

## Guide to PreSeed Herbicide Options - 2017

Product Option	Typical Rate	Herbicide Group	Crop Choices	Benefits	Target Weeds	Cautions	Cost/Acre Approx SRP
<b>Glyphosate</b>	Variable rate structure (0.5 to 1.0 REL) Depends on glyphosate brand, grams a.i, weed type & weed density, weed staging, size, etc.	9	All Crops	- Simple, low cost - Vary rates to adjust to conditions, weeds, density & life cycle -No residual	Annual grasses Annual broadleaf Non RR-canola	- No vol. RR canola control - Only one MOA - Control may be slow in cool spring - BMP is to mix with an additional MOA for resistance management	Glyphosate 540 g mid-tier product <b>0.5 REL - \$2.25/ac</b> <b>1.0 REL - \$4.50/ac</b>
Glyphosate + <b>AIM</b> (carfentrazone)	Glyphosate: rate variable Aim: 15 ml/ac	9,14	All Crops	- Controls 1-3 leaf canola, including RR - Rapid control of annual weeds - No residual to any crop grown	Annual grasses Annual broadleaf RR-canola	- For best control, use 10 gpa water - Best control of volunteer canola is at the 1-2 leaf stage - Aim is a contact herbicide-prefer 10 gpa	Glyphosate Cost + <b>AIM - \$3.75/ac</b> at 133 ac per jug rate
Glyphosate + <b>AIM + Command</b> (carfentrazone + clomazone)	Glyphosate: rate variable Aim: 15 ml/ac Command: 135ml/ac	9,13,14	Canola	- Controls 1-3 leaf canola, including RR - Rapid control of annual weeds - Command provides short season residual control of cleavers	Annual grasses Annual broadleaf RR-canola Cleavers	Requires 5-10mm moisture for activation - Reduced residual duration in soils with high OM% or excessive rain events - Soil texture - coarse/sandy soils - Aim is contact herbicide - prefer 10 GPA	Glyphosate Cost + <b>AIM - \$3.75/ac</b> at 133 ac per jug rate + <b>Command - \$7.95/ac</b> at 40 ac/jug
Glyphosate + <b>Amitrol 240</b> <b>(discontinued)</b>	Glyphosate - rate variable Amitrol 1.7 L/ac label rate lower rates may be adequate for vol. canola control	9, 11	Barley, Canola, Field corn, Field pea, Soybean, Wheat, White bean	- Vol. RR canola control -Control annuals & small dandelions -Amitrol at 1.0 l/ac adequate for seedling RR canola volunteers	Vol RR canola Annual broadleaf Small dandelion Field Horsetail	- Keep glyphosate rate at 0.5 REL -Minimum of 5 GPA water volume -Higher water rates are beneficial -Refer to label for more specifics	Glyphosate cost + <b>Amitrol - \$16.15/ac</b> at 1.7L/ac
