

2020 Guide to Crop Protection

Spring Update

Herbicides

Corrections and changes:

Blackhawk (page 122) PCP#32111. There is no supported tank mix with Goldwing before chickpeas, lentils, peas.

Brazen II (Pinoxaden page 317): *Brazen II* (PCP#33551) + *Cohere Adjuvant* (PCP#33552) is the newly registered formulation to replace *Brazen*. Container size:

- *Brazen II* – 9.7 L
- *Cohere Adjuvant* – 11.3 L

Express SG (Tribenuron page 354): PCP#282622.

- *Express SG* at 6 g per acre plus glyphosate will control common chickweed (up to 8 leaf).

Focus (page 213): PCP#322192.

- The residual application rate of 113 mL/acre is recommended for soil types with 1 - 3% organic matter, and 136 mL/acre is recommended for greater than 3% - 7% organic matter.
- Re-cropping interval: Barley, canola, mustard, oats and durum wheat may be seeded 12 months following application. Sugar beets may be seeded 24 months following application.
- Focus herbicide may be applied with glyphosate in the fall (for all registered spring pre-seed crops) to control emerged winter annuals, as well as provide early season control of wild oats the following spring. Do not mechanically incorporate in the fall or spring. When using Focus herbicide in the fall, use a residual treatment rate for the appropriate soil type and organic matter.

Heat LQ (Heat Brands page 242): PCP#31468. The pre-seed or pre-emergent rate of application prior to soybean is 21.4 – 29.5 mL/ac. Do not use rates higher than 29.5 mL/ac or injury could result. See crop specific section of the Heat LQ herbicide label for additional details. Some soybeans cultivars may be more sensitive to saflufenacil and injury might occur.

Liberty 150SN (Glufosinate 150SN page 220):

PCP#30922. The seasonal maximum rate of application of *Liberty 150SN* allows for up to 4.86 L/ac per season (up to a maximum of 3 applications at 1.61 L/ac rate).

Navius Flex (page 297):

Additions to

- **Weeds controlled at 68 g per acre:**
 - wild parsnip, wild chervil, poison ivy
- **Weeds controlled at 135 g per acre:**
 - dog strangling vine

Water volume: Minimum spray volume for ground application is 80 L per acre.

Travallas (page 379): PCP#31685

- Re-cropping interval: Lentil may be sown 10 months after application.
- Scentless chamomile (up to 10 cm) is controlled with the application rate of 0.2 L per acre.

Select (Clethodim page 141): PCP#22625. *Select* may be tank-mixed with *Liberty 150 SN* or *Interline* herbicide for control of certain broadleaf and grass weeds in Glufosinate Ammonium tolerant canola varieties in one spray operation. Follow all precautions, limitations and timing recommendations on the *Liberty 150 SN* or *Interline* herbicide label.

Additions:

Akito (new product): PCP#33657 is a selective herbicide for post-emergent control of annual and perennial broadleaved weeds in wheat, barley and oats. See the mock-up page below for further details.

Clethodim (page 141)

- IPCO (*GraminX*- PCP#33659; *X-Surf Adjuvant* - PCP#33660):
- Federated Cooperatives (*Co-Op Patron II* - PCP#33661; *Co-Op Patron II Adjuvant* - PCP#33662)
 - **Formulation:** 240 g/L clethodim formulated as an emulsifiable concentrate
 - **Container size** – 3 L clethodim + 9 L adjuvant

Refer to Page 141 of the 2020 Guide for more information and the product label for complete instructions.

Elegant 10 EC (Quizalofop page 332): PCP#33617 is a selective postemergence herbicide for the control of annual and perennial grasses in flax (including low linolenic acid varieties), canola, sunflowers, soybeans (including varieties designated “STS”), seed alfalfa, lentils, peas (field and processing) and seedling legumes for seed production.

Rates: range from 0.15L to a maximum of 0.3 L per acre according to weed stage and target weeds. Refer to Page 332 of the 2020 Guide for more information and the product label for complete instructions.

Esplanade SC (new product): PCP#31333 is a pre-emergent herbicide for the control of annual grasses and broadleaf weeds in non-residential non-crop areas such as: Railroad and Rail Yards, Managed Roadsides, Fence Rows, Utilities, Hardscapes, Industrial, Military Bases, Municipal and Government Sites, and Around Farm Buildings. See the mock-up page below for further details.

Flora (Florasulam page 194): PCP#33610 is registered as a postemergent herbicide for the control of annual broadleaf weeds including cleavers, wild buckwheat and chickweed in spring wheat (including durum), winter wheat, spring barley, and oats (tank mixes only).

