results obtained when the soil is moist at the time of application and followed by at least 1.25 cm (0.5 in.) of rainfall or sprinkler irrigation 2 weeks after application.
 - **Do NOT** apply heavy irrigation immediately after application.
 - **Do NOT** apply using airblast sprayers or by air or using a mechanically pressurized handgun.
 - **Do NOT** tank mix with flumioxazin (CHATEAU) or other products containing sulfentrazone.
- PRE and up to the 2-leaf stage of weeds.
 - POST to weeds from the 3-8-leaf stage with AGRAL 90 at 0.2% v/v.
 - Apply up to the 8-leaf stage of weeds and prebloom of the crop.

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFEST/MAX. # APPLICATIONS
Trade Name: CASORON G-4 (4%) Product Rate/ha: 175-225 kg/ha Product Rate/acre: 70-90 kg/acre Active Ingredient(s): dichlobenil (7-9 kg/ha)	Group #: 20 PCP #: 12533	REI: 12 hours PHI: 100 days Rainfast: not stated Max. Applications: 1
Trade Name: CHATEAU WDG (51.1%) Product Rate/ha: 0.28-0.42 kg/ha Product Rate/acre: 0.11-0.17 kg/acre Active Ingredient(s): flumioxazin (0.14-0.21 kg/ha)	Group #: 14 PCP #: 29231	REI: 12 hours PHI: 60 days Rainfast: moisture required for activation Max. Applications: 2
Trade Name: DEVRINOL 2-XT (240 g/L) Product Rate/ha: 18.75 L/ha Product Rate/acre: 7.5 L/acre Active Ingredient(s): napropamide (4.5 kg/ha)	Group #: 15 PCP #: 31688	REI: 12 hours PHI: 70 days Rainfast: moisture required for activation Max. Applications: not stated
Trade Name: DUAL II MAGNUM (915 g/L) or KOMODO HERBICIDE (915 g/L) Product Rate/ha: 1.25-1.75 L/ha Product Rate/acre: 0.5-0.7 L/acre Active Ingredient(s): s-metolachlor (1.14-1.60 kg/ha)	Group #: 15 PCP #: 25729 or 33599	REI: 12 hours PHI: 30 days Rainfast: moisture required for activation Max. Applications: 1
Trade Name: PRINCEP NINE-T (90 WG) Product Rate/ha: 2.5-3.75 kg/ha Product Rate/acre: 1.0-1.5 kg/acre Active Ingredient(s): simazine (2.25-3.38 kg/ha)	Group #: 5 PCP #: 16370	REI: 12 hours PHI: not stated Rainfast: moisture required for activation Max. Applications: 1
Trade Name: SENCOR 75 DF (75 %) Product Rate/ha: 1 kg/ha Product Rate/acre: 0.4 kg/acre Active Ingredient(s): metribuzin (0.75 kg/ha)	Group #: 5 PCP #: 17242	REI: 12 hours PHI: 2 years Rainfast: moisture required for activation Max. Applications: 1

continued

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

PRECAUTIONS - For more information, see the label.
<ul style="list-style-type: none"> • Established plantings of at least 3 years ONLY. • PRE – apply to cool moist but unfrozen soil in late fall or spring before weeds emerge. • Use the higher application rate of 225 kg/ha (90 kg/acre) ONLY every other year. • Do NOT apply if air temperatures are above 10°C-15°C to avoid injury from volatilization. • Use the lower rate if irrigation or rain will follow application. • Do NOT use on light, sandy soil.
<ul style="list-style-type: none"> • Established plantings of at least 2 years ONLY. • Maximum 2 applications per growing season at least 30 days apart. • Do NOT apply after budbreak unless using hooded or shielded equipment. • Apply lower rate on sandy (coarse textured) soils with less than 5% organic matter and the higher rate on clay (medium textured) soils with less than 5% organic matter. • Do NOT apply through irrigation equipment. • Please review label for more detailed instructions.
<ul style="list-style-type: none"> • New and established plantings. • Incorporation by rainfall or irrigation is essential. • Do NOT apply to frozen ground.
<ul style="list-style-type: none"> • New and established plantings. • Pre-emergence to weeds. • Apply as a banded application, directed at base of plants. • Avoid contact with trunk and foliage.
<ul style="list-style-type: none"> • Established plantings of 1 year or more ONLY. • Use lower rates for coarse, sandy soil. • Use higher rates for clay or higher organic matter soil. • Avoid spraying young shoots.
<ul style="list-style-type: none"> • New plantings ONLY. • Apply as a directed application in a band under the bushes. • Apply to weed-free soil after planting. • Light rain or irrigation is needed to move herbicide into soil. • Do NOT use on soils with less than 2% organic matter.

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFEST/MAX. # APPLICATIONS
Trade Name: SINBAR WDG (80 WDG) Product Rate/ha: 2.75-4.25 kg/ha Product Rate/acre: 1.1-1.7 kg/acre Active Ingredient(s): terbacil (2.2-3.4 kg/ha)	Group #: 5 PCP #: 30082	REI: 12 hours PHI: 80 days Rainfast: moisture required for activation Max. Applications: 1
POST-EMERGENCE GRASS HERBICIDES		
Trade Name: POAST ULTRA (450 g/L) + MERGE Product Rate/ha: 0.32-1.1 L/ha + 0.25-2 L/ha Product Rate/acre: 0.13-0.44 L/acre + 0.1-0.8 L/acre Active Ingredient(s): sethoxydim (0.14-0.50 kg/ha) + surfactant/solvent (0.25-2 L/ha)	Group #: 1 PCP #: 24835	REI: 12 hours PHI: 1 day Rainfast: 1 hour Max. Applications: 2
Trade Name: SELECT (240 g/L) or ARROW (240 g/L) or CENTURION (240 g/L) + AMIGO Product Rate/ha: 0.19-0.38 L/ha + 5-10 L/1,000 L Product Rate/acre: 0.08-0.15 L/acre + 5-10 L/1,000 L Active Ingredient(s): clethodim (0.46-0.91 L/ha) + surfactant (0.5-1.0% v/v)	Group #: 1 PCP #: 22625 or 28224 or 27598	REI: 12 hours PHI: 14 days Rainfast: 1 hour Max. Applications: 1
Trade Name: VENTURE L (125 g/L) Product Rate/ha: 0.6-2 L/ha Product Rate/acre: 0.24-0.80 L/acre Active Ingredient(s): fluazifop-p-butyl (0.075-0.25 kg/ha)	Group #: 1 PCP #: 21209	REI: 12 hours PHI: 15 days Rainfast: 2 hours Max. Applications: 1
POST-EMERGENCE BROADLEAF HERBICIDES		
Trade Name: 2,4-D AMINE (560 g/L) Product Rate/ha: 1.7 L/ha Product Rate/acre: 0.69 L/acre Active Ingredient(s): 2,4-D (0.95 kg/ha)	Group #: 4 PCP #: See label	REI: 12 hours PHI: 15 days Rainfast: 1 day Max. Applications: not stated
Trade Name: AIM EC (240 g/L) + AGRAL 90 or AG-SURF or + MERGE Product Rate/ha: 36.5-117 mL/ha + 2.5 L/1,000 L or 1 L/1,000 L Product Rate/acre: 14.6-46.8 L/acre + 2.5 L/1,000 L or + 1 L/1,000 L Active Ingredient(s): carfentrazone-ethyl (8.8-28.1 g/ha) + non-ionic surfactant (0.25% v/v) or + surfactant/solvent (0.1% v/v)	Group #: 14 PCP #: 28573	REI: 12 hours PHI: 1 day Rainfast: 8 hours Max. Applications: 1

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

PRECAUTIONS - For more information, see the label.
<ul style="list-style-type: none"> • Established plantings of at least 1 year ONLY. • Injury may occur on sandy soil even with the low rate. • Use the high rate only on muck or peat soils where experience has shown this to be a safe practice.
POST-EMERGENCE GRASS HERBICIDES
<ul style="list-style-type: none"> • New and established plantings. • For annual grass, use 0.32 L/ha (0.13 L/acre) at the 1-6-leaf stage. • For volunteer grains, use 0.47 L/ha (0.19 L/acre) at the 1-6-leaf stage. • For quackgrass, use 1.1 L/ha (0.44 L/acre) up to the 3-leaf stage. Thorough preplant tillage will ensure more uniform quackgrass emergence. Cultivate after 7 days. Use the high rate of MERGE for quackgrass. • Do NOT use flood jet or hollow cone nozzles. • Minimum of 14 days between applications.
<ul style="list-style-type: none"> • Blueberries are tolerant at all stages of growth. • Apply using ground equipment. • For quackgrass, use the higher application rate of 0.38 L/ha (0.15 L/acre).
<ul style="list-style-type: none"> • New and established plantings. • Apply in a band using 100-300 L water/ha (60-120 L water/acre). • Apply at 2-6 leaf stage of annual grasses or 3-5 leaf stage of quackgrass.
POST-EMERGENCE BROADLEAF HERBICIDES
<ul style="list-style-type: none"> • Directed spray between rows of the crops in early spring after weeds have emerged and are actively growing. Do NOT overspray.
<ul style="list-style-type: none"> • New and established plantings. • Apply POST with a hooded sprayer between the rows or between the plastic mulch. • Apply to actively growing weeds up to 10 cm (4 in.) tall. • Crop injury may occur if the spray is allowed to come in contact with the green stem, leaves, bloom or fruit.