Glyphosate + <b>Authority</b> (sulfentrazone)	Glyphosate: rate variable Authority: 32-43 ac/jug	9, 14	Field peas, Flax, Chickpeas, Soybeans and Sunflowers	- Residual weed control - Control Grp 2 & 9 Resistant Kochia -Suppression/control of Grp 2 resistant cleavers	Kochia Lambs quarters Redroot Pigweed Wild Buckwheat Cleavers (supp)	- Watch re-cropping restrictions - Requires a 10-20 mm moisture event within 7-10 days for activation - Reduced efficacy in soils with high OM% and low pH - Soil texture - coarse/sandy soils	Glyphosate Cost + <b>Authority - \$14.51/ac</b> at 43 ac/jug
Glyphosate + <b>Authority Charge</b> (sulfentrazone + carfentrazone)	Glyphosate: rate variable Authority Charge at 64-86 ac/case Recommended to add surfactant: NIS at 0.25% v/v or Merge at 1% v/v	9, 14, 14	Field peas, Flax, Faba beans, Chickpeas, Soybeans and Sunflowers	- Control vol. 1-3 leaf RR canola - Control Gr. 2 & 9 resistant kochia - Supression Gr. 2 resistant cleavers - Improved wild buckwheat control - AIM provides activity on emerged weeds. Residual control for Authority	Kochia Lambs quarters Redroot Pigweed Wild Buckwheat Cleavers (supp)	- Watch re-cropping restrictions - Requires a 10-20 mm moisture event within 7-10 days for activation - Reduced efficacy in soils with high OM% and low pH - Soil texture - coarse/sandy soils - Contact herbicide - prefer 10 GPA	Glyphosate Cost + <b>Authority Charge</b> <b>\$16.21/ac</b> at 86 ac/case
Glyphosate + <b>Banvel 480</b> (Dicamba)	Glyphosate: rate variable Dicamba: 60-90 ml/ac (1.0-1.5 oz)	9, 4	Barley, Corn, Oats, Rye, Wheat	- Controls all vol. canola, including RR - Enhanced broadleaf control and winter annuals, wild buckwheat	Annual grasses Annual broadleaf RR-canola	- In front of corn do not use on soil with less than 2.5% OM or sandy soils	Glyphosate Cost + <b>Dicamba - \$2.25/ac</b> (170 ac/jug - 1 oz/ac)
Glyphosate + <b>BlackHawk (New)</b> (pyraflufen-ethyl + 2,4-D Ester)	Glyphosate: rate variable 60 acres/case (add surfactant only when not mixing with glyphosate)	9, 4, 14	Wheat, Barley, Rye, Soybeans, Canaryseed, Field Corn, Triticale, Oats(7 days before planting)	- Controls all volunteer canola, including RR - Rapid control of annual weeds - Control of Grp 2 & 9 resistant kochia - Spring germinated rosettes	Annual grasses Annual broadleafs RR-canola Spring Dandelions Narrow leaved HB	- For best control, use 10 gpa water - Best control of volunteer canola is at the 1-2 leaf stage - Aim and pyraflufen are contact herbicides (5 to 10 gpa)	Glyphosate Cost + <b>BlackHawk - \$6.03/ac</b> at 60 acres/case