Rate: 40 mL per acre

Imazamox (page 252):

- Sharda CropChem Canada (*Next 70*): PCP#33620 - 70% imazamox as a water dispersible granule.
- AgraCity (*Mpower Samurai*): PCP#33033 - imazamox as a water dispersible granule.
 - Container size - 4 x 117.5 g water soluble bags

Refer to Page 252 of the 2020 Guide for more information and the product label for complete instructions.

NOTE: This publication is only a guide. Always refer to the product label for application details and precautions. If information in this publication conflicts with the label use label directions.

Imazamox + Bentazon prepackaged tankmixes:

- *MPOWER Boa Pro*
- *Python*

See the mock-up pages below for further details.

Imazamox + Bentazon + Quizalofop prepackaged tankmix:

- *MPOWER Anaconda*

See the mock-up pages below for further details

Imazamox + Clethodim prepackaged tankmix:

- *MPOWER Samurai Master*

See the mock-up pages below for further details

Komodo (s-metolachlor page 175): PCP#33599 is a pre-plant incorporated or pre-emergent (if irrigated within 10 days) herbicide for use in corn, dry beans, potatoes, soybeans and sweet white lupins.

Rates: range from 0.47 L to 0.73 L per acre according to weed density and target weeds. Refer to Page 175 of the 2020 Guide for more information and the product label for complete instructions.

Manipulator 620 (page 275): PCP#31462 is now registered for use in spring, durum and winter wheat, barley, and oats.

Prospect (new product): PCP#33635 is a selective herbicide for post-emergent control of annual broadleaved weeds prior to canola, mustard, soybeans, field pease, field corn, wheat, and barley. See the mock-up page below for further details.

Zidua SC (page 416): PCP#32542.

- *Zidua SC* may be applied as an early-post emergence treatment to soybeans up to and including the third trifoliolate leaf stage and prior to flowering at a rate of 73 mL per acre. If a sequential application program of *Zidua SC* is used (eg. pre-emergent application followed by post-emergent application), the maximum seasonal rate of *Zidua SC* that may be applied is 101 mL per acre on coarse soils and 200 mL per acre on medium to fine soils.
 - Registered tankmixes:
 - Herbicides: *Heat LQ, Engenia*
- ZIDUA SC can be applied as a pre-plant surface or pre-emergence treatment at 49 to 97 mL per acre to sunflowers. Do not apply ZIDUA SC if sunflowers have emerged.

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Akito	Herbicide Group 2 - florasulam 4 - fluroxypyr, clopyralid <i>(Refer to page 45)</i>
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Company:

UPL AgroSolutions Canada (PCP#33657)

Formulation:

2.5 g/L florasulam, 100 g/L fluroxypyr and 80 g/L clopyralid formulated as an emulsifiable concentrate.

- Container size: 9.71 L

Crops and Staging:

Wheat (spring, durum and winter) and barley: 3 leaf to just prior to flag leaf stage

Oats: 3 leaf to 6 leaf stage

When tank mixing, always check the tank mix partner recommendations for additional staging restrictions.

Weeds, Rates and Staging:

At 405 mL per acre:

- | | | |
|---------------------------------------|------------------------------|-------------------------|
| o Canada thistle* | o Kochia (2-8 leaf) | o Perennial sow-thistle |
| o Chickweed | o Narrow-leaved hawk’s-beard | o Volunteer flax |
| o Cleavers | (suppression) | o Volunteer canola |
| o Dandelion (up to 30 cm in diameter) | o Scentless chamomile | o Wild buckwheat |
| | o Shepherd’s purse | |

*season long control with some regrowth in the fall. Apply from 10 cm to pre-bud stage.

Maximum ONE APPLICATION per year.

Application Information:

- **Water Volume:**
 - o **Ground:** Minimum of 40 L per acre.
- **Nozzles and Pressure:** 30 to 40 psi (200 to 275 kPa). Use a combination of nozzles and pressure designed to deliver thorough, even coverage with **ASABE S572.1coarse classification** droplets by ground.

How it Works:

Active ingredient	Timing	Target	Movement	Spectrum	WSSA Group
florasulam	POST (foliar)	ALS Amino Acid synthesis inhibitor	Toward growth areas (Symplast)	Broadleaf only	2
clopyralid, fluroxypyr	POST (foliar)	Synthetic Auxin	Throughout the plant (Symplast)	Broadleaf only	4

Effects of Growing Conditions:

When weeds are stressed due to drought, flooding or prolonged hot or cool temperatures (8°C or less), control can be reduced or delayed since weeds are not actively growing. Weed escapes may occur under prolonged stress conditions or low fertility. Do not make applications to weeds stressed longer than 20 days due to lack of moisture as unsatisfactory control can result.