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFEST/MAX. # APPLICATIONS
Trade Name: BASAGRAN or BENTA SUPER or BROADLOOM (480 g/L) + ASSIST Product Rate/ha: 1.75 L/ha + 5 L/1,000 L Product Rate/acre: 0.7 L/acre + 5 L/1,000 L Active Ingredient(s): bentazon (0.84 kg/ha) + oil concentrate (0.5% v/v)	Group #: 6 PCP #: 12221 or 32827 or 32661	REI: 12 hours PHI: 25 days Rainfast: 6 hours Max. Applications: 2
Trade Name: CALLISTO 480 SC or MESTER 480 SC HERBICIDE (480 g/L) Product Rate/ha: 0.3 L/ha Product Rate/acre: 0.12 L/acre Active Ingredient(s): mesotrione (0.144 kg/ha)	Group #: 27 PCP #: 27833 or 33632	REI: 12 hours PHI: 60 days Rainfast: 3 hours for emerged weeds Max. Applications: 1
Trade Name: GOAL 2XL or BASKET 2XL (240 g/L) Product Rate/ha: 1 L/ha Product Rate/acre: 0.4 L/acre Active Ingredient(s): oxyfluorfen (0.24 kg/ha)	Group #: 14 PCP #: 24913 or 33560	REI: 12 hours PHI: 50 days Rainfast: 3 hours Max. Applications: 1
Trade Name: LONTREL XC (600 g/L) or PYRALID HERBICIDE (360 g/L) Product Rate/ha: 0.25-0.5 L/ha or 0.5-1 L/ha Product Rate/acre: 0.10-0.20 L/acre or 0.27-0.40 L/acre Active Ingredient(s): clopyralid (0.15-0.30 or 0.18-0.36 kg/ha)	Group #: 4 PCP #: 32795 or 32265	REI: 12 hours PHI: 45 days Rainfast: 4 hours Max. Applications: 1
Trade Name: SANDEA (72.6 WG) + non-ionic surfactant Product Rate/ha: 35-70 g/ha + 2.5 L/1,000 L Product Rate/acre: 14-28 g/acre + 2.5 L/1,000 L Active Ingredient(s): halosulfuron (25-51 g/ha) + non-ionic surfactant (0.2% v/v)	Group #: 2 PCP #: 31209	REI: 12 hours PHI: 14 days Rainfast: 4 hours Max. Applications: 2

continued

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

PRECAUTIONS - For more information, see the label.

- Established plantings **ONLY**.
- For top growth control of yellow nutsedge.
- Make 2 applications 7-10 days apart, when weeds are small.

- POST to weeds from the 3-8-leaf stage with AGRAL 90 at 0.2% v/v.
- Apply up to the 8-leaf stage of weeds and prebloom of the crop.
- Apply by broadcast (direct spray to base of plant).

- Apply POST as a band on either side of the blueberry row. Adjust the per ha rate accordingly.
- Apply when weeds are at 2-4-leaf stage and are actively growing.
- **Do NOT** apply to sandy soil.
- **Do NOT** add oils or surfactants to the spray mixture.

- New and established plantings.
- Apply once per year, directed under the bushes on emerged weeds.
- For emerged vetch, use 0.25 or 0.5 L/ha (0.1 or 0.2 L/acre) depending on formulation.
- For red and white clover, use 0.5 or 1 L/ha (0.2 or 0.4 L/acre) depending on formulation.

- New, 1 year or more and established plantings.
- **Do NOT** apply to Elliot variety blueberries.
- 1-4 year bushes apply 35-47 g/ha (14-19 g/acre).
- Older than 4 year bushes apply 35-70 g/ha (14-28 g/acre).
- Apply as a single or sequential application; allow a minimum of 45 days between applications.
- For nutsedge control, apply when fully emerged. If applying twice, apply first application at 3-5-leaf stage. For best results apply 21 g/acre on bushes older than 4 years.
- **Do NOT** apply more than 140 g/ha (56 g/acre) per season.
- Rains greater than 2.5 cm (1 in.) within 5-7 days of application may cause temporary yellowing and delay development of crop.
- **Do NOT** contact green tissue.
- **Do NOT** spray over top of plastic mulch.

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFEST/MAX. # APPLICATIONS
POST-EMERGENCE GRASS AND BROADLEAF HERBICIDES		
Trade Name: PRISM (25 SG) or SHARDA RIMSULFURON (25 WDG) + AGRAL 90 or AG-SURF Product Rate/ha: 60 g/ha + 2 L/1,000 L Product Rate/acre: 24 g/acre + 2 L/1,000 L Active Ingredient(s): rimsulfuron (15 g/ha) + non-ionic surfactant (0.2% v/v)	Group #: 2 PCP #: 30057 or 32932	REI: 12 hours PHI: 21 days Rainfast: 4 hours Max. Applications: 1
NON-SELECTIVE HERBICIDES AND TANK MIX OPTIONS		
Trade Name: GLYPHOSATE (360 g/L), GLYPHOSATE (480 g/L), GLYPHOSATE (500 g/L), GLYPHOSATE (540 g/L) Product Rate/ha: 2.8-5.6 L/ha, 2.1-4.2 L/ha, 2-4 L/ha, 1.85-3.7 L/ha Product Rate/acre: 1.12-2.24 L/acre, 0.83-1.67 L/acre, 0.80-1.60 L/acre, 0.74-1.48 L/acre Active Ingredient(s): glyphosate (1-2 kg/ha)	Group #: 9 PCP #: See label	REI: 12 hours PHI: 30 days Rainfast: 1 hour Max. Applications: 1
Trade Name: IGNITE SN (150 g/L) Product Rate/ha: 2.7-5 L/ha Product Rate/acre: 1.08-2.0 L/acre Active Ingredient(s): glufosinate ammonium (0.41-0.75 kg/ha)	Group #: 10 PCP #: 28532	REI: 12 hours PHI: 14 days Rainfast: 4 hours Max. Applications: 2
CRANBERRIES		
<p>Maintaining a healthy and vigorous crop will aid in weed control by avoiding openings in the bed for weed germination and establishment. Prevent weeds from setting seed on dikes and in adjacent uncropped areas by using cultural or chemical weed control measures.</p>		
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES		
Trade Name: CALLISTO 480 SC or MESTER 480 SC HERBICIDE (480 g/L) Product Rate/ha: 0.21-0.3 L/ha Product Rate/acre: 0.084-0.12 L/acre Active Ingredient(s): mesotrione (0.10-0.144 kg/ha)	Group #: 27 PCP #: 27833 or 33632	REI: 12 hours PHI: 60 days Rainfast: 48 hours Max. Applications: 1

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

PRECAUTIONS - For more information, see the label.
POST-EMERGENCE GRASS AND BROADLEAF HERBICIDES
<ul style="list-style-type: none"> • Established plantings of 1 year or more ONLY. • Apply when quackgrass is at 3-6-leaf stage (less than 10 cm or 4 in. tall), annual grasses at 1-6-leaf stage and redroot pigweed is in the 4-6-leaf stage. • Apply on highbush blueberries that are in good health and vigour. • Use a directed spray application to completely cover weeds, while minimizing amount of spray on blueberry plants.
NON-SELECTIVE HERBICIDES AND TANK MIX OPTIONS
<ul style="list-style-type: none"> • New and established plantings. • Apply as a directed spray under the bushes, avoiding new shoots. • Avoid contact with fruit, foliage or canes. • Not all formulations are registered on all crops. See label for specific uses and rates.
<ul style="list-style-type: none"> • Established plantings ONLY. • Do NOT apply to immature and weak plantings. • Repeat treatment may be necessary. • Do NOT apply more than 6.7 L/ha (2.7 L/acre) of product during a season. • Avoid spray contact with foliage and bark. • It is not necessary to remove suckers prior to application.
CRANBERRIES
<p>Mowing at regular intervals will prevent many weeds from setting seed. Seeding the dikes with a desirable grass cover will reduce the opportunities for weed establishment and will provide bank stabilization.</p>
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES
<ul style="list-style-type: none"> • Established plantings ONLY. • Bearing Buds – Apply between bud break and fruit set. • Non-Bearing Buds – Apply between bud break and 60 days before fall or winter flooding. • Do NOT harvest within 1 year of application. • Do NOT flood within 60 days of treatment. • Do NOT apply if sprinkler irrigation for frost protection or rainfall is expected within 48 hours of application. • Do NOT apply by hand. • Do NOT apply through irrigation equipment.

