

POTATO HERBICIDE PERFORMANCE RATINGS

- E** EXCELLENT (≥91%)
- G** GOOD (81-90%)
- F** FAIR (65-80%)
- P** POOR (<65%)
- N** NONE
- U** UNKNOWN

GRASSES

- CROP TOLERANCE
- SITE OF ACTION^A
- Barnyardgrass
- Crabgrass
- Fall panicum
- Foxtail, gi/gr
- Foxtail, yellow
- Quackgrass
- Sandbur
- Shattercane/Sorghum
- Volunteer barley
- Volunteer wheat
- Wild oat
- Witchgrass
- Yellow Nutsedge

PREPLANT

Aim EC (carfentrazone)	E-14	P	P	P	N	N	U	U	U	U	U	U	U	U	P
Charger MAX/Dual II Magnum (s-metolachlor)	E-15	E	E	E	E	E	P	P	F	P	P	P	P	E	G
Eptam (EPTC)	G-8	E	E	E	E	E	E	F	G	G	G	G	E	G	
Eptam + Trust/Treflan HFP or Prowl H2O (EPTC + trifluralin or pendimethalin)	G-8,3	E	E	E	E	E	E	F	E	G	G	G	E	G	
Vida (pyraflufen)	F-E-14	P	P	P	N	N	U	U	U	U	U	U	U	U	P

PREEMERGENCE

Boundary/Presidual ^R (s-metolachlor + metribuzin)	G-15,5	G	E	E	E	E	P	F	P	F	P	P	P	E	F
Charger Basic/Dual Magnum or Charger MAX/Dual II Magnum (s-metolachlor)	G-15	E	E	E	E	E	P	P	F	P	P	P	P	E	F
Chateau ^R + Dimetric EXT/Metriclude ^R (flumioxazin + metribuzin)	G-14,5	E	P	F	E	G	G	P	P	F	P	P	P	F	G
Dimetric EXT/Metriclude ^R (metribuzin)	G-5	E ^R	E	E	E ^R	E	P	F	P	P	P	P	F	E	P
Framework/Prowl H2O (pendimethalin)	E-3	E	E	E	E	E	E	P	E	P	F	P	F	E	P
Lorox DF/LineX 4L ^R (linuron)	G-7	F	F	F	F	F	P	P	P	P	P	P	P	F	P
Matrix SG ^R (rimsulfuron)	E-2	G	G ¹	F	G	G ^R	F	G ^R	P	P	G	F	F	F	F
Outlook (dimethenamid-p)	G-15	E	E	E	E	E	P	P	F	P	P	P	P	E	G
Reflex/Agent 1.88 (fomesafen)	G-14	P	F	F	P	F	P	P	N	N	N	N	N	P	P
Trust/Treflan HFP (trifluralin)	E-3	E	E	E	E	E	P	E	G	P	F	P	F	E	P

POSTEMERGENCE

Aim EC (carfentrazone)	F-E-14	P	P	P	N	N	U	U	U	U	U	U	U	U	P
Charger Basic/Dual Magnum (s-metolachlor)	G-15	G	G	G	G	G	P	P	P	P	P	P	P	G	E
Dimetric EXT/Metriclude EXT ^R (metribuzin)	E-5	P	F	P	F	P	P	F	P	P	P	P	P	P	P
Eptam (EPTC)	E-8	G	G	G	G	G	P	F	G	F	F	F	F	G	G
Matrix SG ^R (rimsulfuron)	E-2	E	G	F	G	E ^R	G ^R	F	F	G	E	G	G	G ^R	F
Poast ^R (sethoxydim)	G-1	E	E	E	E ^R	E	F	G	E	E	E	E	E	G ^R	P
Section Three/Select 2 EC/Cleanse ^R (clethodim)	E-1	E	E	E	E ^R	E	G	E	E	E	E	E	E	E ^R	N
Vida (pyraflufen)	F-E-14	P	P	P	N	N	U	U	U	U	U	U	U	U	P

HARVEST AID

Aim EC (carfentrazone)	F-G-14	P	P	P	N	N	U	U	U	U	U	U	U	U	P
Defol, ³ Reglone ⁴ (diquat)	P-22	G	G	G	G	G	P	G	U	G	G	G	G	G	N
Rely 280 (glufosinate)	P-10	F	G	G	E	G	F	F	G	G	G	G	G	G	P
Vida (pyraflufen)	F-G-14	P	P	P	N	N	U	U	U	U	U	U	U	U	P

¹ On large crabgrass, P - On smooth crabgrass.
³ Defol 750 = sodium chlorate.
⁴ Reglone = diquat.
⁵ See label of pigweed species controlled.

^A Site of action, described on page 759.
^R No control of herbicide resistant weed biotypes.
 See the list of known resistant weeds on the second page of the technical section.

POTATO WEEDS

POTATO HERBICIDE PERFORMANCE RATINGS

BROADLEAVES

Bindweed, field
Canada thistle
Cocklebur
Jimsonweed
Kochia, triazine rest.
Kochia
Lambquarters, common
Morningglory, annual
Mustard, wild
Nightshade, black
Nightshade, hairy
Pigweed⁵
Purslane
Ragweed, common
Russian thistle
Smartweed
Sunflower
Velvetleaf
Wild buckwheat

PREPLANT

U	U	G	GE	E	E	E	G	FG	G	P	F	GE	GE	F	E	GE	GE	GE	U	Aim EC
P	P	P	P	P	P	F	P	P	G	F	G	FG	P	P	P	P	P	P	P	ChargerMAX/Dual II Magnum
P	P	P	P	F	F	F	FG	P	FG	FG	F	G	F	P	P	P	P	F	P	Eptam
P	P	P	P	G	G	G	FG	P	FG	FG	G	G	F	FG	P	P	P	F	P	Eptam + Trust/Treflan HFP or Prowl H2O
U	U	G	GE	E	E	E	G	FG	G	P	F	GE	GE	F	E	GE	GE	GE	U	Vida

PREEMERGENCE

P	P	F ^R	F	G ^R	P	E ^R	P	F	G	F	E	FG	G ^R	F	G ^R	G ^R	F	F	G ^R	F	Boundary/Presidual ^R
P	P	P	P	P	P	F	P	P	G	F	G	FG	P	P	P	P	P	P	P	P	Charger Basic/Dual Magnum or ChargerMAX/Dual II Magnum
F	P	G	G	E	E	F	E	E	E	E	E	E	E ^R	E	E	G	G	G	G	G	Chateau ^R + Dimetric EXT/Metriclud ^R
P	P	F ^R	G	G ^R	P	E ^R	P	G	G	F	G ^R	G	E ^R	G	G ^R	F	G ^R	G	G	Dimetric EXT/Metriclud ^R EXT ^R	
P	P	P	P	G	G	G	P	P	P	P	G	FG	P	FG	P	P	P	P	P	Framework/Prowl H2O	
P	P	P	G	F	F	E ^R	P	E	F	F	E ^R	G	E ^R	F	G ^R	P	F ^R	G	G	Lorox DF/Linex 4L ^R	
P	P	F ^R	P	G ^R	G ^R	F	G ^R	P	G ^R	P	FG	E ^R	E	F ^R	P	P	P	F	P	Matrix SG ^R	
P	P	P	P	P	P	G	P	P	G	G	E	G	P	P	P	P	P	P	P	Outlook	
P	N	P	F	F	P	F	F	F	G	F	E	F	G	P	FG	F	P	P	P	Reflex/Agent 1.88	
P	P	P	P	G	G	G	P	P	P	P	G	G	P	FG	P	P	P	P	P	Trust/Treflan HFP	