## Guide to PreSeed Herbicide Options - 2017

Glyphosate + <b>Goldwing (New)</b> (pyraflufen-ethyl + MCPA Ester)	Glyphosate: rate variable 80 ac/jug (add surfactant only when not mixing with glyphosate)	9, 4, 14	Wheat, Barley, Rye, Field Peas, Canaryseed, Field Corn, Triticale, Oats(7 days before planting), Buckwheat, Pearl & Proso Millet	- Rapid desiccation of weeds -non-group 2 weeds and resistant Grp 2 Multiple modes of action - no cropping restrictions	Annual grasses Annual broadleaves RR-canola Spring Dandelions Narrow leaved HB Kochia (Grp 2&9)	- For best control, use 10 gpa water - does not provide residual control - Aim and pyraflufen are contact herbicides (5 to 10 gpa)	Glyphosate Cost + <b>Goldwing - \$6.03/ac</b> at 80 acres/jug
Glyphosate + <b>Buctril M / Logic M</b> (Bromoxynil & MCPA)	Glyphosate: rate variable Bromoxynil & MCPA: 0.2 - 0.4 L/ac (2-4 oz/ac)	9, 6, 4	Wheat, Oats, Barley Canary Seed, Flax, Rye, Forage Grasses	- Vol RR canola control - Improved wild buckwheat control	Annual grasses Annual broadleaf RR-canola Field Horsetail	- For best control, use 10 gpa water - Best control of volunteer canola is at the 1-3 leaf stage - Bromoxynil is a contact herbicide	Glyphosate Cost + <b>Buctril M - \$4.00</b> at 0.2L/ac (40ac/jug)
<b>CleanStart</b> (carfentrazone + glyphosate)	Complete case - 40ac/case (0.5 REL Credit glyphosate + Aim) Recommended to add surfactant: NIS at 0.25% v/v or Merge at 1% v/v when controlling v.canola 1-3 leaf	9, 14	All Crops	- Controls 1-3 leaf canola, including RR - Rapid control of annual weeds - No residual to any crop grown	Annual grasses Annual broadleaf RR-canola	- For best control, use 10 gpa water - Best control of volunteer canola is at the 1-2 leaf stage - Aim is a contact herbicide-prefer 10 gpa	<b>CleanStart - \$7.83/ac</b> at 40 acres/case
Glyphosate + <b>Command</b> (clomazone)	Glyphosate: rate variable Command 135ml/ac	9, 13	Canola	Glyphosate benefits and Command provides short season residual control of cleavers	Annual grasses Cleavers	Requires 5-10mm moisture for activation - Reduced residual duration in soils with high OM% and excessive rain events - Soil texture - coarse/sandy soils	Glyphosate Cost + <b>Command - \$7.95/ac</b> at 40 ac/jug
Glyphosate + <b>Conquer (New)</b> (bromoxynil + pyraflufen-ethyl)	Glyphosate: rate variable CONQUER at 80 acres/case	9, 6, 14	Canola	- Controls cot-4 leaf canola, including RR canola - very strong on cleavers - Control of Grp 2 & 9 resistant kochia - Controls larger rosettes, winter annuals	Annual grasses V Canola kochia, cleavers Narrow leaved HB	- For best control, use 10 gpa water - Best control of volunteer canola is at the cot to 4 leaf stage - Aim in previous formulation - pyraflufen-ethyl new formulation	Glyphosate Cost + <b>CONQUER - \$7.19/ac</b> at 80 acres/case
Glyphosate + <b>Everest or PrePare</b> (flucarbazone)	Glyphosate: rate variable Everest: 8.7 g/ac (66 ac/567 g/ jug) or 15 ml/ac (129 ac/1.937 jug)	9, 2	Wheat (spring, not Durum)	- Residual control of green foxtail, wild oats - Enhanced Japanese, Downy, Foxtail Barley, Barnyard grass with the glyphosate.	Wild oats Green foxtail	- Re-cropping restrictions in some conditions; read label - Add AMS for additional control of Brome Species	Glyphosate Cost + <b>Everest 2.0 - \$12.60/ac</b>
Glyphosate + <b>Express SG or Inferno WDG, Nuance, Spike</b> (tribenuron)	Glyphosate: rate variable Express SG: 6 g/ac Inferno WDG - 8 g/ac	9, 2	Wheat, Durum, Winter wheat, Barley, Oats, Canary Seed, Dry Bean, Peas, Soybean, Fababean, Lupin, Alfalfa, Clover	- Controls all vol. canola, including RR - Improved winter annual control, including Narrow Leaf Hawksbeard Improved control of dandelions	Dandelions Narrowleaved H.B Wild buckwheat White Cockle	- Do not use in front of pulses or legumes, when there is coarse textured (sandy soil) >50% sand and <3% OM%. As well as eroded knolls	Glyphosate Cost + <b>Express SG - \$4.13/ac</b>
Glyphosate + <b>Express Pro or Nurance Pro</b> (tribenuron & metsulfuron)	Glyphosate: rate variable Express Pro: 7 g/ac	9, 2, 2	Wheat and Barley	- Controls all vol. canola, including RR - Improved winter annual control, including Narrow Leaf Hawksbeard Improved control of dandelions - Residual control of some annual weeds for about 1-2 weeks	Dandelions Narrowleaved H.B Wild buckwheat White Cockle Cleavers Scentless Chamomile Storksbill	- Refer to label for crop options within one year after application	Glyphosate Cost + <b>Express Pro - \$4.98/ac</b>