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFEST/MAX. # APPLICATIONS
Trade Name: CASORON G-4 (4%) Product Rate/ha: 110 kg/ha Product Rate/acre: 44 kg/acre Active Ingredient(s): dichlobenil (4.4 kg/ha)	Group #: 20 PCP #: 12533	REI: 12 hours PHI: not stated Rainfast: not stated Max. Applications: 1
Trade Name: DEVRINOL 2-XT (240 g/L) Product Rate/ha: 18.75-27.92 L/ha Product Rate/acre: 7.5-11.2 L/acre Active Ingredient(s): napropamide (4.5-6.7 kg/ha)	Group #: 15 PCP #: 31688	REI: 12 hours PHI: not stated Rainfast: moisture required for activation Max. Applications: 1
POST-EMERGENCE GRASS HERBICIDES		
Trade Name: POAST ULTRA (450 g/L) + MERGE Product Rate/ha: 0.32-1.1 L/ha + 0.25-2 L/ha Product Rate/acre: 0.13-0.44 L/acre + 0.1-0.8 L/acre Active Ingredient(s): sethoxydim (0.14-0.50 kg/ha) + surfactant/solvent (0.25-2 L/ha)	Group #: 1 PCP #: 24835	REI: 12 hours PHI: 15 days Rainfast: 1 hour Max. Applications: not stated
Trade Name: SELECT (240 g/L) or ARROW (240 g/L) or CENTURION (240 g/L) + AMIGO Product Rate/ha: 0.19-0.38 L/ha + 5-10 L/1,000 L Product Rate/acre: 0.08-0.15 L/acre + 5-10 L/1,000 L Active Ingredient(s): clethodim (0.46-0.91 L/ha) + surfactant (0.5-1.0% v/v)	Group #: 1 PCP #: 22625 or 28224 or 27598	REI: 12 hours PHI: 30 days Rainfast: 1 hour Max. Applications: 1
Trade Name: VENTURE L (125 g/L) Product Rate/ha: 0.6-2 L/ha Product Rate/acre: 0.24-0.80 L/acre Active Ingredient(s): fluazifop-p-butyl (0.075-0.25 kg/ha)	Group #: 1 PCP #: 21209	REI: 12 hours PHI: not stated Rainfast: 2 hours Max. Applications: 1
POST-EMERGENCE BROADLEAF HERBICIDES		
Trade Name: 2,4-D (470 g/L), 2,4-D (564 g/L), 2,4-D (660 g/L) Product Rate/ha: 1 L/2 L water, 1 L/2.6 L water, 0.71 L/2 L water Product Rate/acre: 1 L/2 L water, 1 L/2.6 L water, 0.71 L/2 L water Active Ingredient(s): 2,4-D (0.47 kg/2 L water)	Group #: 4 PCP #: see label	REI: 12 hours PHI: 50 days Rainfast: 1 day Max. Applications: 1

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

PRECAUTIONS - For more information, see the label.
<ul style="list-style-type: none">• Established plantings ONLY.• PRE – For annual broadleaf weeds, certain sedges and Juncus species.• Apply in early spring pre-bloom.• Temporary reddening of plants may occur, especially with late spring applications.• Do NOT use on beds recently mowed for vines.
<ul style="list-style-type: none">• Established plantings ONLY.
POST-EMERGENCE GRASS HERBICIDES
<ul style="list-style-type: none">• New and established plantings.• For annual grass, use 0.32 L/ha (0.13 L/acre) at the 1-6-leaf stage.• For volunteer grains, use 0.47 L/ha (0.19 L/acre) at the 1-6-leaf stage.• For quackgrass, use 1.1 L/ha (0.44 L/acre) up to the 3-leaf stage. Thorough preplant tillage will ensure more uniform quackgrass emergence. Use the high rate of MERGE for quackgrass.• Do NOT use flood jet or hollow cone nozzles.
<ul style="list-style-type: none">• Cranberry is tolerant at all stages of growth, however, do not apply between the hook stage and full fruit set.• Apply using ground equipment.• For quackgrass, use the higher application rate of 0.38 L/ha (0.15 L/acre).
<ul style="list-style-type: none">• New and established non-bearing plantings.• Apply at 0.8 L/ha (0.32 L/acre) at 2-5-leaf stage of volunteer wheat and barley.• Apply at 1 L/ha (0.4 L/acre) at 2-5-leaf stage of annual grasses (2-4-leaf for foxtails).• Apply at 2 L/ha (0.8 L/acre) at 3-5-leaf stage of quackgrass and wirestem muhly.
POST-EMERGENCE BROADLEAF HERBICIDES
<ul style="list-style-type: none">• New and established plantings.• For emerged annual and perennial weeds, including hardhack, St. John's Wort, alder and purple aster.• Apply with a ropewick or other wiper to actively growing weeds (June to July).• Do NOT contact the crop.

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFAST/MAX. # APPLICATIONS
Trade Name: CALLISTO 480 SC or MESTER 480 SC HERBICIDE (480 g/L) + AGRAL 90 Product Rate/ha: 0.21 L/ha + 2 L/1,000 L Product Rate/acre: 0.084 L/acre + 2 L/1,000 L Active Ingredient(s): mesotrione (0.1 kg/ha) + non-ionic surfactant (0.2% v/v)	Group #: 27 PCP #: 27833 or 33632	REI: 12 hours PHI: 60 days Rainfast: 48 hours Max. Applications: 2
Trade Name: LONTREL XC (600 g/L) or PYRALID HERBICIDE (360 g/L) Product Rate/ha: 12 mL/L water or 24 mL/L water Product Rate/acre: 12 mL/L or 24 mL/L water Active Ingredient(s): clopyralid (7.2 g/L or 8.6 g/L water)	Group #: 4 PCP #: 32795 or 32265	REI: 12 hours PHI: 60 days Rainfast: 4 hours Max. Applications: 2
NON-SELECTIVE HERBICIDES		
Trade Name: GLYPHOSATE (360 g/L), GLYPHOSATE (480 g/L), GLYPHOSATE (500 g/L), GLYPHOSATE (540 g/L) Product Rate/ha: 1 L/4 L of water, 0.75 L/4 L of water, 0.72 L/4 L of water, 0.62 L/4 L of water Product Rate/acre: 1 L/4 L of water, 0.75 L/4 L of water, 0.72 L/4 L of water, 0.62 L/4 L of water Active Ingredient(s): glyphosate (0.36 kg/4 L of water)	Group #: 9 PCP #: see label	REI: 12 hours PHI: 30 days Rainfast: 1 hour Max. Applications: 1
CURRANTS AND GOOSEBERRIES		
A biodegradable straw mulch could be used for weed control in the planting strip. Do NOT use straw treated with glyphosate.		
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES		
Trade Name: ALION 200 SC (200 g/L) Product Rate/ha: 0.375 L/ha Product Rate/acre: 0.15 L/acre Active Ingredient(s): indaziflam (0.075 kg/ha)	Group #: 29 PCP #: 30451	REI: 12 hours PHI: 14 days Rainfast: moisture required for activation Max Applications: 1