POSTEMERGENCE

U	U	G	GE	E	E	E	G	FG	G	P	F	GE	GE	F	E	GE	GE	GE	U	Aim EC
P	P	P	P	P	P	F	P	P	G	F	G	PF	P	P	P	P	P	P	P	Charger Basic/Dual Magnum
F	P	E ^R	G	G ^R	P	G ^R	P	GE	P	P	E ^R	PF	E ^R	E	E ^R	E	G ^R	G	G	Dimetric EXT/Metriclud ^R EXT ^R
P	P	P	P	F	F	F	FG	P	F	F	F	U	F	P	P	P	P	P	P	Eptam
F	FG	F	P	G ^R	G ^R	F ^R	PF	E ^R	P	FG	E ^R	G	F	G ^R	P	F	G ^R	P	GF	Matrix SG ^R
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Poast ^R
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Section Three/Select 2 EC/Cleanse ^R
U	U	G	GE	E	E	E	G	FG	G	P	F	GE	GE	F	E	GE	GE	GE	U	Vida

HARVEST AID

U	U	G	GE	U	U	E	G	U	U	U	GE	GE	F	U	GE	U	GE	U	Aim EC
P	P	F	U	FG	FG	G	U	E	F	F	FG	U	G	G	FG	F	G	F	Defol ³ , Reglone ⁴
F	F	E	E	G	G	GE	GE	E	E	E	E	U	E	G	E	E	G	E	Rely 280
U	U	G	GE	U	U	E	G	U	U	U	GE	GE	F	U	GE	U	GE	U	Vida

POTATO WEEDS

POTATO HERBICIDE APPLICATION TIMING AND RESTRICTIONS

Herbicide	Application Timing*	Comments/Restrictions	GPA ¹		Rainfast (hrs)	Aerial Application	Intervals* (Days)			
			Ground	Aerial			Feeding Forage	Grazing Animals	Harvest	
Aim EC	PP PRE PH	PRE before crop emergence and up to <4" weeds. Harvest aid.	20	5-10	6-8	Y	NR	NR	7	
Boundary/Presidual	PRE POST	PRE to weeds, before or after potato emergence Center pivot application, after drag-off.	10	2		Y	NR	NR	60	
Charger Basic/Dual Magnum	PP PRE POST	May incorporate 3". PRE after planting through after drag-off or hilling. POST after hilling/lay-by. ^B 60 days PRE, 40 days POST.	10	2		Y	NR	NR	40, 60 ^B	
Charger Max/Dual II Magnum	PP PRE	May incorporate 3". PRE after planting through after drag-off or hilling.	10	2		Y	NR	NR	60	
Chateau SW Cleanse	PRE	Apply after hilling and PRE to weeds. See Section Three	15-50	5-10	1	Y	NR	NR	NR	
Cornerstone/Plus or Cornerstone 5 Plus	PP PRE	Apply PP or PRE prior to crop emergence to emerged weeds.	3-40	3-15	5	Y	56	56	56	
Defol 750	PH	Defoliant to facilitate harvest.	10-20	5-10	24	Y	NR	NR	10	
Dimetric EXT/Metriclude EXT	PRE POST	Early POST before weeds are 1".	20	5	6-8	Y	NR	NR	60	
Durango DMA/Duramax	PP PRE	Apply PP or PRE prior to crop emergence to emerged weeds. Before crop emerges.	3-40	3-15	5	Y	56	56	56	
Eptam 7E	PP PRE POST	Apply and incorporate just before planting, after drag-off or lay-by.	10-50	NL		NL	NR	NR	45	
Eptam 20G	PP PRE POST	Apply and incorporate just before planting, after drag-off or lay-by.	NA	NL		NL	NR	NR	45	
Framework or Prowl H2O	PRE POST	PRE before weed and crop emergence or after drag-off. May incorporate after planting or before, at, or after drag-off. POST from crop emergence to 6" tall.	10	5		Y	NR	NR	NR	
Gramoxone SL/SL 2.0	PP PRE	Apply to emerged weeds up to ground cracking before potatoes emerge.	10	5	0.5	Y	NR	NR	NR	
Lorox DF/Linex 4L	PRE	Apply after planting and before potatoes emerge. East of Rocky Mountains.	15	NL		NL	NR	NR	NR	
Matrix SG	PRE POST	Apply after hilling, drag-off, or reservoir tillage but before potatoes and weeds emerge. POST to small actively growing weeds. ^C Higher in some states.	10	5 ^C	4	Y	NR	NR	30	
Metriclude		See Dimetric EXT								
Outlook Presidual	PRE	Apply after planting or drag-off. See Boundary	5	2		Y	NR	NR	40	
Prowl H2O		See Framework.								
Poast	POST	Apply to actively growing grasses.	5-20	5	1	Y	NO	NO	30	
Reflex/Agent 1.88	PRE	Apply after planting and prior to crop emergence.					NR	NR	70	
Reglone	PH	Preharvest desiccation.	20	5	0.5	Y	NO	NO	7	
Rely 280	PH	Apply at the beginning of natural senescence.	20-100	10	4	Y	NR	NR	9	
Roundup PowerMax/ WeatherMax	PP PRE	Apply PP or PRE prior to crop emergence to emerged weeds. Before crop emerges.	3-40	3-15	5	Y	56	56	56	
Section Three/Select 2 EC/Cleanse	POST	Apply to actively growing grasses.	10	3	1	Y	NR	NR	30	
Select Max	POST	Apply to actively growing grasses.	10-40	3	1	Y	NR	NR	30	
Sequence	PRE	Apply before, during or after planting but before crop emergence.	10-40	3-15		Y	NR	NR	60	
Sonalan HFP	PRE	Apply after planting, prior to crop emergence. Requires incorporation. Certain western states only.	5	NL		NL	NO	NO	NR	

*Application Timing and Interval
 PP - Preplant surface, unless otherwise specified
 PPI - Preplant incorporated
 PRE - Preemergence
 POST - Postemergence
 NA - Not applicable

NR - No restrictions
 NO - Not permitted
 NL - No related information on label
 S - Heavy rainfall soon after application may require retreatment.
 1 Includes labeled minimum or range.