Tank Mixes:

Tank mix partners applied at all label rates and include recommended adjuvants unless otherwise noted.

Herbicides:

- MCPA ester (0.23 to 0.43 L/acre – 600g ae/L form)

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- 2,4-D Ester (0.21 to 0.52 L per acre– 660 g ae/L form)
- *Simplicity GoDRI*
- *Axial*
- *Traxos*

Fungicides: None registered.

Insecticides: None registered.

Fertilizers: None registered.

UPL AgroSolutions Canada also supports the following mix that is not on the Akito label. Apply mixes according to the most restrictive use limitations for either product:

- **Herbicides:** *Everest 3.0*

Adding ingredients in the correct order is critical for optimum performance. Check labels of both products to be mixed for directions. General guidelines can be found on page 11.

Restrictions:

Rainfall: No rainfast period is specified on the label, rainfall within 6 hours may reduce control.

Re-Entry Interval: DO NOT enter treated fields for 12 hours.

Pre-harvest Interval: Do not harvest the treated crop within 60 days after application.

Grazing: Do not cut the treated crop for hay or graze treated crop within 7 days after application.

Re-cropping Interval: Wheat, barley, oats and rye (not under-seeded to forage legumes, clover or alfalfa), canola, flax, mustard, field peas can be seeded the following year, or fields can be summerfallowed. Note: Do not seed field peas for at least 10 months following treatment. Very dry soil conditions following application can result in a risk of injury to field peas grown in rotation. If severe drought conditions are experienced during the months of June to August inclusive in the year of application, delay seeding field peas an additional 12 months (total 22 months following application). Contact UPL for more information before seeding field peas following drought conditions in the previous year.

Aerial Application: DO NOT apply by air.

Storage: Store in original closed container in a well-ventilated room away from food, feed and fertilizer.

Buffer Zones: Avoid spraying in situations where drift may occur. DO NOT apply during periods of dead calm.

Method of Application	Buffer Zones (metres [†]) Required for the Protection of:		
	Freshwater Habitat of Depths:		Terrestrial habitat:
	Less than 1 m	Greater than 1 m	
Ground*	1	0	1

See page 36 for an explanation of the different habitats.

* Buffer zones can be reduced by 70% when using shrouds and by 30% when using cones mounted less than 12 inches from the crop canopy.

† Distance measured as metres from the downwind edge of the spray boom to sensitive habitat.

Spray when the wind velocity is 16 km/hr or less.

Tank Cleaning: Refer to 'Methods A and B' in the general section on sprayer cleaning on page 12 and 13.

Hazard Rating:

Danger– Eye and Skin Irritant

Esplanade SC	Herbicide Group 29 - indaziflam <i>(Refer to page 45)</i>
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Company:

Bayer CropScience (PCP#31333)

Formulation:

200 g/L indaziflam formulated as a suspension.

- Container size: 4 x 1L, 2 x 10L

NOTE: This publication is only a guide. Always refer to the product label for application details and precautions. If information in this publication conflicts with the label use label directions.

Crops and Staging:

Non-crop areas (i.e. Rights of Way, roadsides, industrial sites, fence lines and other non-crop areas).

Weeds, Rates and Staging:

At 152 mL per acre:

- | | | |
|----------------------------------|---|----------------------|
| o Annual sowthistle | o Kochia* | o Shepherd's-purse |
| o Barnyard grass | o Lamb's-quarters | o Stinkgrass |
| o Bittercress, (including Hairy) | o Little mallow | o Stork's bill |
| o Black medic | o Morning glory | o Sunflower, Common |
| o Chickweed, mouse-ear | o Mustard (wild, black) | o Sweetclover, White |
| o Corn speedwell | o Nightshade (American black, hairy) | o Tufted Lovegrass |
| o Common groundsel | o Pigweed (prostrate, redroot*) | o Vetch, Purple |
| o Cudweed | o Prostrate knotweed | o Volunteer rye |
| o Curled dock | o Prickly lettuce* | o White clover* |
| o Downy brome | o Purslane | o Wild Oats |
| o Foxtail (giant, green, yellow) | o Ryegrass (annual, italian, perennial) | o Wild Proso Millet |
| o Field bindweed | | o Yellow starthistle |
| o Henbit | | o Yellow woodsorrel |

*Suppression.