## Guide to PreSeed Herbicide Options - 2017

Glyphosate + <b>Focus</b> (pyoxasulfone + carfentrazone)	Glyphosate: rate variable Focus at 33, 40 or 50 ac/jug Recommended to add surfactant: NIS at 0.25% v/v or Merge at 1% v/v	9, 14, 15	Spring & Winter Wheat, Soybeans, Corn	- wide range of grasses and broadleaf weeds -residual control -pre or post seed application	Downy & Japanese Brome, Foxtail Bly(S), Wild oats(S), Kochia (S) Lams quarters (S) Redroot Pigweed Wild Buckwheat(S) Cleavers	- Watch re-cropping restrictions - Requires a 15-25 mm moisture event within 7-10 days for activation - Reduced efficacy in soils with high OM% and low pH - Soil texture - coarse/sandy soils - Contact herbicide - prefer 10 GPA	Glyphosate Cost + <b>Focus - \$19.99/ac</b> at 40 ac/jug
Glyphosate + <b>HEAT (limited) HEAT LQ</b> (saflufenacil)	Glyphosate: rate variable Heat: 30-80 ac/bottle (10.5 - 28.1 g/ac) Heat LQ - 30-80 ac/jug (21.5 - 59 ml/ac) Merge: 0.2 L/ac (included with Heat LQ)	9, 14	Barley, Canary seed, Chickpea, Corn, Peas, Oat, Wheat, Lentils*, Soybean, Canary Seed, Soybeans* (*low rate only 10.5 g or 21.5 ml)	- Rapid desiccation of weeds - Excellent product to manage grp 2 Resistant weeds. - Residual rate at 30-40 ac/jug, but variable based on soil quality	Residual (30 ac) for: Kochia, Cleavers Wild buckwheat Redroot Pigweed Stinkweed, Wild Mustard	- Must use surfactant: Merge 0.2 L/ac or Score 0.4L/ac - Not before any oilseeds - Only 80ac rate before lentils & soybeans	Glyphosate Cost + <b>HEAT LQ - \$5.73/ac</b> 80 ac/jug LQ <b>HEAT LQ - \$15.29/ac</b> 30 ac/jug LQ
Glyphosate + <b>Inferno Duo</b> (flucarbazone & tribenuron)	Glyphosate: rate variable Inferno Duo - 12.8 g/ac	9, 2	Wheat (spring, not Durum)	- Residual control of green foxtail, wild oats - Enhanced Japanese, Downy, Foxtail Barley, Barnyard grass with the glyphosate.	Wild oats (suppr) Green foxtail plus Express (tribenuron) weeds	- Re-cropping restrictions in some conditions; read label - Add AMS for additional control of Brome Species	Glyphosate Cost + <b>Inferno Duo - \$8.45/ac</b>
Glyphosate + <b>Ko-Act</b> (tribenuron + 2,4-D Ester - 5 oz)	Glyphosate: rate variable 80 acres/case	9, 2, 4	Wheat, Barley, Rye	- Controls 1-3 leaf canola, including RR - Control of Grp 2 & 9 resistant kochia - Controls larger rosettes, winter annuals, larger canola	Annual grasses Annual broadleaves RR-canola Dandelions Narrow leaved HB Hempnettle	- For best control, use 10 gpa water	Glyphosate Cost + <b>Ko-Act - \$5.41/ac</b> at 80 acres/case
Glyphosate + <b>Korrex II</b> (florasulam + dicamba)	Glyphosate: rate variable 80acres/case or Korrex	9, 2, 4	Wheat, Winter Wheat, Durum, Barley, Oats, Rye	- Controls 1-3 leaf canola, including RR - Control of Grp 2 & 9 resistant kochia - Controls larger rosettes, winter annuals, larger canola - provides extended control of flusing broadleaf weeds	Annual grasses Annual broadleaves RR-canola Dandelions Narrow leaved HB Hempnettle Grp 2&9 Res Kochia	- For best control, use 5-10 gpa water	Glyphosate Cost + <b>Korrex - \$5.75/ac</b> at 80 acres/case
Glyphosate + <b>2,4-D Ester</b>	Glyphosate: rate variable 2,4-D: 0.16- 0.32 L/ac (4-8oz/ac)	9, 4	Wheat, Barley, Rye, Triticale	- Controls all vol. canola, including RR - Enhanced broadleaf control and winter annuals, wild buckwheat	Annual grasses Annual broadleaf RR-canola Field Horsetail	- Rates of 2,4-D will need to increase if canola larger than 2 leaf stage	Glyphosate Cost + <b>2,4-D Ester 700 - \$2.25/ac</b> (60 ac/ jug - 4 oz)
Glyphosate + <b>MCPA Ester</b>	Glyphosate: rate variable MCPA amine:0.25-0.5L/ac (other crops) MCPA ester: 0.2-0.4L/ac (cereals only) (4-8 oz/ac)	9, 4	Cereals, Corn*, Flax*, Peas*, Lentil*, Chickpea* (*amine only)	- Controls all vol. canola, including RR - Enhanced broadleaf control and winter annuals, wild buckwheat	Annual grasses Annual broadleaf RR-canola Field Horsetail	- Rates of MCPA will need to increase if canola larger than 2 leaf stage	Glyphosate Cost + <b>MCPA Ester 600 \$2.25/ac</b> (50 ac/ jug - 4 oz/ac)