POTATO HERBICIDE APPLICATION TIMING AND RESTRICTIONS

Herbicide	Application Timing*	Comments/Restrictions	GPA ¹		Rainfast (hrs)	Aerial Application	Intervals* (Days)		
			Ground	Aerial			Feeding Forage	Grazing Animals	Harvest
Treflan TR-10	PP	Apply and incorporate after planting, before emergence immediately following drag-off, or after potatoes have fully emerged.	5-40	5-10		Y	NR	NR	NR
Trust/Treflan HFP or 10G	PP	Apply and incorporate after planting, before emergence immediately following drag-off, or after potatoes have fully emerged.	5-40	5-10		Y	NR	NR	NR
Vapam HL		Soil fumigant. See label for specific instructions.		NL		NL	NR	NR	NR
Vida	PP, PRE PH	Minimum of 30 days between applications. Foliar spray in early stage of crop senescence.	10-20 20-50	5-10 5	1	Y	NL	NL	7

*Application Timing and Interval

PP - Preplant surface, unless otherwise specified

PPI - Preplant incorporated

PRE - Preemergence

POST - Postemergence

NA - Not applicable

NR - No restrictions

NO - Not permitted

NL - No related information on label

S - Heavy rainfall soon after application may require retreatment.

1 Includes labeled minimum or range.

POTATO WEED CONTROL

Preplant or Preemergence Herbicides

Herbicide	Rate/Acre			Comments/Restrictions
	Coarse*	Medium	Fine	
AGENT 1.88	SEE REFLEX			
AIM EC	0.5-1 fl oz + 0.5 gal HSOC-MSO or HSOC-COC ¹ or 2 pt NIS/100 gal			PP or PRE. Apply before crop emergence and up to <4" weeds. Add Aim to tank before other herbicides.
BOUNDARY/PRESIDUAL	1.5-2 pt 2-2.4 pt	0.5-3% O.M. 2.4-2.75 pt > 3% O.M. 2.75-2.9 pt	2.4-2.75 pt 2.75-2.9 pt	Apply to russet and white skinned that are not early maturity. Do not apply to Atlantic, Bellchip, Centennial, Chipbelle, Shepody or Superior. Do not apply after June 30 in ID, OR, or WA. Do not apply > 1.5 pt on sand. Do not apply as PPI application.
CHARGER BASIC/ DUAL MAGNUM	1-2 pt: PRE or PPI 1.67 pt: after hilling (lay-by)			Do not apply more than 3.6 pt/A per crop season. Do not apply as a PPI and PRE application. Up to 2.6 pt/A may be used PRE on soils with 6-20% O.M. PHI 60 days for PPI or PRE and 40 days for POST.
CHARGER MAX/ DUAL II MAGNUM	1-2 pt			PPI or PRE. Incorporate into top 3" before planting. Use lower rates on light soils (coarse soils low in O.M.). Apply after planting as preemerge, delayed-preemerge, after drag-off or hilling treatments, but before weeds emerge. May be tank mixed with Lorox DF/Linex 4L PRE. Use up to 4 pt/A in soils with >6% O.M. Do not use on muck or peat soils. Cool, wet soil conditions may delay maturity and/or reduce yield of Superior and other early maturing varieties. Do not use on sweet potatoes or yams. Do not apply both as a PRE and an incorporated treatment.
CHARGER MAX/ DUAL II MAGNUM or CHARGER BASIC/ DUAL MAGNUM + DIMETRIC EXT/ METRICLUDE EXT	1-1.33 pt: coarse 1.33-2 pt: medium, fine + 0.33-1.33 lb DF			Apply PRE until after last hilling. Refer to Dimetric EXT/Metriclude label for restrictions and specific rate information.
CORNERSTONE/PLUS or CORNERSTONE 5 PLUS	Up to 48 fl oz or Up to 36 fl oz + 8.5-17 lb AMS/100 gal ^a			PRE. Apply prior to the emergence of potatoes for control of emerged weeds. See label for rates required for perennial weeds. ^a Include NIS or WC+NIS ² as needed.
DIMETRIC EXT/ METRICLUDE EXT	0.67- 1.33 lb			PRE. Apply after planting before crop emergence or drag-off. Do not incorporate into soil. See label for postemergence and split applications. See label for specific rates, precautions, and restrictions including sensitive varieties.
DURANGO DMA/ DURAMAX	Up to 48 fl oz + 8.5-17 lb AMS/100 gal ^a			PRE. Apply prior to the emergence of potatoes for control of emerged weeds. See label for rates required for perennial weeds which may be higher. ^a Include WC+NIS ² as needed.
EPTAM 7E or 20G	3.5-9 pt 15-30 lb			PPI or PRE incorporated. Apply and incorporate just before planting or apply and incorporate with drag after planting. See label for incorporation directions and restrictions. See label for soil type rate recommendations. FALL in MN and ND, see label.
EPTAM 7E + DIMETRIC EXT/ METRICLUDE EXT	3.5 pt + 0.33-0.67 lb	4.5 pt + 0.33-0.67 lb	4.5 pt + 0.33-0.67 lb	PPI in ID only. Incorporate immediately in top 2-3 in. of soil. May be applied through sprinkler system after planting. Observe cautions and limitations on Eptam and Dimetric EXT/Metriclude labels. Superior is sensitive to Eptam. Many thin skinned varieties (Atlantic, Shepody) are sensitive to Dimetric EXT/Metriclude.
FRAMEWORK or PROWL H2O	1.8 pt 1.5 pt 1.8 pt 1.5 pt	< 3% O.M. 2.4 pt 2 pt >3% O.M. 3.6 pt 3 pt	3.6 pt 3 pt 3.6 pt 3 pt	PRE. Apply after planting up to ground cracking, or after drag-off, but before potatoes and weeds emerge. Incorporate within 7 days if no irrigation or adequate rainfall. Do not use on peat or muck soils. Certain varieties, like White Rose, may be sensitive.
FRAMEWORK or PROWL H2O + EPTAM 7E	1.8-3.6 pt 1.5-3 pt + 3.5 pt			PPI. Apply and immediately incorporate after planting or following drag-off, but before potatoes and weeds emerge. Do not use on peat or muck soil.

*Coarse – Sand, loamy sand, sandy loam.

Medium – Loam, silt, silt loam

Fine – Silty clay loam, sandy clay loam, silty clay, sandy clay, clay loam, clay.

O.M. – Soils with low organic matter - use lower rate, with high organic matter – use higher rate within the range.

¹ Between and Superb HC (COC) and Succeed/Ultra and Destiny HC (MSO) are HSOC adjuvants, generally used at half standard COC or MSO rates.

² Class Act NG or Flex, Alliance, or Ultra-Lite may be used where herbicides require NIS and AMS or a water conditioner.