continued

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

PRECAUTIONS - For more information, see the label.
<ul style="list-style-type: none">• LATE POST – at the 3-8-leaf stage of weeds.• Allow 14 days between applications.• Bearing Buds – Apply between bud break and fruit set.• Non-Bearing Buds – Apply between bud break and 60 days before fall or winter flooding.• Do NOT harvest within 1 year of application.• Do NOT flood within 60 days of treatment.• Do NOT apply if sprinkler irrigation for frost protection or rainfall is expected within 48 hours of application.• Do NOT apply by hand.• Do NOT apply through irrigation equipment.
<ul style="list-style-type: none">• New and established plantings.• For emerged vetch.• Do NOT use more than 2 applications a year – in spring before bud break, again until growth is 1-2 mm (0.04-0.08 in.) long, and/or in the fall at least 2 weeks after harvest, when vines have winter dormancy colour.• Apply with wiper equipment onto weed foliage that extends above the cranberry canopy. Avoid contact with cranberry shoots after growth begins.
NON-SELECTIVE HERBICIDES
<ul style="list-style-type: none">• New and established plantings.• Apply with a rope wick or other similar device when weeds are 15 cm (6 in.) above the crop.• Avoid contact with the cranberry vines.• Do NOT apply when weeds are wet.• Not all formulations are registered on all crops. See label for specific uses and rates.
CURRANTS AND GOOSEBERRIES
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES
<ul style="list-style-type: none">• Established plantings for at least one year after the bushes have been planted and exhibit normal growth and vigor.• PRE to weeds. Apply as a directed spray to the soil before weeds germinate. If weeds have emerged, this product may be tank-mixed with a burndown herbicide (consult label for further instructions).• May be applied at any time throughout the growing season when the ground is not frozen or snow covered.• Excessive crop or weed debris present on the soil surface at time of application may prevent uniform product distribution reaching the soil and result in reduced weed control.

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFEST/MAX. # APPLICATIONS
Trade Name: AUTHORITY 480 (480 g/L) Product Rate/ha: 219-290 mL/ha Product Rate/acre: 87.6-116.8 mL/acre Active Ingredient(s): sulfentrazone (0.105-0.140 kg/ha)	Group #: 14 PCP #: 29012	REI: 12 hours PHI: 3 days Rainfast: moisture required for activation Max. Applications: 1
Trade Name: CASORON G-4 (4 %) Product Rate/ha: 110 -175 kg/ha Product Rate/acre: 45 -70 kg/acre Active Ingredient(s): dichlobenil (4.4 -7 kg/ha)	Group #: 20 PCP #: 12533	REI: 12 hours PHI: 110 days Rainfast: not stated Max Applications: 1
POST-EMERGENCE BROADLEAF HERBICIDES		
Trade Name: AIM EC (240 g/L) + AGRAL 90 or AG-SURF or + MERGE Product Rate/ha: 36.5-117 mL/ha + 2.5 L/1,000 L or 1 L/1,000 L Product Rate/acre: 14.6-46.8 mL/acre + 2.5 L/1,000 L or + 1 L/1,000 L Active Ingredient(s): carfentrazone-ethyl (8.8-28.1 g/ha) + non-ionic surfactant (0.25% v/v) or + surfactant/solvent (0.1% v/v)	Group #: 14 PCP #: 28573	REI: 12 hours PHI: 1 day Rainfast: 8 hours Max. Applications: 1
RASPBERRIES		
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES		
Trade Name: ALION 200 SC (200 g/L) Product Rate/ha: 0.375 L/ha Product Rate/acre: 0.15 L/acre Active Ingredient(s): indaziflam (0.075 kg/ha)	Group #: 29 PCP #: 30451	REI: 12 hours PHI: 14 days Rainfast: moisture required for activation Max Applications: 1

continued

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

PRECAUTIONS - For more information, see the label.
<ul style="list-style-type: none"> • Avoid spraying the green bark of trunks/branches, foliage and fruit. • Best results obtained when the soil is moist at the time of application and followed by at least 1.25 cm (0.5 in.) of rainfall or sprinkler irrigation 2 weeks after application. • Do NOT apply heavy irrigation immediately after application. • Do NOT apply using airblast sprayers or by air or using a mechanically pressurized handgun. • Do NOT tank mix with flumioxazin (CHATEAU) or other products containing sulfentrazone.
<ul style="list-style-type: none"> • PRE - Apply uniformly during the dormant period (late winter or fall) to Currants (red and black) ONLY. • Apply to cool, moist but unfrozen soil before weeds emerge. • Use the low rate of 110 kg/ha (45 kg/acre) for control of annual weeds. The high rate of 175 kg/ha (70 kg/acre) can be used for control of grasses and tough perennial weeds. • Apply the high rate of 175 kg/ha (70 kg/acre) ONLY every other year. • Do NOT apply if air temperatures are above 10-15°C to avoid injury from volatilization. • Do NOT use on light sandy soil. • Do NOT cultivate or work into the soil.
POST-EMERGENCE BROADLEAF HERBICIDES
<ul style="list-style-type: none"> • Planting year, 2-4 weeks after planting. • Apply POST with a hooded sprayer between the rows or between the plastic mulch. • Apply to actively growing weeds up to 10 cm (4 in.) tall. • Injury may result if the spray is allowed to come in contact with the green stem, leaves, bloom or fruit.
<h2 style="margin: 0;">RASPBERRIES</h2>
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES
<ul style="list-style-type: none"> • Established plantings for at least one year after the bushes have been planted and exhibit normal growth and vigor. • PRE to weeds. Apply as a directed spray to the soil, either under dormant canes prior to bud break and new cane emergence or after mowing but prior to new cane emergence. If weeds have emerged, this product may be tank-mixed with a burndown herbicide (consult label for further instructions). • May be applied at any time throughout the growing season when the ground is not frozen or snow covered. • Excessive crop or weed debris present on the soil surface at time of application may prevent uniform product distribution reaching the soil and result in reduced weed control.

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFAST/MAX. # APPLICATIONS
Trade Name: AUTHORITY 480 (480 g/L) Product Rate/ha: 219-290 mL/ha Product Rate/acre: 87.6-116.8 mL/acre Active Ingredient(s): sulfentrazone (0.105-0.140 kg/ha)	Group #: 14 PCP #: 29012	REI: 12 hours PHI: 3 days Rainfast: moisture required for activation Max. Applications: 1
Trade Name: CASORON G-4 (4%) Product Rate/ha: 110-175 kg/ha Product Rate/acre: 45-70 kg/acre Active Ingredient(s): dichlobenil (4.4-7 kg/ha)	Group #: 20 PCP #: 12533	REI: 12 hours PHI: 100 days Rainfast: not stated Max Applications: 1
Trade Name: CHATEAU WDG (51.1%) Product Rate/ha: 0.4 kg/ha Product Rate/acre: 0.16 kg/acre Active Ingredient(s): flumioxazin (0.22 kg/ha)	Group #: 14 PCP #: 29231	REI: 12 hours PHI: 7 days Rainfast: moisture required for activation Max. Applications: 2
Trade Name: DEVRINOL 2-XT (240 g/L) Product Rate/ha: 18.75 L/ha Product Rate/acre: 7.5 L/acre Active Ingredient(s): napropamide (4.5 kg/ha)	Group #: 15 PCP #: 31688	REI: 12 hours PHI: not stated Rainfast: moisture required for activation Max. Applications: 1
Trade Name: PRINCEP NINE-T (90 WG) Product Rate/ha: 2-2.5 kg/ha Product Rate/acre: 0.8-1.0 kg/acre Active Ingredient(s): simazine (1.8-2.25 kg/ha)	Group #: 5 PCP #: 16370	REI: 12 hours PHI: not stated Rainfast: moisture required for activation Max. Applications: 1
Trade Name: SIMADEx (500 g/L) Product Rate/ha: 3.6-4.5 L/ha Product Rate/acre: 1.44-1.8 L/acre Active Ingredient(s): simazine (1.8-2.25 kg/ha)	Group #: 5 PCP #: 15902	REI: 12 hours PHI: not stated Rainfast: moisture required for activation Max. Applications: 1