Maximum ONE APPLICATION per year.

Application Information:

- **Water Volume:**
 - o **Ground:** Minimum of 40 L per acre up to 380 L per acre. See the label for details.
- **Nozzles and Pressure:** Use a combination of nozzles and pressure designed to deliver thorough, even coverage with ASABE coarse droplets.

How it Works:

Active ingredient	Timing	Target	Movement	Spectrum	WSSA Group
indaziflam	PRE	Inhibition of cellulose synthesis		Annual broadleaves and grasses	29

Effects of Growing Conditions:

Esplanade SC controls weeds by reducing the emergence of seedlings through inhibition of cellulose biosynthesis (CB Inhibitor). Necrosis or yellowing may also be observed if the herbicide is applied to herbaceous tissue such as leaves and green stems of susceptible plants. *Esplanade SC* treatments are most effective in controlling weeds when adequate moisture is present and the application is followed by rain prior to weed seed germination. Weed seeds and seedlings must come into contact with *Esplanade SC* prior to emergence to be controlled. If sufficient moisture is present, some weeds may germinate and emerge from below the treated layer. Excessive plant debris present on the soil surface at time of application may prevent uniform product distribution reaching the soil and reduce weed control. Performance may be improved by removing excessive debris prior to product application. Avoid disturbing treated soil after application of *Esplanade SC*. If treated soil is moved during tillage practices or other manner in such a way that the herbicide barrier is no longer intact, weeds may emerge from areas where treated soil has been disturbed.

Tank Mixes:

Tank mix partners applied at all label rates and include recommended adjuvants unless otherwise noted.

Herbicides:

- Glyphosate
- Milestone
- Navius

Adding ingredients in the correct order is critical for optimum performance. Check labels of both products to be mixed for directions. General guidelines can be found on page 11.

NOTE: This publication is only a guide. Always refer to the product label for application details and precautions. If information in this publication conflicts with the label use label directions.

Restrictions:**Rainfall:** No rainfall period is specified on the label.**Re-Entry Interval:** DO NOT enter treated areas until sprays have dried.**Aerial Application:** DO NOT apply by air.**Storage:** Store in original closed container in a well-ventilated room away from food, feed and fertilizer.**Buffer Zones:** Avoid spraying in situations where drift may occur. DO NOT apply during periods of dead calm.

Method of Application	Buffer Zones (metres [†]) Required for the Protection of:		
	Freshwater Habitat of Depths:		Terrestrial habitat:
	Less than 1 m	Greater than 1 m	
Ground*	1	0	15

See page 36 for an explanation of the different habitats.

* Buffer zones can be reduced by 70% when using shrouds and by 30% when using cones mounted less than 12 inches from the crop canopy.

† Distance measured as metres from the downwind edge of the spray boom to sensitive habitat.

Spray when the wind velocity is 16 km/hr or less.

Tank Cleaning: Refer to 'Method C' in the general section on sprayer cleaning on page 12 and 13.

MPOWER Anaconda	Herbicide Group 1 - quizalofop 2 - imazamox 6 - bentazon <i>(Refer to page 45)</i>
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This product is a prepackaged tank mix of MPower Samurai (see imazamox - page 252), MPower Boa (see bentazon - page 117) and MPower Quiz (see quizalofop - page 333). Information listed is restricted to Crop, Weeds, Rates and Tank mixes. For other detailed restrictions and other general information on the component products see the product pages listed above and select the most restrictive.

Company:

AgraCity

Formulation:

The MPOWER Anaconda package contains the following components:

MPOWER Samurai (PCP# 33033): 70% imazamox as a water dispersible granule.

- Container Size - 4 x 117.5 g water soluble bags, 8 x 470 g
- plus-

MPOWER Boa (PCP#33011): 480 g/L bentazon formulated as a solution.

- Container Size - 2 x 7.25 L, 116 L
- plus-

MPOWER Quiz (PCP#33481): 96 g/L quizalofop-P-ethyl formulated as an emusifiable concentrate.

- Container Size - 6 L, 3 x (2 x 8L case) (adjuvant purchased separately)

Requires the addition of:

28% UAN (28-0-0) at 0.81 L/ac – sold separately.

Assassin at 0.25% v/v or 5L per 1000L of water.

Crops and Staging:

Field pea: 3 – 6 above ground nodes.

Weeds, Rates and Staging:

NOTE: This publication is only a guide. Always refer to the product label for application details and precautions. If information in this publication conflicts with the label use label directions.