POTATO WEED CONTROL

Preplant or Preemergence Herbicides (continued)

Herbicide	Rate/Acre			Comments/Restrictions
	Coarse*	Medium	Fine	
FRAMEWORK or PROWL H2O + DIMETRIC EXT/ METRICLUDE EXT	1.8-3.6 pt 1.5-3 pt + 0.33-0.67 lb			PRE. Apply after planting or drag-off before potatoes and weeds emerge. Do not incorporate. Use lower rate on sandy soils. Do not use on peat or muck soils.
FRAMEWORK or PROWL H2O + MATRIX SG	1.8-3.6 pt 1.5-3 pt + 1-1.5 oz			PRE. Check label for tank mixes.
GRAMOXONE SL/SL 2.0	1-2 pt + 1 pt NIS/100 gal			PRE. Apply after weeds have emerged but before crop emerges. Provides no residual weed control. Use a minimum of 10 GPA by ground.
LOROX DF/LINEX 4L	1.5-2.5 lb/1.5-2.5 pt: light soil 2.5-3 lb/2.5-3 pt: heavy soil			PRE. Rate depends on texture and organic matter. Make a single application after planting but before crop emerges. Plant seed at least 2" deep. Do not spray over top of emerged potatoes. Do not use west of Rocky Mountains.
MATRIX SG	1-1.5 oz			PRE. Apply after hilling, drag-off, or reservoir tillage (dam/dike operation) but before potatoes and weeds emerge. Provides soil residual and postemergent weed control. May be tank mixed with Eptam, Prowl H2O, Dual products or Dimetric EXT/Metriclude. Moisture is required to activate Matrix. Use an adjuvant if weeds are present.
MATRIX SG + DIMETRIC EXT/ METRICLUDE EXT	1-1.5 oz + 0.33-1.33 lb			PRE. Apply after planting or after drag-off but before crop and weeds emerge. Provides soil residual and postemergent weed control. Adding Dimetric/Metriclude gives better control of kochia, pigweed, Russian thistle and common lambsquarters. Refer to Dimetric EXT/ Metriclude label for restrictions.
METRICLUDE	See Dimetric.			
OUTLOOK	12-18 fl oz	14-21 fl oz	14-21 fl oz	See label for rates with specific O.M. content. Apply PRE following planting or drag-off.
PRESIDUAL	See Boundary.			
PROWL H2O	See Framework.			
REFLEX/AGENT 1.88	1 pt			PRE. Apply after planting but before crop emergence. Crop tolerance varies by variety. May be tank-mixed with other herbicides used at this time. 24c ID in certain counties (exp. 4/2019), in OR in certain counties (exp. 12/2018) for application in potatoes grown under overhead irrigation only.
ROUNDUP POWERMAX/ WEATHERMAX**	11-32 fl oz + 8.5-17 lb AMS/100 gal ^a			PRE. Apply prior to the emergence of potatoes for control of emerged weeds. See label for rates required for perennial weeds which may be higher. ^a Or Alliance, Class Act NG or Class Act Flex.
SEQUENCE	2.5-4 pt			PRE. Contact with potato foliage will result in crop injury. Weed control may be improved by adding 2.5-4 lb/A Class Act.
SONALAN HFP	1.33-2 pt	2-2.67 pt	2.67 pt	PRE. Apply after planting and prior to crop emergence. Incorporation required. Only in AZ, CO, NE (west of Rt 281), ID, KS (west of Rt 281), MT, ND (west of Rt 281), NV, NM, OK (west of Rt 281/283), OR, SD (west of Rt 281), TX (west of and northwest of Rt 377), UT, WA, and WY.
TRUST/TREFLAN HFP or TREFLAN TR-10	1 pt 5 lb	1.25-1.5 pt 6.25-7.5 lb	1.5-2 pt 7.5-10 lb	PRE. Apply after planting but before emergence, immediately following drag-off, or after full emergence. Incorporate after application taking care not to damage seed pieces or sprouts. Do not use in ME. See rate and O.M. comments on the label.
TRUST/TREFLAN HFP + EPTAM 7EC	1 pt + 3.5-4.5 pt			PRE. Rates are for KS, MN, NE, ND, OK, SD, and TX. For ID, OR, and WA, use 0.75 pt Trust + 3.5 pt Eptam. Must be incorporated immediately. Improved wild oat control than Trust alone. See label for details.
VIDA	0.5-2 fl oz 0.5 gal HSOC-MSO or HSOC-COC ¹ or 2 pt NIS/100 gal			Do not apply >2 fl oz/A/year for all PP or after planting but before crop emergence applications.

**May use other glyphosate herbicides: Roundup brands, Cornerstone brands, Durango DMA/Duramax or others at labeled rates.

¹ Between and Superb HC (COC) and Succeed/Ultra and Destiny HC (MSO) are HSOC adjuvants, generally used at half standard COC or MSO rates.

² Class Act NG or Flex, Alliance, or Ultra-Lite may be used where herbicides require NIS and AMS or a water conditioner.