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

PRECAUTIONS - For more information, see the label.
<ul style="list-style-type: none">• Avoid spraying the green bark of trunks/branches, foliage and fruit.• Best results obtained when the soil is moist at the time of application and followed by at least 1.25 cm (0.5 in.) of rainfall or sprinkler irrigation 2 weeks after application.• Do NOT apply heavy irrigation immediately after application.• Do NOT apply using airblast sprayers or by air or using a mechanically pressurized handgun.• Do NOT tank mix with flumioxazin (CHATEAU) or other products containing sulfentrazone.
<ul style="list-style-type: none">• PRE - Apply on established raspberry plantings of at least one year during the dormant period (late winter or fall).• Apply to cool, moist but unfrozen soil before weeds emerge.• Apply the high rate of 175 kg/ha (70 kg/acre) ONLY every other year.• Do NOT apply if air temperatures are above 10-15°C to avoid injury from volatilization.• Do NOT use on light, sandy soil.• Do NOT cultivate or work into the soil.
<ul style="list-style-type: none">• Apply a uniform, broadcast or banded spray directed at the base of canes prior to weed emergence.• Preferred application timing is in the fall to maximize herbicide activation through rainfall.• Crop injury may result from applications made to poorly drained soils and/or under cool, wet conditions.• Rainfall or irrigation of 0.5-1 cm (0.2-0.4 in.) MUST occur between application and transplanting in order for herbicide activation to occur.• AVOID spray contact to foliage and green canes.• Weed control will be reduced if there is any mechanical incorporation of the soil following application.• Do NOT apply within 100 metres of non-dormant pears.• Do NOT apply on soils with greater than 5% organic matter or on fine-textured soils.• Do NOT make a sequential application within 30 days of the first application.
<ul style="list-style-type: none">• New and established plantings.• PRE - Apply ONLY once per season, either in the fall or spring, before weeds emerge.• Incorporation by rainfall or irrigation is essential.• Do NOT apply to frozen ground.• Avoid contact with fruit or foliage.
<ul style="list-style-type: none">• Established plantings ONLY.• Apply as a directed spray at the base of the canes early in the spring before the weeds emerge.• Use lower rates for coarse, sandy soil.• Use higher rates for clay or higher organic matter soil.• Keep spray off young shoots.• Do NOT apply if a heavy rainfall is expected.
<ul style="list-style-type: none">• Established plantings ONLY.• Apply as a directed spray at the base of the canes early in the spring before the weeds emerge.• Use lower rates for coarse, sandy soil.• Use higher rates for clay or higher organic matter soil.• Keep spray off young shoots.• Do NOT apply if a heavy rainfall is expected.

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFAST/MAX. # APPLICATIONS
Trade Name: SIMAZINE 480 (480 g/L) Product Rate/ha: 3.8-4.7 L/ha Product Rate/acre: 1.52-1.88 L/acre Active Ingredient(s): simazine (1.8-2.25 kg/ha)	Group #: 5 PCP #: 23181	REI: 12 hours PHI: not stated Rainfast: moisture required for activation Max. Applications: 1
POST-EMERGENCE GRASS HERBICIDES		
Trade Name: POAST ULTRA (450 g/L) + MERGE Product Rate/ha: 0.32-1.1 L/ha + 0.25-2 L/ha Product Rate/acre: 0.13-0.44 L/acre + 0.1-0.8 L/acre Active Ingredient(s): sethoxydim (0.14-0.50 kg/ha) + surfactant/solvent (0.25-2 L/ha)	Group #: 1 PCP #: 24835	REI: 12 hours PHI: 37 days Rainfast: 1 hour Max. Applications: not stated
Trade Name: VENTURE L (125 g/L) Product Rate/ha: 0.6-2 L/ha Product Rate/acre: 0.24-0.80 L/acre Active Ingredient(s): fluazifop-p-butyl (0.075-0.25 kg/ha)	Group #: 1 PCP #: 21209	REI: 12 hours PHI: 1 days Rainfast: 2 hours Max. Applications: 2
POST-EMERGENCE BROADLEAF HERBICIDES		
Trade Name: 2,4-D (470 g/L), 2,4-D (564 g/L), 2,4-D (660 g/L) Product Rate/ha: 1.2 L/ha, 0.92 L/ha, 0.83 L/ha Product Rate/acre: 0.48 L/acre, 0.37 L/acre, 0.33 L/acre Active Ingredient(s): 2,4-D (0.55 kg/ha)	Group #: 4 PCP #: see label	REI: 12 hours PHI: not stated Rainfast: 1 day Max. Applications: 2

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued***PRECAUTIONS - For more information, see the label.**

- Established plantings **ONLY**.
- Apply as a directed spray at the base of the canes early in the spring before the weeds emerge.
- Use lower rates for coarse, sandy soil.
- Use higher rates for clay or higher organic matter soil.
- Keep spray off young shoots.
- **Do NOT** apply if a heavy rainfall is expected.

POST-EMERGENCE GRASS HERBICIDES

- Established plantings **ONLY**.
- For annual grass, use 0.32 L/ha (0.13 L/acre) at the 1-6-leaf stage (2-5 is optimum).
- For volunteer grains, use 0.47 L/ha (0.19 L/acre) at the 1-6-leaf stage (2-5 is optimum).
- For quackgrass, use 1.1 L/ha (0.44 L/acre) up to the 3-leaf stage. Thorough preplant tillage will ensure more uniform quackgrass emergence. Cultivate after 7 days. Use the high rate of MERGE for quackgrass.
- **Do NOT** use flood jet or hollow cone nozzles.

- New and established plantings.
- New Plantings – Apply POST at the 2-6-leaf stage and **Do NOT** make more than two applications per season with a minimum re-treatment interval of 14 days.
- Established Plantings – Apply POST in early spring at prebloom stage to actively growing grasses before tillering or apply in the fall (August to October) and again in the spring. **Do NOT** make more than two applications per season.
- Apply at 0.8 L/ha (0.32 L/acre) at 2-5-leaf stage of volunteer wheat and barley.
- Apply at 1 L/ha (0.4 L/acre) at 2-5-leaf stage of annual grasses (2-4-leaf for foxtails).
- Apply at 2 L/ha (0.8 L/acre) at 3-5-leaf stage of quackgrass and wirestem muhly. Thorough preplant tillage will ensure more uniform quackgrass emergence. Cultivate after 5 days.

POST-EMERGENCE BROADLEAF HERBICIDES

- New and established plantings.
- Use the amine formulation.
- Not all formulations are registered on all crops. See label for specific uses and rates.
- **Do NOT** spray when plants are in bloom.
- Keep spray off new shoots as much as possible.
- Spot spraying at a rate equivalent to 1 kg a.i./ha (0.4 kg a.i./acre) may be necessary to control established dandelions and other broadleaf weeds.

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFEST/MAX. # APPLICATIONS
Trade Name: AIM EC (240 g/L) + AGRAL 90 or AG-SURF or + MERGE Product Rate/ha: 36.5-117 mL/ha + 2.5 L/1,000 L or 1 L/1,000 L Product Rate/acre: 14.6-46.8 mL/acre + 2.5 L/1,000 L or + 1 L/1,000 L Active Ingredient(s): carfentrazone-ethyl (8.8-28.1 g/ha) + non-ionic surfactant (0.25% v/v) or + surfactant/solvent (0.1% v/v)	Group #: 14 PCP #: 28573	REI: 12 hours PHI: 15 days Rainfast: 8 hours Max Applications: 1
NON-SELECTIVE HERBICIDES AND TANK-MIX OPTIONS		
Trade Name: AIM EC (240 g/L) + AGRAL 90 or AG-SURF or + MERGE Product Rate/ha: 148 mL/ha + 2.5 L/1,000 L or + 1 L/1,000 L Product Rate/acre: 60 mL/acre + 2.5 L/1,000 L or + 1 L/1,000 L Active Ingredient(s): carfentrazone-ethyl (36 g/ha) + non-ionic surfactant (0.25% v/v) or + surfactant/solvent (0.1% v/v)	Group #: 14 PCP #: 28573	REI: 12 hours PHI: 30 day Rainfast: 8 hours Max. Applications: 2
Trade Name: IGNITE SN (150 g/L) Product Rate/ha: 6.7 L/ha Product Rate/acre: 2.7 L/acre Active Ingredient(s): glufosinate ammonium (1 kg/ha)	Group #: 10 PCP #: 28532	REI: 24 hours PHI: not stated Rainfast: 4 hours Max. Applications: not stated
STRAWBERRIES		
<p>Use straw mulch that is free of weed seeds to avoid importing weeds into the field. The mulch should be spread between the rows when it is pulled off the plants in the spring to provide additional weed control. Do NOT use straw treated with glyphosate.</p>		
SOIL-APPLIED BROADLEAF HERBICIDE		
Trade Name: REFLEX (240 g/L) + AGRAL 90 Product Rate/ha: 1 L/ha + 1 L/1,000 L Product Rate/acre: 0.4 L/acre + 1 L/1,000 L Active Ingredient(s): fomesafen (0.24 kg/ha) + adjuvant (0.1% v/v)	Group #: 14 PCP #: 24779	REI: 12 hours PHI: 77 days Rainfast: 4 hours Max. Applications: 1
SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES		
Trade Name: AUTHORITY 480 (480 g/L) Product Rate/ha: 219-290 mL/ha Product Rate/acre: 87.6-116.8 mL/acre Active Ingredient(s): sulfentrazone (0.105-0.140 kg/ha)	Group #: 14 PCP #: 29012	REI: 12 hours PHI: 70 days Rainfast: moisture required for activation Max. Applications: 1