MPOWER Samurai at 11.7 grams per acre plus MPOWER Boa at 362 mL per acre plus MPOWER Quiz at 150 mL per acre (with the required addition of 28% UAN and Assassin at 0.25% v/v):

Grasses – 2 leaf to early tiller.

- o Barnyard grass
- o Foxtail (green, yellow)
- o Persian darnel
- o Proso millet
- o Volunteer cereals (except CLEARFIELD wheat)
- o Volunteer corn
- o Wild oats

Broadleaf weeds – 1 to 4 leaf stage.

- o Cleavers*
- o Cow cockle
- o Green smartweed
- o Hemp-nettle*
- o Kochia*
- o Lamb's-quarters
- o Redroot pigweed
- o Round-leaved mallow*
- o Russian thistle
- o Shepherd's-purse
- o Stinkweed
- o Sow-thistle (annual, perennial)*
- o Volunteer canola
- o Volunteer lentils
- o Wild buckwheat*
- o Wild mustard

***Suppression only**

Refer to the product label for complete mixing instructions. A general guide to mixing can be found on page 11.

Tank Mixes:

None registered.

MPOWER Boa Pro	Herbicide Group 2 - imazamox 6 - bentazon <i>(Refer to page 45)</i>
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This product is a prepackaged tank mix of MPower Samurai (see imazamox - page 252) and MPower Boa (see bentazon - page 117). Information listed is restricted to Crop, Weeds, Rates and Tank mixes. For other detailed restrictions and other general information on the component products see the product pages listed above and select the most restrictive.

Company:

AgraCity

Formulation:

The MPOWER Boa Pro package contains the following two components:

MPOWER Samurai (PCP# 33033): 70% imazamox as a water dispersible granule.

- Container Size - 4 x 117.5 g water soluble bags, 8 x 470 g
- plus-

MPOWER Boa (PCP#33011): 480 g/L bentazon formulated as a solution.

- Container Size - 2 x 7.25 L, 116 L

Requires the addition of:

28% UAN (28-0-0) at 0.81 L/ac – sold separately.

Crops and Staging:

Field pea: 3-6 above ground nodes.

Weeds, Rates and Staging:

MPOWER Samurai at 11.7 grams per acre plus MPOWER Boa at 362 mL per acre (with the required addition of 28% UAN):

Grasses – 1 – 4 main leaves.

- o Barnyard grass
- o Green foxtail
- o Japanese brome*
- o Volunteer cereals (except CLEARFIELD wheat)
- o Wild oats

Broadleaf weeds – cotyledon to 4 leaf stage.

NOTE: This publication is only a guide. Always refer to the product label for application details and precautions. If information in this publication conflicts with the label use label directions.

- o Cow cockle
- o Green smartweed
- o Kochia*
- o Lamb's-quarters
- o Redroot pigweed
- o Round-leaved mallow*
- o Russian thistle
- o Shepherd's-purse
- o Stinkweed
- o Volunteer canola
- o Wild buckwheat*
- o Wild mustard

***Suppression only**

Tank Mixes:

AgaCity supports the following mixes that are not on the *MPOWER Boa Pro* label. Apply mixes according to the most restrictive use limitations for either product:

- **Herbicides:** *MPOWER Independence*, *MPOWER Quiz*

Adding ingredients in the correct order is critical for optimum performance. Check labels of both products to be mixed for directions. General guidelines can be found on page 11.

MPOWER Samurai Master	Herbicide Group 1 - clethodim 2 - imazamox <i>(Refer to page 45)</i>
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This product is a prepackaged tank mix of MPower Samurai (see imazamox - page 252) and MPower Independence (see clethodim - page 141). Information listed is restricted to Crop, Weeds, Rates and Tank mixes. For other detailed restrictions and other general information on the component products see the product pages listed above and select the most restrictive.

Company:

AgraCity

Formulation:

The *MPOWER Samurai Master* package contains the following components:

MPOWER Samurai (PCP# 33033): 70% imazamox as a water dispersible granule.

- Container Size - 8 x 117.5 g water soluble bags
- plus-

MPOWER Independence (PCP#32851): 240 g/L clethodim formulated as an emusifiable concentrate.

- Container Size – 4 L

Requires the addition of:

Assassin at 0.5% v/v or 5L per 1000L of water.

Crops and Staging:

Field pea: 2 – 6 true leaf stage.

Weeds, Rates and Staging:

MPOWER Samurai at 11.7 grams per acre plus MPOWER Independence at 50 mL per acre (with the required addition of Assassin):

Grasses – 1 – 4 main leaves.