POTATO WEED CONTROL

Postemergence Herbicides

Herbicide	Rate/Acre	Comments/Restrictions
BOUNDARY/PRESIDUAL	1.5 pt: coarse 1.5-2.2 pt: medium, fine	In center pivot irrigation apply to russet and white skinned that are not early maturity. Do not apply to Atlantic, Bellchip, Centennial, Chipbelle, Shepody or Superior. Do not apply after June 30 in ID, OR, or WA.
CHARGER BASIC / DUAL MAGNUM/	1.67 pt	Apply POST to potatoes through or after hilling. May apply following a previous application. Do not exceed 3.6 pt/A in a single crop season. PHI 40 days.
CLEANSE	See Select 2 EC.	
DIMETRIC EXT/ METRICALUE EXT	0.33-0.67 lb	Do not use POST on early maturing, smooth-skinned white or red-skinned varieties or Atlantic, Shepody, Chip Bell, Bellchip or Centennial varieties. Do not use more than 1.33 lb DF per acre in a single season. Do not plant onions, lettuce, cole crops, or cucurbits the growing season following application of Dimetric EXT/ Metricalue. May be applied through sprinkler irrigation systems. In ID, OR and WA only; 2 postemergence applications of 0.33-0.67 lb/A may be made if no PRE was made. See label for more details. PHI 60 days.
EPTAM 7E	3.5-4.5 pt	Use 3.5 pt rate only in PNW. Apply as a directed spray and incorporate to clean cultivated soil after potatoes have emerged. Do not apply within 45 days of harvest. 3.5 pt/A may be injected into irrigation water after a clean cultivation.
EPTAM 7E + DIMETRIC EXT/ METRICALUE EXT	3.5-4.5 pt + 0.33-0.67 lb	Pacific Northwest only. Apply through irrigation equipment until potatoes are 4-6 in. tall. See label for details.
FRAMEWORK or PROWL H2O	1.8-3.6 pt 1.5-3 pt	See PRE rates. Certain varieties, like White Rose, may be sensitive. Apply when potatoes are less than 6" tall and weeds are less than 1" tall. May be tank mixed with Eptam.
MATRIX SG	1-1.5 oz + 1-2 pt NIS/100 gal	Apply to small actively growing weeds after crop emergence. Provides soil residual and postemergent weed control. May be tank mixed with Eptam. Moisture is required for soil activation. See label for precautions on potatoes grown for seed. May be chemigated.
MATRIX SG + DIMETRIC EXT/ METRICALUE EXT	1-1.5 oz + 0.25-0.67 lb + 1 pt NIS/100 gal	Adding Dimetric EXT/Metriclue provides a broader spectrum of weed control for Russian thistle, common lambsquarters and jimsonweed. Provides soil residual and postemergent weed control. PHI 60 days. Follow Dimetric EXT/Metriclue variety restrictions.
POAST	Midwest 16-24 fl oz: annual grasses 8 fl oz: wild proso millet 16-24 fl oz: perennial grasses Pacific Northwest 24-32 fl oz: annual grasses 24-40 fl oz: perennial grasses + 1 pt HSOC-COC ¹	For perennial weeds like quackgrass, see label for split application recommendations. Use 5-20 GPA of water with 40-60 psi; 5 GPA (min.) by air. Use flat fan or hollow cone nozzles only. Do not use flood, whirl chamber or controlled drop applicator (CDA) nozzles. Do not apply within 30 days of harvest. May tank mix with Dimetric EXT/Metriclue at 0.25-0.67 lb/A. Midwest only: See label for addition of 28% N for improved control of quackgrass, volunteer cereals, wild oat and other weeds.
PRESIDUAL	See Boundary.	
SECTION THREE	4-10.67 fl oz	30 day PHI. Maintain a 14 day interval for repeat application. Use 1 pt/A of HSOC-COC or HSOC-MSO ¹ , WC+NIS ² or 8.5-17 lb/100 gallons of AMS.
SELECT 2 EC/CLEANSE	6-16 fl oz + 1 pt HSOC-COC ¹	AMS may be added. PHI 30 days.
SELECT MAX	9-32 fl oz + 1 qt NIS/100 gal	AMS should be added. PHI 30 days. Can be tank mixed with most fungicides, except Bravo and those prohibiting them on label.
VAPAM HL	37.5-75 gal	INSECTS: Nematodes. DISEASE: Verticillium Dahliae. WEEDS: Weed seeds. Sprinkler System preplant: Apply 37.5 to 75 gal/A of Vapam HL. Inject into a sprinkler system that can deliver an even water distribution for the area being treated. Soil temperatures should be in the range of 40° F to 90° F in the treatment zone. On very light soils, keep surface area moist by sprinkling periodically for 2-3 days. Apply in a minimum of 1 acre inch of water. Vapam HL may be applied where crop stubble or vegetation exists without prior tillage, provided there is adequate soil penetration of Vapam HL.

¹ Between and Superb HC (COC) and Succeed/Ultra and Destiny HC (MSO) are HSOC adjuvants, generally used at half standard COC or MSO rates.

² Class Act NG or Flex, Alliance, or Ultra-Lite may be used where herbicides require NIS and AMS or a water conditioner.

POTATO WEED CONTROL

Postemergence Herbicides (continued)

Herbicide	Rate/Acre	Comments/Restrictions
Preharvest		
AIM EC	3.2-5.8 fl oz + 1 pt HSOC-MSO ¹	Carfentrazone. Use to desiccate potato plants and as a harvest aid for certain broadleaf weeds. Apply by ground in 20-60 GPA or by air in 5-10 GPA. Where vine growth is dense, a second application may be necessary. 5-7 days recommended between applications. Thorough coverage of the potato plant is essential. PHI 7 days. Can be used on all potatoes. Do not exceed 11.6 oz/A/season.
DEFOL 750	3.2 qt + 1 pt HSOC-COC ¹ or 1 qt NIS/100 gal	Sodium chlorate. Use to defoliate plants and facilitate harvest. Use water as carrier: 5-10 GPA by air or 10-20 GPA by ground. Apply 10 days before harvest. Addition of HSOC-COC ¹ or NIS will enhance efficacy.
REGLONE	1-2 pt + 1-2 pt NIS/100 gal	Diquat. Use to defoliate plants and facilitate harvest. Apply by ground in 20-100 GPA or 5-10 GPA by air. Where vine growth is dense, a second application may be necessary. Recommend 5 days between applications. Do not apply to drought-stressed potatoes. PHI 7 days.
RELY 280	21 fl oz	Glufosinate. Use to defoliate plants and facilitate harvest. Potato varieties with heavy or dense vines may require an application of another desiccation product to complete vine desiccation. Thorough coverage is essential. Apply Rely 280 to naturally senescing potato vines in 5-10 gal of water with aerial equipment and 20-100 gal of water with ground equipment. Do not make more than one application per growing season. Do not apply to potatoes grown for seed stock. PHI 9 days.
VIDA	2-5.5 fl oz + 1 pt HSOC-MSO ¹	2-5.5 fl oz/A in tank mix with other desiccant; 5.5 fl oz/A alone. Must be tank mixed or applied in sequence with other desiccant products. A repeat application of Vida may be needed under certain climatic conditions for complete desiccation. Can be used on all potatoes. Do not make >2 applications or exceed 11 fl oz/A/year for desiccation alone or desiccation plus PP, PRE uses.

¹ Between and Superb HC (COC) and Succeed/Ultra and Destiny HC (MSO) are HSOC adjuvants, generally used at half standard COC or MSO rates.

² Class Act NG or Flex, Alliance, or Ultra-Lite may be used where herbicides require NIS and AMS or a water conditioner.

POTATO INSECT CONTROL

Labeled Insecticides

INSECT*	POTATO																																	
	Actara	Admire Pro	Advise Four	Agri-Flex	Agri-Mek 0.15 EC, SC	Arctic	Asana XL	Assail 30SG/70WP	Athena	Avaunt	Baythroid XL	Belay Insecticide	Beleaf	Besiege	Blackhawk	Brigadier	Capture LFR	Certador	Comite	Coragen	Cruiser 5FS ¹ /Maxx Potato ¹⁹ /Maxx Potato Extreme ¹⁹ (seed treatment)	CruiserMaxx Vibrance Potato	Declare	Delta Gold	Dimate 4E/Dimethoate 4E	Endigo ZC	Entrust SC	Fastac EC/CS	Fulfill	Gladiator				
Aphid	●	●	●			●	●	●			S	●	●	●		●		S			●	●	●	●	●	●	●	●	●	●	●	●		
Armyworm														●	●								●	●			●	●	●	●	●	●	●	
Aster Leafhopper												●				●							●	●								●	●	
Banded Cucumber Beetle																																		
Beet Armyworm						S	S							●	●						●						●	●	●	●	●	●	●	
Blister Beetle															●											●								
Brown Marmorated Stink Bug																																		
Cabbage Looper																																		
Colorado Potato Beetle	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Cucumber Beetle																																		
Cutworm																																		
Diamondback Moth																																		
Dipterous Leafminer																																		
European Corn Borer																																		
Fall Armyworm																																		
Flea Beetle	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Grasshopper																																		
Leafhopper																																		
Leafminer																																		
Looper																																		
Liriozoma Leafminer																																		
Nematode																																		
Plant Bug																																		
Potato Leafhopper	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Potato Tuberworm																																		
Psyllid																																		
Southern Armyworm																																		
Sweet Potato Whitefly																																		
Symphylan																																		
Tarnished Plantbug																																		
Thrips																																		
Two-Spotted Spider Mite																																		
Vegetable Weevil																																		
Wireworm																																		

(continued)

* Many other insects may be controlled, see label.