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

<p>PRECAUTIONS - For more information, see the label.</p> <ul style="list-style-type: none"> • Apply POST with a hooded sprayer between the rows or between the plastic mulch. • Apply to actively growing weeds up to 10 cm (4 in.) tall. • Injury may result if the spray is allowed to come in contact with the green stem, leaves, bloom or fruit.
<p>NON-SELECTIVE HERBICIDES AND TANK-MIX OPTIONS</p> <ul style="list-style-type: none"> • Use a post-emergence directed application using a banded boom sprayer for primocane control. • Apply to young tissue when primocanes are approximately 12.5 cm (5 in.) in height. • Do NOT allow spray to contact the fruit, foliage or green bark.
<ul style="list-style-type: none"> • Established plantings ONLY. • For use in the production year of raspberries grown in the biennial production system, or in a planting that will be removed after harvest. • Do NOT apply to immature and weak plantings. • Apply when shoots are 10-15 cm (4-6 in.) tall to suppress the emerged flush of primocanes, and control any weeds emerged at time of treatment. • Avoid drift onto green tissue of floricanes.
<p>STRAWBERRIES</p>
<p>SOIL-APPLIED BROADLEAF HERBICIDE</p> <ul style="list-style-type: none"> • Apply to perennial strawberries in the fall or early winter, prior to snowfall. • Not all varieties have been tested for tolerance. First use of REFLEX should be limited to a small area of each variety. • Apply with surfactant if weeds have emerged. • If growing on plastic mulch, application must be made prior to laying plastic. • Do NOT rotate to another crop in the same season. • Do NOT apply REFLEX to any field more often than once every 2 years.
<p>SOIL-APPLIED GRASS AND BROADLEAF HERBICIDES</p> <ul style="list-style-type: none"> • Apply in the spring or fall as a broadcast or banded dormancy treatment to strawberry. • Spring applications may be made during dormancy to established plantings only. • Applications to strawberry plants with emerged growth are not recommended due to leaf burning and possible stand loss. • Best results obtained when the soil is moist at the time of application and followed by at least 1.25 cm (0.5 in.) of rainfall or springer irrigation 2 weeks after application. • Do NOT apply heavy irrigation immediately after application. • Do NOT apply using airblast sprayers or by air or using a mechanically pressurized handgun. • Do NOT harvest within 3 days of application. • Do NOT tank mix with flumioxazin (CHATEAU) or other products containing sulfentrazone.

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFAST/MAX. # APPLICATIONS
Trade Name: CHATEAU WDG (51.1%) Product Rate/ha: 0.21 kg/ha Product Rate/acre: 0.08 kg/acre Active Ingredient(s): flumioxazin (0.11 kg/ha)	Group #: 14 PCP #: 29231	REI: 12 hours PHI: 7 days Rainfast: moisture required for activation Max. Applications: 1
Trade Name: DACTHAL W-75 (75 WP) Product Rate/ha: 9-13.5 kg/ha Product Rate/acre: 3.6-5.4 kg/acre Active Ingredient(s): chlorthal dimethyl (6.75-10.125 kg/ha)	Group #: 3 PCP #: 8963	REI: 12 hours PHI: not stated Rainfast: moisture required for activation Max. Applications: not stated
Trade Name: DEVRINOL 2-XT (240 g/L) Product Rate/ha: 18.75 L/ha Product Rate/acre: 7.5 L/acre Active Ingredient(s): napropamide (4.5 kg/ha)	Group #: 15 PCP #: 31688	REI: 12 hours PHI: not stated Rainfast: moisture required for activation Max. Applications: 1
Trade Name: DUAL II MAGNUM (915 g/L) or KOMODO HERBICIDE (915 g/L) Product Rate/ha: 1.25-1.75 L/ha Product Rate/acre: 0.5-0.7 L/acre Active Ingredient(s): s-metolachlor (1.14-1.60 kg/ha)	Group #: 15 PCP #: 25729 or 33599	REI: 12 hours PHI: 30 days Rainfast: moisture required for activation Max. Applications: 1
Trade Name: GOAL 2XL or BASKET 2XL (240 g/L) Product Rate/ha: 1 L/ha Product Rate/acre: 0.4 L/acre Active Ingredient(s): oxyfluorfen (0.24 kg/ha)	Group #: 14 PCP #: 24913 or 33560	REI: 24 hours PHI: 150 days Rainfast: 3 hours Max. Applications: 1

continued

TABLE 3-3

Herbicide treatment rates for berry crops *continued***PRECAUTIONS - For more information, see the label.**

- Apply **ONCE** per season as a broadcast spray to dormant plants or as a row middle spray using a shielded sprayer to non-dormant plants.
- Apply to coarse and medium textured soils with less than 5% organic matter.
- **Do NOT** apply after fruit set.
- **Do NOT** allow spray drift to come in contact with fruit or foliage.
- **Do NOT** apply through irrigation equipment. Please review label for more detailed instructions.

- Planting year, 2-4 weeks after planting.
- Planting year, late summer/fall (around Labour Day).
- Harvesting year, spring immediately after mulch removal.
- Apply the higher rate to transplants.
- Shallow cultivation to incorporate herbicide into the soil surface may improve weed control.
- **Do NOT** use on muck soils.

- Planting year, 2-4 weeks after planting.
- Planting year, late summer/fall (around Labour Day).
- Planting year, late fall.
- Harvesting year, spring after mulch removal.
- Harvesting year, late summer/fall (around Labour Day).
- Harvesting year, late fall.
- PRE- Apply once per season before weeds emerge or following cultivation.
- Incorporation by rainfall, irrigation or cultivation is essential.
- Where daughter plant establishment is important, (e.g., for plant producers) delay application until the desired number of daughter plants have been established.
- Inhibition of daughter plant roots can occur where soil moisture is low and will be minimized if irrigation is applied shortly after application.

- Planting year, before planting.
- Bearing years: After mulch removal but before weed emergence.
- PPI or PRE - Apply and incorporate, or apply post-transplanting before weeds emerge.
- Initial injury may occur but will be outgrown with no reduction in yield.
- **Do NOT** apply to cultivar Joliette.
- Incorporation is required for nutsedge control. Nutsedge control may be limited during extended periods of dry hot weather following application.

- Planting year, late fall.
- Harvesting year, late fall.
- PRE - Before weed emergence.
- Apply to dormant plants before applying mulch in late fall.
- For control of labeled weeds plus field pansy and wood sorrel (oxalis).

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFAST/MAX. # APPLICATIONS
Trade Name: SINBAR WDG (80 WDG) Product Rate/ha: 275-550 g/ha Product Rate/acre: 110-220 g/acre Active Ingredient(s): terbacil (220-440 g/ha)	Group #: 5 PCP #: 30082	REI: 12 hours PHI: not stated Rainfast: rainfall required for activation Max Applications: 3 - new planting; 2 - harvesting year.
Trade Name: SINBAR WDG (80 WDG) Product Rate/ha: 275 g/ha Product Rate/acre: 110 g/acre Active Ingredient(s): terbacil (220 g/ha)	Group #: 5 PCP #: 30082	REI: 12 hours PHI: not stated Rainfast: rainfall required for activation Max Applications: 3 - new planting; 2 - harvesting year.
Trade Name: SINBAR WDG (80 WDG) Product Rate/ha: 850-1,000 g/ha Product Rate/acre: 340-400 g/acre Active Ingredient(s): terbacil (680-800 g/ha)	Group #: 5 PCP #: 30082	REI: 12 hours PHI: not stated Rainfast: rainfall required for activation Max Applications: 3 - new planting; 2 - harvesting year.
Trade Name: SINBAR WDG (80 WDG) Product Rate/ha: 275-350 g/ha Product Rate/acre: 110-140 g/acre Active Ingredient(s): terbacil (220-280 g/ha)	Group #: 5 PCP #: 30082	REI: 12 hours PHI: not stated Rainfast: rainfall required for activation Max Applications: 3 - new planting; 2 - harvesting year.