- o Barnyard grass
- o Green foxtail
- o Japanese brome*
- o Volunteer cereals (except CLEARFIELD wheat)
- o Wild oats

Broadleaf weeds – cotyledon to 4 leaf stage.

- o Cow cockle
- o Green smartweed
- o Kochia*
- o Lamb's-quarters
- o Redroot pigweed
- o Round-leaved mallow*
- o Russian thistle
- o Shepherd's-purse
- o Stinkweed
- o Volunteer canola
- o Wild buckwheat*
- o Wild mustard

***Suppression only**

NOTE: This publication is only a guide. Always refer to the product label for application details and precautions. If information in this publication conflicts with the label use label directions.

Tank Mixes:

AgraCity supports the following mixes that are not on the *MPOWER Samurai Master* label. Apply mixes according to the most restrictive use limitations for either product:

- **Herbicides:** *MPOWER Boa*

Adding ingredients in the correct order is critical for optimum performance. Check labels of both products to be mixed for directions. General guidelines can be found on page 11.

Prospect	Herbicide Group 4 - halauxifen 14 - carfentrazone-ethyl <i>(Refer to page 45)</i>
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Company:

Corteva Agriscience (PCP#33635)

Formulation:

15 g/L halauxifen and 27.97 g/L carfentrazone-ethyl formulated as an emulsifiable concentrate.

- Container size: 2 x 10.8 L

Crops and Staging:

Prior to planting: Canola (including Juncea and Polish canola), flax, mustard (including Abyssinian, oriental, brown and yellow mustard), spring wheat, durum wheat and spring barley

5 or more days prior to planting: field corn*

7 or more days prior to planting: soybean*, field pea*

*Seeding/planting depth: minimum 4 cm (1.6 inches) or injury may occur

Weeds, Rates and Staging:

Apply 135 mL per acre with or without 0.5% v/v MSO to control weeds in the 1-8 leaf stage, unless otherwise specified:

- | | | |
|----------------------------------|---------------------------------------|--|
| o Cleavers (up to 25 cm) | o Morning glory (up to 3 leaf) | o Velvetleaf (up to 5 leaf) |
| o Dandelion (up to 15 cm)* | o Nightshade, eastern black | o Volunteer canola (up to 5 leaf or 10 cm) |
| o Flixweed (up to 10 cm) | o Shepherd’s purse (up to 20 cm) | o Waterhemp, tall (up to 5 cm) |
| o Hempnettle | o Stinkweed (up to flower initiation) | o Wild buckwheat* |
| o Lamb’s-quarters (up to 7.5 cm) | | |

Apply 135 mL per acre plus 180 g ae per acre of glyphosate to control the following weeds:

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|--|--|--|
| o Canada fleabane (less than 8 cm) | o Lamb’s-quarters (up to 8 leaves) | o Volunteer flax (up to 15 cm) |
| o Chickweed (up to 8 leaf) | o Morning glory (up to 3 leaf) | o Volunteer barley |
| o Cleavers (up to 25 cm) | o Narrow-leaved hawk’s beard (up to 15 cm) | o Volunteer canola (up to 5 leaf or 10 cm) |
| o Dandelion (up to 15 cm)* | o Persian darnel | o Volunteer wheat |
| o Downy brome | o Ragweed (common) (up to 8 cm) | o Wild buckwheat (up to 6-leaf, or 10 cm) |
| o Flixweed (up to 20 cm) | o Shepherd’s purse | o Wild mustard |
| o Foxtail (giant, green) | o Stinkweed (up to flower initiation) | o Wild oats |
| o Hempnettle | o Russian thistle | |
| o Kochia (up to 150 plants/m2, up to 15 cm tall) | | |
| o Lady’s-thumb (up to 8 leaves) | | |

*Suppression

Apply 135 mL per acre in Tank-Mix Combinations with Additional Glyphosate for Broader Spectrum Weed Control	Additional Weeds Controlled
275 g ae/acre	Annual weeds

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325 g ae/acre	Annual weeds: Crab grass, annual blue grass, prickly lettuce, annual sow thistle, and narrow-leaved vetch
360 g ae/acre	Perennial weeds: Quack grass (control, light to moderate infestations) Foxtail barley (control, light to moderate infestations) Canada thistle (rosette stage)* Toadflax (Vegetative Stage in summerfallow)**
720 g ae/acre	Perennial weeds: Foxtail barley (heavy infestation or when plants are stressed)
720 g ae/acre – 1020 g ae/ac	Perennial weeds: Quackgrass (long term control and heavy infestation)
690 g ae/ac – 1020 g ae/ac	Perennial weeds: Canada thistle (bud stage or beyond) **

Application Information:

- **Water Volume:**
 - **Ground:** 20 to 40 L per acre.
 - **Aerial:** Minimum 20 L per acre
- **Nozzles and Pressure:** Use low pressures of 30 to 40 psi (200 to 275 kPa). Use a combination of nozzles and pressure designed to deliver thorough, even coverage with **ASABE S572.1 coarse classification** droplets by ground or air.