S - suppression  See Insecticide Resistance Mangement in the TECHNICAL INFORMATION section.

¹ With in-furrow spray at planting.

² Seed piece only for Cruiser 5FS.

³ Larvae.

⁷ Not for beet armyworm.

⁸ Beet and yellow-striped.

⁹ Adult.

¹⁰ Lygus species.

¹¹ Controls larva, suppresses adult.


¹² Black only.

¹³ 24c, 2ee or Supplemental label.

¹⁶ Labeled for stink bug.

¹⁹ CruiserMaxx Potato and CruiserMaxx Potato Extreme contain fungicides; see Potato Disease Control section.

BEE ALERT

 See Insecticide Classification in the Technical Section for information on insecticide toxicity to bees.

POTATO INSECT CONTROL

Labeled Insecticides (continued)

INSECT*	INSECTICIDE																													
	Hero	Karate Z/Warrior II	Leverage 360	Malathion 5	Malathion 5EC	Malathion 8 Flowable	Mocap EC/15G	Movento/Movento HL	Mustang Maxx	Oberon 25C/4SC	Omite 6E	Onager	Paradigm/Lambda-Cy Ag	Platinum	Radiant SC	Regent	Requiem EC	Sevin XLR Plus	Sivanto prime	Steed	Telone II	Thimet 20G	Transform WG	Trigard	Tundra/Brigade 2EC/Bifen 2 AG Gold	Velum Prime	Venom 20SG	Verimark	Voliam Flexi	Vydate L or CLV
Aphid	●	●	●	●	●	●	●	S				●	●				●	●	●			●	●					S	●	●
Armyworm	●	●						●				●	●	7				●	●	●								●	●	●
Aster Leafhopper	●	●						●				●	●					●	●	●										
Banded Cucumber Beetle	●	●						●				●	●					●	●	●					●					
Beet Armyworm		●						S				●	●					●	●	●								●	●	
Blister Beetle		●		●		●						●	●						●	●										
Brown Marmorated Stink Bug		16	15									16	●				16	●	●	●										
Cabbage Looper		●	●					●				●	●					●	●	●								●	●	
Colorado Potato Beetle	●	●	●					●				●	●	●				●	●	●			●	●			●	●	●	●
Cucumber Beetle	●	●						●				●	●					●	●	●					●					
Cutworm	●	●	●					●				●	●					●	●	●										
Diamondback Moth																														
Dipterous Leafminer															●															
European Corn Borer	●	●	●					●				●	●					●	●	●								●	●	
Fall Armyworm		●										●	●					●	●	●										
Flea Beetle	●	●	●					●				●	●					●	●	●			11		12		●	S	●	●
Grasshopper	●	●		●	●			●				●	●					●	●	●										
Leafhopper	●	●		●	●	●		●				●	●					●	●	●			●	●			●	●	●	●
Leafminer		S										S											●	●						
Looper	●	●						●				●	●						●	●										
Liriozoma Leafminer														●																
Nematode							●	S																		S				●
Plant Bug	●	●										●	●											13						●
Potato Leafhopper	●	●	●					●				●	●						●	●							●	●	6	
Potato Tuberworm	●	●	●									●	●					●	●	●										
Psyllid	●	●	●				●		●		●	●	S ¹³				●	●	●			●	●			●	S		●	
Southern Armyworm		●										●	●					●	●	●										
Sweet Potato Whitefly	●	●						●				●	●				●	●	●				●							
Symphylan						●											●	●	●											
Tarnished Plantbug		●	●					●				●	●					●	●	●										●
Thrips		●						●				●	●																	
Two-Spotted Spider Mite	●	S					S		●	●	●	S																		
Vegetable Weevil		●						●				●	●																	
Wireworm						●	S					21	●		●							13	●		●					●

* Many other insects may be controlled, see label.

S - suppression  See Insecticide Resistance Management in the TECHNICAL INFORMATION section.

¹ With in-furrow spray at planting.

² Seed piece only.

³ Larvae.

⁷ Not for beet armyworm.

⁸ Beet and yellow-striped.

⁹ Adult.

¹⁰ Lygus species.

¹¹ Controls larva, suppresses adult.


¹² Black only.

¹³ 24c, 2ee or Supplemental label.

¹⁶ Labeled for stink bug.


¹⁹ CruiserMaxx Potato and CruiserMaxx Potato Extreme contain fungicides; see Potato Disease Control section.

BEE ALERT

 See Insecticide Classification in the Technical Section for information on insecticide toxicity to bees.