## Guide to PreSeed Herbicide Options - 2017

Glyphosate + <b>Paradigm</b> (florasulam + Arylex)	Glyphosate: rate variable Paradigm - 106 ac/jug (0.8 kg)	9, 4, 4	Wheat, Barley	- Controls all vol. canola, including RR - Improved winter annual control, including Narrow Leaf Hawksbeard Improved control of dandelions - Residual control of some annual weeds for about 1-2 weeks	Dandelions Narrowleaved HB Wild buckwheat Cleavers(all sizes) Scentless Chamomile Storksbill	- no cropping restrictions the following year when used as a preseed burnoff in the spring -21 day extended control (guarantee)	Glyphosate Cost + <b>Paradigm - \$5.95/ac</b>
Glyphosate + <b>Pardner / Brotex</b> (Bromoxynil)	Glyphosate: rate variable Bromoxynil: 0.4 - 0.5 L/ac (4-5 oz a.i)	9, 6	Wheat, Oats, Barley, Corn, Canola, Canary Seed, Flax, Rye, Forage Grasses	- Vol RR canola control - Improved wild buckwheat control	Annual grasses Annual broadleaf RR-canola Field Horsetail	- For best control, use 10 gpa water - Best control of volunteer canola is at the 1-3 leaf stage - Bromoxynil is a contact herbicide	Glyphosate Cost + <b>Pardner - \$7.50/ac</b> at 0.4L/ac (20ac/jug)
<b>PrePass FLEX</b> (florasulam)  <b>or PrePass XC</b> (glyphosate & florasulam)	Glyphosate: rate variable PrePass Flex - 8.1 g/ac (2 g/ac a.i.) 80 ac/jug Prepass XC: Glyphosate: 0.5 REL Florasulam: 40 ml/ac (2 g/ac a.i.)	9, 2	Wheat, Barley, Oats	- Controls all vol. canola, including RR - Improved winter annual control, including Narrow Leaf Hawksbeard Improved control of dandelions - Residual control of some annual weeds for about 1-2 weeks	Dandelions Narrowleaved HB Wild buckwheat Cleavers Scentless Chamomile Storksbill	- no cropping restrictions the following year when used as a preseed burnoff in the spring -21 day extended control (guarantee)	Glyphosate Cost + <b>PrePass Flex - \$4.00/ac</b>  <b>PrePass XC - \$6.10/ac</b>
Glyphosate + <b>Valtera</b> (flumioxazin)	Glyphosate: rate variable Valtera ( 56 g/ac) 160 ac/case	9, 14	Wheat (7 days before planting), Peas, Chickpeas, Soybeans, Lentils (fall application only)	- Control of Grp 2 & 9 resistant kochia -4 to 6 weeks residual activity on newly emerging weeds - do not incorporate	Annual grasses Annual broadleaves chickweed, pigweed, dandelions, nightshade, Kochia lamb's quarters, Cleavers (S-Grp 2)	- For best control, use 10 gpa water - requires 0.2" rain to activate - apply to soils up to 8% OM - preseed applications require min disturbance (<30%)	Glyphosate Cost + <b>Valtera - \$14.75/ac</b> at 160 ac/case

\*Always refer to the Manufacturer Label - this list is not comprehensive