How it Works:

Active ingredient	Timing	Target	Movement	Spectrum	WSSA Group
halauxifen	POST (foliar)	Synthetic Auxin	Throughout the plant (Symplast)	Broadleaf only	4
carfentrazone - ethyl	POST (foliar)	PPO Inhibitor/ Membrane disruptor	Little movement due to rapid cell leakage (Symplast)	Broadleaf	14

Effects of Growing Conditions:

Apply to actively growing weeds at the 1-8 leaf stage unless otherwise specified. Extreme growing conditions such as drought or near freezing temperature prior to, at or following time of application may reduce weed control at all stages of growth. Only weeds which are emerged at the time of application will be affected. If foliage is wet at the time of application control may be decreased. Under conditions of high weed density, control may be reduced.

Tank Mixes:

None registered.

Restrictions:

Rainfall: Avoid application when heavy rain is forecast.

Re-Entry Interval: DO NOT enter treated fields for 12 hours.

Pre-harvest Interval: Do not harvest the treated field corn within 100 days after application. Do not harvest the treated soybeans and field peas within 125 days after application. For all other crops on the Prospect herbicide label: Do not harvest the treated crop within 60 days after application.

Grazing: Livestock may be grazed on treated field corn 76 days following application and on soybeans and field peas 40 days following application. Do not cut the treated field corn for hay or silage within 100 days after application.

Do not cut the treated soybeans and field peas for hay or silage within 48 days after application. For all other crops appearing on the Prospect Herbicide label: Do not harvest the treated crop within 60 days after application. Do not cut the treated crop for hay or silage within 21 days after application.

NOTE: This publication is only a guide. Always refer to the product label for application details and precautions. If information in this publication conflicts with the label use label directions.

Re-cropping Interval: All major crops may be seeded the following spring, except lentils and chickpeas.

Storage: Store in original closed container in a well-ventilated room away from food, feed and fertilizer.

Buffer Zones: Avoid spraying in situations where drift may occur. DO NOT apply during periods of dead calm.

Method of Application	Buffer Zones (metres [†]) Required for the Protection of:		
	Freshwater Habitat of Depths:		Terrestrial habitat:
	Less than 1 m	Greater than 1 m	
Ground*	1	1	2
Fixed wing airplane	5	1	80
Helicopter	5	1	65

See page 36 for an explanation of the different habitats.

* Buffer zones can be reduced by 70% when using shrouds and by 30% when using cones mounted less than 12 inches from the crop canopy.

† Distance measured as metres from the downwind edge of the spray boom to sensitive habitat. Spray when the wind velocity is 16 km/hr or less.

Tank Cleaning: Refer to 'Method B' in the general section on sprayer cleaning on page 12 and 13.

Hazard Rating:

Warning – Contains the allergen soy

PYTHON	Herbicide Group 2 - imazamox 6 - bentazon (Refer to page 45)
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This product is a prepackaged tank mix of Python A (see imazamox - page 252) and Python B (see bentazon - page 117). Information listed is restricted to Crop, Weeds, Rates and Tank mixes. For other detailed restrictions and other general information on the component products see the product pages listed above and select the most restrictive.

Company:

ADAMA Canada

Formulation:

The Python package contains two components:

PYTHON A (PCP#33279): 80 g/L imazamox formulated as a solution

- Container size – 4 L
- plus-

PYTHON B (PCP#33282): 480 g/L bentazon formulated as a solution.

- Container size – 2 x 7.26 L

Requires the addition of:

28% UAN (28-0-0) at 0.8 L/ac – sold separately.

Merge Adjuvant at 0.5% v/v, ADAMA Adjuvant 80 at 0.25% v/v, NORAC MSO at 0.5% v/v, Hasten NT Ultra at 0.5% v/v or Agral 90 at 0.25% v/v.