POTATO INSECT CONTROL

Insect Treatment Guidelines


Insecticide	Rate/Acre	PHI	Comments/Restrictions
APHID			ET: many aphids transmit potato viruses. Treat seed stock when aphid densities reach 10/100 leaves. Table stock - treat when aphids reach 30-50/100 leaves. Sample middle to lower leaves.
ACTARA	3 fl oz	14	Apply when population is increasing and reaches threshold. Do not exceed 6 oz/season. Use \geq 10 GPA by ground or \geq 5 GPA by air. Control may require 2 applications at 7-10 day intervals.
ADMIRE PRO	5.7-8.7 fl oz	0	In-furrow spray at planting, subsurface side-dress, or narrow band at ground cracking. 0.17-0.35 fl oz/100 pounds seed. Use 0.35 fl oz/100 pound seed for aphid vectored diseases. Use 1.3 fl oz foliar; PHI 7 days. Note 1.
ADVISE FOUR	0.45-0.65 fl oz/1000' row	-	See label for row spacing and seed piece rate. Note 1.
ASSAIL 30SG/70WP	2.5-4 fl oz/1-1.7 oz	7	Use 4 fl oz/1.7 oz for irrigation treatment. Note 8.
ATHENA	7-17 fl oz	21	Note 5.
BELAY INSECTICIDE	2-3 fl oz 0.4-0.6 fl oz/100 lb	14	Maximum of 3 applications at 7 day intervals. 9-12 fl oz/A in-furrow or side-dress applications. See label for seed piece application information.
BELEAF	2-2.8 fl oz	14	Beleaf can be used on all potatoes. Begin applications as populations of aphids begin to build or at economic thresholds according to pest management guidelines. Apply a minimum of 10 GPA by ground and a minimum of 3 GPA by air. A maximum of 8.4 oz/A can be applied. Do not make > 3 applications per use season. Can be applied at 7.2-12 fl oz in-furrow or side-dress for aphids. Note 8.
BESIEGE	6-9 fl oz	14	Avoid using exclusively for season long control to manage resistance development. Maximum 27 fl oz/A/season. Note 8.
BRIGADIER	3.8-6.14 fl oz	21	Rate range is for foliar uses; for at plant, use 16-25.6 fl oz. Note 8.
CERTADOR	7.5-9.5 fl oz: foliar 1.2-3.7 fl oz/1000' row	7	Use only one application method. Apply as foliar when pests appear, as needed but not more than every 14 days. See label for row spacing rates. Note 1.
CRUISER 5FS or CRUISERMAXX POTATO or CRUISERMAXX POTATO EXTREME	0.11-0.16 oz/cwt or 0.22-0.27 fl oz/cwt or 0.31 fl oz/cwt	-	Seed treatment. Rate depends on seeding rate and row spacing. Labeled for green peach and potato aphid. Note 6.
CRUISERMAXX VIBRANCE POTATO	0.5 fl oz/cwt	-	Seed treatment. Note 6.
DECLARE	1.02-1.54 fl oz	7	Timing and frequency should be based on locally-determined economic thresholds. Only exposed insects (larvae or adults) can be controlled with foliar applications. Apply in minimum 10 GPA by ground, 2 GPA by air.
DELTA GOLD	1-2.4 fl oz	3	Apply \geq 2 GPA in sufficient water for full foliage coverage. Do not exceed 12 fl oz/A/season. Labeled for pea aphid and also at 1.5-2.4 fl oz or for suppression of green peach aphid. Note 8.
DIMATE 4E/DIMETHOATE 4E	0.5-1 pt	0	Potatoes may be harvested on day of application. Note 8.
ENDIGO ZC	4-4.5 fl oz	14	Note 8.
FASTAC EC/CS	3.2-3.8 fl oz	1	Aphid control may be variable. Notes 12,13.
FULFILL	2.75-5.5 fl oz	14	Residual activity up to 14 days. 2 applications may be needed. Apply when the aphid population begins to build. A penetrating type spray adjuvant is recommended. Do not use with sticker type adjuvants. Do not exceed 5.5 oz/season. Thorough coverage is essential.
GLADIATOR	19 fl oz	14	Maximum 57 fl oz/A/year. Note 5.
HERO	4-10.3 fl oz	21	Note 8.
KARATE Z/WARRIOR II	1.28-1.92 fl oz	7	Note 8.
LEVERAGE 360	2.8 fl oz	7	Apply when insects appear. Minimum 10 GPA by ground and 2 GPA by air. Maximum of 12.8 fl oz/crop season. Use NIS for ground and COC for aerial applications. Notes 8, 9.
MALATHION 5 OR MALATHION SEC	1 pt or 2 pt	0	Maximum of 2 applications/year. 7-day minimum retreatment interval.
MALATHION 8 FLOWABLE	1.5 pt	0	Maximum of 2 applications/year. 7-day minimum retreatment interval.
MOVENTO/MOVENTO HL	4-5 fl oz/2-2.5 fl oz	7	Can be applied by air or ground. Must be applied with an adjuvant with spreading and penetrating properties.
MUSTANG MAXX	3.2-4 fl oz	1	Suppression. Do not apply > 24 fl oz/A/season. Notes 5, 8.
ONAGER	16-24 pt	21	Western U.S only (see label for geography). For application prior to adult mite buildup (will not control adults). No more than 1 application/year. Supplemental label (exp. 12/2019) for lower rate.
PARADIGM/LAMBDA-CY AG	2.56-3.84 fl oz	7	Note 8.
PLATINUM	5-8 fl oz		0.35-0.55 oz/1000' of row. In-furrow at planting.
REQUIEM EC	2-3 qt	0	Green peach aphid. Apply when thresholds have been reached. Thorough coverage is necessary. Use InterLock or MasterLock.
SIVANTO PRIME	7-10.5 fl oz	7	Note 14.

PHI – preharvest interval days.

SEE NOTES AT END OF SECTION.

POTATO INSECT CONTROL

Insect Treatment Guidelines (continued)