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued***PRECAUTIONS - For more information, see the label.****FIRST (PLANTING) YEAR: 4-6 WEEKS AFTER PLANTING**

- PRE - Apply before weeds emerge or to very small weeds.
- Apply when mother plants are well established but before runnering becomes extensive and new runner plants are rooting.
- Apply in at least 300 L water/ha (120 L water/acre).
- Use lower rate on sandy soils low in organic matter.
- Use lower rate on sensitive varieties such as, Annapolis, Cavendish, Kent and Mira or varieties which have not been adequately tested for SINBAR sensitivity since they may be severely injured.
- **Do NOT** apply to weak or diseased plants of any variety.
- **Do NOT** overlap spray swaths. Calibrate sprayer accurately.
- Shallow cultivation can be done to train runners and control escaped weeds without destroying the effectiveness of SINBAR.
- It is very important to wash SINBAR off the plants with rain or irrigation immediately following application to avoid injury. If SINBAR is not washed off avoid applying when temperatures are above 25°C.
- **Do NOT** replant treated areas to any crop within 2 years after the last application as injury to subsequent crops may occur. To reduce replanting injury to subsequent crops, cultivate or plough soil thoroughly and conduct a field bioassay.

FIRST (PLANTING) YEAR: LATE SUMMER/FALL APPLICATION

- PRE - Important timing for fall germinating weeds. Apply before weeds emerge or to very small weeds. If the low rate was used previously, this timing can be used as a booster application to maintain weed control until late fall.
- See other precautions for SINBAR above.

FIRST (PLANTING) YEAR: LATE FALL APPLICATION

- PRE - Apply to a weed-free soil surface just before mulching.
- To extend weed control through harvest of the following year, apply 850-1,000 g/ha (340-400 g/acre) just before late fall mulching.
- In areas of periodic winter injury, reduce late fall application to 550-700 g/ha (220-280 g/acre).
- Maximum of 3 applications of SINBAR throughout the planting year.
- See other precautions for SINBAR above.

HARVESTING YEAR: SPRING AFTER MULCH REMOVAL

- PRE - Apply to weed-free soil just after mulch is removed to supplement or replace the late fall application.
- Plants that have had weak growth under the mulch are subject to serious injury, wait 5-7 days until plants recover before applying SINBAR.
- Use low rate where SINBAR was used in the fall.
- Use lower rate on sandy soils low in organic matter.
- Use lower rate on sensitive varieties such as Annapolis, Cavendish, Kent and Mira or varieties which have not been adequately tested for SINBAR sensitivity since they may be severely injured.
- **Do NOT** apply to weak or diseased plants of any variety.
- **Do NOT** overlap spray swaths. Calibrate sprayer accurately.

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFEST/MAX. # APPLICATIONS
Trade Name: SINBAR WDG (80 WDG) Product Rate/ha: 700-850 g/ha Product Rate/acre: 280-340 g/acre Active Ingredient(s): terbacil (560-680 g/ha)	Group #: 5 PCP #: 30082	REI: 12 hours PHI: not stated Rainfast: rainfall required for activation Max Applications: 3 - new planting; 2 - harvesting year.
Trade Name: SINBAR WDG (80 WDG) Product Rate/ha: 700-850 g/ha Product Rate/acre: 280-340 g/acre Active Ingredient(s): terbacil (560-680 g/ha)	Group #: 5 PCP #: 30082	REI: 12 hours PHI: not stated Rainfast: rainfall required for activation Max Applications: 3 - new planting; 2 - harvesting year.
Trade Name: TREFLAN EC (480 g/L) or RIVAL EC (500 g/L) or BONANZA 480 (480 g/L) Product Rate/ha: 1.2-2.4 L/ha Product Rate/acre: 0.48-0.96 L/acre Active Ingredient(s): trifluralin (0.6-1.15 kg/ha)	Group #: 3 PCP #: 23933 or 18612 or 28289	REI: 12 hours PHI: not stated Rainfast: not stated Max. Applications: 1
POST-EMERGENCE GRASS HERBICIDES		
Trade Name: POAST ULTRA (450 g/L) + MERGE Product Rate/ha: 0.32-1.1 L/ha + 0.25-2 L/ha Product Rate/acre: 0.13-0.44 L/acre + 0.1-0.8 L/acre Active Ingredient(s): sethoxydim (0.14-0.50 kg/ha) + surfactant/solvent (0.25-2 L/ha)	Group #: 1 PCP #: 24835	REI: 12 hours PHI: 25 days Rainfast: 1 hour Max. Applications: not stated

continued

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

PRECAUTIONS - For more information, see the label.

HARVESTING YEAR: RENOVATION

- PRE - Apply after mowing before weeds emerge or to very small weeds.
- Apply in at least 300 L water/ha (120 L water/acre).
- If, 2,4-D was used prior to mowing, delay SINBAR application for at least 2 weeks.
- **Do NOT** apply within 14 days of VENTURE L.
- See other precautions above.

HARVESTING YEAR: LATE FALL

- PRE - Apply to a weed-free soil surface just before mulching.
- Apply in at least 300 L water/ha (120 L water/acre).
- To extend weed control through harvest of the following year, apply this application 700-850 g/ha (280-340 g/acre) just before mulching in the late fall. In areas of periodic winter injury, reduce this fall application to 550-700 g/ha (220-280 g/acre).
- Use the low rate where it is planned to use SINBAR again in the spring.
- Make a maximum of 2 applications per year following rototilling or renovation.
- See other precautions above.

• Planting year **ONLY**.

- PPI - Apply to weed-free soil and incorporate immediately in two directions.
- May be applied and incorporated 1 day-3 weeks before planting.
- May delay establishment under stressful conditions.

POST-EMERGENCE GRASS HERBICIDES

- Planting year, 2-6 weeks after planting.
- Planting year, late summer/fall (around Labour Day).
- Harvesting year, spring after mulch removal.
- Harvesting year, renovation.
- Harvesting year, late summer/fall (around Labour Day).
- For annual grass, use 0.32 L/ha (0.13 L/acre) at the 1-6-leaf stage.
- For volunteer grains, use 0.47 L/ha (0.19 L/acre) at the 1-6-leaf stage.
- For quackgrass, use 1.1 L/ha (0.44 L/acre) up to the 3-leaf stage. Thorough preplant tillage will ensure more uniform quackgrass emergence. Cultivate after 7 days. Use the high rate of MERGE for quackgrass.
- **Do NOT** use flood jet or hollow cone nozzles.
- Wait at least 4 days after application before applying SINBAR.

continued

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFEST/MAX. # APPLICATIONS
Trade Name: VENTURE L (125 g/L) Product Rate/ha: 0.6-2 L/ha Product Rate/acre: 0.24-0.80 L/acre Active Ingredient(s): fluazifop-p-butyl (0.075-0.25 kg/ha)	Group #: 1 PCP #: 21209	REI: 12 hours PHI: 30 days Rainfast: 2 hours Max. Applications: 1
POST-EMERGENCE BROADLEAF HERBICIDES		
Trade Name: 2,4-D (470 g/L), 2,4-D (564 g/L), 2,4-D (660 g/L) Product Rate/ha: 1.17 L/ha, 0.95 L/ha, 0.83 L/ha Product Rate/acre: 0.47 L/acre, 0.38 L/acre, 0.34 L/acre Active Ingredient(s): 2,4-D (0.55 kg/ha)	Group #: 4 PCP #: see label	REI: 12 hours PHI: not stated Rainfast: 1 day Max. Applications: 1
Trade Name: 2,4-D (470 g/L), 2,4-D (564 g/L), 2,4-D (660 g/L) Product Rate/ha: 2.2 L/ha, 1.7 L/ha, 1.57 L/ha Product Rate/acre: 0.88 L/acre, 0.68 L/acre, 0.63 L/acre Active Ingredient(s): 2,4-D (1.034 kg/ha)	Group #: 4 PCP #: see label	REI: 12 hours PHI: not stated Rainfast: 1 day Max. Applications: 1
Trade Name: AIM EC (240 g/L) + AGRAL 90 or AG-SURF or + MERGE Product Rate/ha: 36.5-117 mL/ha + 2.5 L/1,000 L or 1 L/1,000 L Product Rate/acre: 14.6-46.8 mL/acre + 2.5 L/1,000 L or + 1 L/1,000 L Active Ingredient(s): carfentrazone-ethyl (8.8-28.1 g/ha) + non-ionic surfactant (0.25% v/v) or + surfactant/solvent (0.1% v/v)	Group #: 14 PCP #: 28573	REI: 12 hours PHI: 1 day Rainfast: 8 hours Max. Applications: 1
Trade Name: BETAMIX B [(1:1) 206 g/L] Product Rate/ha: 1.15-1.75 L/ha Product Rate/acre: 0.47-0.71 L/acre Active Ingredient(s): phenmedipham/desmedipham (0.18-0.28 kg/ha)	Group #: 5 PCP #: 28650	REI: 24 hours PHI: planting year only Rainfast: 6 hours Max. Applications: 3