Crops and Staging:

Dry Beans: 1-3 trifoliolate leaves

Soybeans: unifoliolate – 2 expanded trifoliolate leaves

Peas: 3-6 true leaf stage

Weeds, Rates and Staging:

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PYTHON A at 101 mL per acre plus PYTHON B at 364 mL per acre (with the required addition of an adjuvant and 28% UAN):

Grasses – 1 – 4 main leaves or early tillering.

- o Barnyard grass
- o Foxtail (green, yellow)
- o Japanese brome*
- o Persian darnel
- o Volunteer canaryseed
- o Volunteer cereals (except CLEARFIELD wheat)
- o Wild oats

Broadleaf weeds – cotyledon to 4 leaf stage.

- o Cleavers*
- o Cow cockle
- o Flixweed
- o Green smartweed
- o Lamb's-quarters
- o Redroot pigweed
- o Shepherd's-purse
- o Stinkweed
- o Stork's bill
- o Volunteer canola (except CLEARFIELD varieties)
- o Wild buckwheat*
- o Wild mustard

***Suppression only**

Refer to the product label for complete mixing instructions. A general guide to mixing can be found on page 11.

Tank Mixes:

ADAMA supports the following mixes that are not on the *PYTHON* label. Apply mixes according to the most restrictive use limitations for either product:

- **Herbicides:** *Arrow, Arrow-All-In*

Adding ingredients in the correct order is critical for optimum performance. Check labels of both products to be mixed for directions. General guidelines can be found on page 11.

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Fungicides

Additions and other changes:

Table 1, p. 423

- Replace Palliser with Folicur 250EW
- Move OxiDate FC down to box referring to Not Classified

Table 2, p. 424 (Potatoes)

- Add numeral 3 to Phostrol – Early Blight

Table 3, p. 425 (Cereals and Grasses)

- Replace Palliser with Folicur 250EW
- Change title to Wheat and Barley

Table 4, p. 426 (Oat, Rye and Triticale)

- Replace Palliser with Folicur 250EW

Table 7, p.429 (Oilseed Crops)

- Insert Folicur 250EW after Fitness
- Add dots under Soybean - powdery mildew and frogeye leaf spot

p. 470 - the PCP number for Manzate Max is 33299, not 3329.

p. 479 – Phostrol has had a Label Expansion to include suppression of Early Blight in potatoes.

p. 490 – missing footnote: * Prosaro XTR may be applied sequentially after an application of Folicur 250 EW. The minimum interval between applications is 7 days.

p. 496 - a liquid formulation (PCP#33081) replaces the granular formulation of Quash (metconazole).

p. 501 – Gowan Canada has acquired the ownership of Reason 500SC (fenamidone) from Bayer.

p. 510, 511 – remove Palliser and replace with Folicur 250 EW (PCP#29820).

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Insecticides

New Fumigant for Stored Grain

Fumitoxin tablets

Insecticide Group – 24A

Company:

Degesch America Inc. (PCP# 19227)

Formulation:

55% aluminum phosphide

Insects and Other Pests Controlled: Rusty grain beetle, red flour beetle, saw-toothed grain beetle, granary weevil, yellow mealworm, lesser grain borer, spider beetles, hairy fungus beetles, Indian meal moth, nematodes, mice and rodents.

Approved for use on the following stored grains: Barley, corn, dried peas, lentils, millet, oats, rye, soybeans, sunflower seeds, triticale and wheat.

Restricted Product: The use and sale of Aluminum Phosphide is restricted to licensed pesticide applicators possessing a valid fumigation license (Saskatchewan) or stored agricultural products license (Manitoba).

Fumitoxin can only be used in conjunction with a detailed fumigation management plan.

Rate and Minimum Exposure Period: Refer to labels to determine rate. For grain bins a dosage of 250-500 tablets (or 880-2560 pellets) per 100 m³ of bin space being treated (not volume of grain) is recommended. It is important to ensure that bins are relatively secure. It is not advisable to use phosphine products in bins that are leaky or not well sealed.

The following table may be used as a guide to determine the minimum length of exposure period to fumitoxin at the indicated temperatures:

Temperature	Exposure Period
Below 5°C (40°F)	Do not fumigate
5°C-12°C (40°-53°F)	10 days
13°-15°C (54°-59°F)	5 days
16°-20°C (60°-68°F)	4 days
above 20°C (68°F)	3 days

Do not fumigate commodities with aluminum phosphide when commodity temperature is below 5°C.

Environmental Hazards: Toxic to birds and mammals. Carefully inspect the outside and inside of the structure prior to application to ensure the absence of nesting or roosting birds. Avoid application if birds are present.

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