continued

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

PRECAUTIONS - For more information, see the label.
<ul style="list-style-type: none">• Treat in the spring before bloom or after renovation.• Apply at 0.8 L/ha (0.32 L/acre) at 2-5 leaf stage of volunteer wheat and barley.• Apply at 1 L/ha (0.4 L/acre) at 2-5-leaf stage of annual grasses (2-4-leaf for foxtails).• Apply at 2 L/ha (0.8 L/acre) at 3-5 leaf stage of quackgrass and wirestem muhly.• Wait at least 14 days after application before applying SINBAR.
POST-EMERGENCE BROADLEAF HERBICIDES
<ul style="list-style-type: none">• Planting year, 2-6 weeks after planting.• Use the amine formulation.• Use low pressure and a coarse spray to minimize risk of spray drift to susceptible crops.• Do NOT use while early runners are rooting.• Do NOT use between mid-August and fall dormancy when flower buds are developing for next year's crop.• Not all formulations are registered on all crops. See label for specific uses and rates.
<ul style="list-style-type: none">• Harvesting year, renovation.• Apply after harvest but before mowing to control dandelions and other broadleaf perennials. Delay mowing for a few days after application.• Use the amine formulation.• Do NOT apply 2,4-D between mid August and fall dormancy when strawberries are initiating flower buds.• Some cultivars like Veestar are more sensitive to 2,4-D.• Not all formulations are registered on all crops. See label for specific uses and rates.
<ul style="list-style-type: none">• Planting year, 2-4 weeks after planting.• Apply POST with a hooded sprayer between the rows or between the plastic mulch.• Apply to actively growing weeds up to 10 cm (4 in.) tall.• Injury may result if the spray is allowed to come in contact with the green stem, leaves, bloom or fruit.
<ul style="list-style-type: none">• May be applied to June-bearing strawberry varieties ONLY in the year of planting as a post-transplant application.• The first application must be applied when the earliest weeds have reached the cotyledon stage. Repeat applications at 5-7-day intervals following the first application or when another flush of weeds germinates.

continued

TABLE 3-3**Herbicide treatment rates for berry crops** *continued*

TRADE NAME/PRODUCT RATE/ACTIVE INGREDIENT(S)	GROUP/PCP #	REI/PHI/RAINFEST/MAX. # APPLICATIONS
Trade Name: LONTREL XC (600 g/L) or PYRALID HERBICIDE (360 g/L) Product Rate/ha: 0.35-0.5 L/ha or 0.672-1 L/ha Product Rate/acre: 0.14-0.2 L/acre or 0.27-0.40 L/acre Active Ingredient(s): clopyralid (0.2-0.3 or 0.24-0.36 kg/ha)	Group #: 4 PCP #: 32795 or 32265	REI: 12 hours PHI: 200 days Rainfast: 4 hours Max. Applications: 1
Trade Name: REFLEX (240 g/L) + AGRAL 90 Product Rate/ha: 1 L/ha + 1 L/1,000 L Product Rate/acre: 0.4 L/acre + 1 L/1,000 L Active Ingredient(s): fomesafen (0.24 kg/ha) + adjuvant (0.1% v/v)	Group #: 14 PCP #: 24779	REI: 12 hours PHI: 77 days Rainfast: 4 hours Max. Applications: 1
NON-SELECTIVE HERBICIDES		
Trade Name: GLYPHOSATE (360 g/L), GLYPHOSATE (480 g/L), GLYPHOSATE (500 g/L), GLYPHOSATE (540 g/L) Product Rate/ha: 1 L/2 L, 0.75 L/2 L, 0.72 L/2 L, 0.67 L/2L of water Product Rate/acre: 1 L/2 L, 0.75 L/2 L, 0.72 L/2 L, 0.67 L/2 L of water Active Ingredient(s): glyphosate (0.36 kg/2 L)	Group #: 9 PCP #: see label	REI: 12 hours PHI: 30 days Rainfast: 1 hour Max. Applications: 1
Trade Name: GLYPHOSATE (360 g/L), GLYPHOSATE (480 g/L), GLYPHOSATE (500 g/L), GLYPHOSATE (540 g/L) Product Rate/ha: 1-2 L/100 L, 0.75-1.5 L/100 L, 0.72-1.44 L/100 L, 0.67-1.34 L/100 L of water Product Rate/acre: 1-2 L/100 L, 0.75-1.5 L/100 L, 0.72-1.44 L/100 L, 0.67-1.34 L/100 L of water Active Ingredient(s): glyphosate (0.36-0.72 kg/100 L)	Group #: 9 PCP #: see label	REI: 12 hours PHI: 30 days Rainfast: 1 hour Max. Applications: 1
Trade Name: IGNITE SN (150 g/L) Product Rate/ha: 2.7-5.0 L/ha Product Rate/acre: 1.09-2.0 L/acre Active Ingredient(s): glufosinate ammonium (0.405-0.75 kg/ha)	Group #: 10 PCP #: 28532	REI: 12 hours PHI: 1 day Rainfast: 4 hours Max Applications: 2

TABLE 3-3
Herbicide treatment rates for berry crops *continued*

PRECAUTIONS - For more information, see the label.

- Harvesting year **ONLY**, renovation.
- To control tufted vetch, Canada thistle, sheep sorrel and ox-eye daisy.
- Apply immediately after harvest at renovation, 7-10 days before mowing.
- **Do NOT** apply after mid-August because of its possible effects on runner development and flower bud formation.
- Early cultivars like Veestar or Annapolis may be more susceptible to injury.
- Certain environmental stresses such as drought, flooding or severe overwintering conditions may increase the risk of injury.
- Apply to perennial strawberries in the fall or early winter, prior to snowfall.
- Not all varieties have been tested for tolerance. First use of REFLEX should be limited to a small area of each variety.
- Apply with surfactant if weeds have emerged.
- If growing on plastic mulch, application must be made prior to laying plastic.
- **Do NOT** rotate to another crop in the same season.
- **Do NOT** apply REFLEX to any field more often than once every 2 years.

NON-SELECTIVE HERBICIDES

- Planting year, 2-6 weeks after planting.
- Planting year, late summer/fall (around Labour Day).
- Harvesting year, spring after mulch removal.
- Harvesting year, renovation.
- Harvesting year, late summer/fall (around Labour Day).
- Apply with a rope wick or other similar device when weeds are 15 cm (6 in.) above the crop.
- Avoid contact with the strawberry plants.
- **Do NOT** apply when weeds are wet.
- Not all formulations are registered on all crops. See label for specific uses and rates.
- Planting year, 2-6 weeks after planting.
- Planting year, late summer/fall (around Labour Day).
- Harvesting year, spring after mulch removal.
- Harvesting year, renovation.
- Harvesting year, late summer/fall (around Labour Day).
- Use hand held sprayers as a spot treatment if wiper equipment is not available.
- Avoid contact with strawberry plant, crop in the treated area will be killed.
- Not all formulations are registered on all crops. See label for specific uses and rates.
- **Planting year, fall, spring or in-season.**
- **Harvesting year, fall, spring or in-season.**
- **IGNITE SN Herbicide may be applied as a banded application to row middles ONLY, using a hooded or shielded sprayer. The rates listed are for broadcast application. Adjust the broadcast application rate per hectare proportional to the width of the band applied.**
- **Avoid contact of spray, drift or mist with strawberry plants as serious crop injury may result.**
- **Repeat treatments may be necessary to control new germination of annual weeds.**
- **Do NOT apply more than 6.7 L/ha (2.7 L/acre) total product in one season.**