Insecticide	Rate/Acre	PHI	Comments/Restrictions
APHID (continued)			
STEED	3.5-4.7 fl oz	21	Do not make application < 21 days apart. Maximum 2 foliar applications/year. Note 8.
THIMET 20G	8.5-11.3 oz: light soils 13-17.3 oz: heavy soils		Distribute the granules evenly in the furrow or band on each side of the row at planting time. For postemergent application, apply granules 4-6 weeks after planting on each side of the row before covering at hilling. Do not apply postemergence in heavy soils.
TRANSFORM WG	0.75-1.5 oz	7	Do not apply this product until after petal fall. Notes 8, 15.
VERIMARK	13.5 fl oz		Apply to soil at planting. See label for specific rates. For control of Green peach aphid. May be applied as a seed treatment.
VOLIAM FLEXI	4 oz	14	Maximum 8 oz/A/season.
VYDATE L or CLV	2-4 pt or 1-2.1 pt	7	Apply when insects appear. Maximum 6 applications. Note 11.
COLORADO POTATO BEETLE			ET: egg masses - spray when 30-50% of egg masses have hatched. Leaf defoliation - 20-30% preflower, 5-10% flowering and 30% tuber formation. Avoid insect resistance to pyrethroids by rotating insecticide classes.
ACTARA	1.5-3 fl oz	14	Do not exceed 6 oz/season. Use ≥ 10 GPA by ground or ≥ 5 GPA by air. Apply at 7-10 day interval or when pests reach damaging levels.
ADMIRE PRO	5.7-8.7 fl oz	0	In-furrow spray at planting, subsurface side-dress, or narrow band at ground cracking. 0.17-0.35 fl oz/100 pounds seed. Use 0.35 fl oz/100 pound seed for aphid vectored diseases. Use 1.3 fl oz foliar; PHI 7 days. Note 1.
ADVISE FOUR	0.45-0.65 fl oz/1000' row	-	See label for row spacing and seed piece rate. Note 1.
AGRI-FLEX	4.75 fl oz	14	Must be mixed with non-ionic activator type adjuvant (but not sticker type) approved for use on tuberous and corm vegetables crop subgroup. Ground (in ≥20 GPA) or aerial (in ≥5 GPA) application permitted.
AGRI-MEK 0.15 EC, SC	8-16 fl oz, 1.75-3.5 fl oz	14	Apply ≥ 20 GPA ground or ≥ 5 GPA air when 50% of egg masses have hatched. Do not make > 2 applications per year or exceed 32 fl oz of 0.15 EC/A/crop, 7 fl oz of SC/A/crop.
ARCTIC	4-8 fl oz	14	Apply in ≥ 2 GPA by air or 10 GPA by ground. Maximum 32 fl oz/A/season. Notes 8, 11.
ASANA XL	5.8-9.6 fl oz	7	Repeat as necessary to maintain control. Do not exceed 0.35 lb a.i. per acre per season. Resistant populations have been found in the Red River Valley of MN and ND. Notes 5, 8, 11.
ASSAIL 30SG/70WP	1.5-4 fl oz/0.6-1.7 oz	7	Use 2.5-4 fl oz/1-1.7 oz for irrigation treatment. Note 8.
ATHENA	7-17 fl oz	21	Notes 5, 11.
AVAUNT	3.5-6 fl oz	7	May need to include PBO. See label.
BAYTHROID XL	1.6-2.8 fl oz	0	Controls non-pyrethroid resistant beetles. Apply in a minimum volume of 5 GPA by air or 15 GPA by ground and a maximum of 0.25 inch of water by chemigation. Do not apply > 16.8 fl oz per crop season. Notes 8, 11.
BELAY INSECTICIDE	2-3 fl oz	14	Maximum of 3 applications at 7 day intervals. 9-12 fl oz/A for in-furrow or side dress applications. See label for seed piece application information.
BESIEGE	6-9 fl oz	14	Avoid using exclusively for season long control to manage resistance development. Maximum 27 fl oz/A/season. Notes 8, 11.
BLACKHAWK	1.7-3.3 oz	7	Note 8.
BRIGADIER	4.8-6.14 fl oz	21	Rate range is for foliar uses; for at plant, use 16-25.6 fl oz. Notes 8, 11.
CERTADOR	7.5-9.5 fl oz: foliar 1.2-3.7 fl oz/1000' row	7	Use only one application method. Apply as foliar when pests appear, as needed but not more than every 14 days. See label for row spacing rates. Note 1.
CORAGEN	3.5-7.5 fl oz	14	Do not apply more than twice within 30 days. Add MSO at 1 gal/100 gal. 2ee ID, NV, OR, WA (exp. 12/2019) for lower rate of 2-5 fl oz/A; 2ee DE (exp. date not given) for lower rate of 3.5-5 fl oz/A.
CRUISER SFS or CRUISERMAXX POTATO or CRUISERMAXX POTATO EXTREME	0.11-0.16 oz/cwt or 0.22-0.27 fl oz/cwt or 0.31 fl oz/cwt	-	Seed treatment. Rate depends on seeding rate and row spacing. Notes 6, 8.
CRUISERMAXX VIBRANCE POTATO	0.5 fl oz/cwt	-	Seed treatment. Note 6.
DECLARE	1.02-1.54 fl oz	7	Timing and frequency should be based on locally-determined economic thresholds. Only exposed insects (larvae or adults) can be controlled with foliar applications. Apply in minimum 10 GPA by ground, 2 GPA by air.
DELTA GOLD	1.5-2.4 fl oz	3	Apply ≥ 2 GPA in sufficient water for full foliage coverage. Do not exceed 12 fl oz/A/season. Notes 8, 11.
ENDIGO ZC	2.5-4.5 fl oz	14	Notes 8, 11.
ENTRUST SC	3-10 fl oz	7	Apply as a foliar spray when pests appear, target eggs at hatch or small larvae. Use higher rate for larger larvae or moderate to severe infestations. Note 8.

PHI – preharvest interval days.

SEE NOTES AT END OF SECTION.

POTATO INSECT CONTROL

Insect Treatment Guidelines (continued)


Insecticide	Rate/Acre	PHI	Comments/Restrictions
COLORADO POTATO BEETLE (continued)			
FASTAC EC/CS	3.2-3.8 fl oz	1	Notes 12, 13.
GLADIATOR	19 fl oz	14	Maximum 57 fl oz/A/year. Notes 5, 11.
HERO	4-10.3 fl oz	21	Notes 8, 11.
KARATE Z/WARRIOR II	1.28-1.92 fl oz	7	Notes 8, 11.
LEVERAGE 360	2.8 fl oz	7	Apply when insects appear. Minimum 10 GPA by ground and 2 GPA by air. Maximum of 12.8 fl oz/ crop season. Use NIS for ground and COC for aerial applications. Notes 8, 9, 11.
MUSTANG MAXX	3.2-4 fl oz	1	Do not apply > 24 fl oz/A/season. Does not control resistant beetles. Notes 5, 8, 11.
PARADIGM/LAMBDA-CY AG	2.56-3.84 fl oz	7	Notes 8, 11.
PLATINUM	5-8 fl oz		
RADIANT SC	4.5-8 fl oz	7	Do not make > 2 consecutive applications. Note 8.
SEVIN XLR PLUS	1-2 qt	7	Do not use dilutions greater than 1:39 with water where washoff resistance is desired. Apply every 7 days up to 6 times per year. Resistant populations exist. Note 8.
SIVANTO PRIME	10.5-14 fl oz	7	Note 14.
STEED	3.5-4.7 fl oz	21	Do not make application < 21 days apart. Maximum 2 foliar applications/year. Coverage is essential, use adjuvants. Note 8.
THIMET 20G	8.5-11.3 oz: light soils 13-17.3 oz: heavy soils	90	Early season control on heavy clay soils. Distribute granules evenly in furrow or band on each side of row at planting. For postemergent application in light soils only, apply granules 4-6 weeks after planting on each side of the row before covering at hilling.
TRIGARD	2.66-5.32 oz (one-two packets)		Most effective for control of first and second instar larvae. Does not control adults. Allow 7 days between applications. 17-day PHI.
VENOM 70SG	1-1.5 oz	7	May apply to soil as band, in-furrow or side dress at 6.5-7.5 oz.
VERIMARK	6.75-13.5 fl oz		Apply to soil at planting. See label for specific rates. May be applied as a seed treatment.
VOLIAM FLEXI	4 oz	14	Maximum 8 oz/A/season.
VYDATE L or CLV	1-4 pt or 8.5-34 fl oz	7	
CUTWORM			ET variegated cutworm: 4 or more worms per row foot. ET black cutworm: 2 plants/100 with tuber feeding
ARCTIC	4-8 fl oz	14	Apply in ≥ 2 GPA by air or 10 GPA by ground. Maximum 32 fl oz/A/season. Note 8.
ASANA XL	5.8-9.6 fl oz	7	Repeat as necessary to maintain control. Do not exceed 0.35 lb a.i. per acre per season. Notes 5, 8.
ATHENA	7-17 fl oz	21	Note 5.
BAYTHROID XL	0.8-1.6 fl oz	0	Apply a minimum of 5 GPA by air and 15 GPA by ground. Do not apply > 16.8 fl oz per crop season. Note 8.
BESIEGE	5-8 fl oz	14	Maximum 27 fl oz/A/season. Note 8.
DECLARE	0.77-1.28 fl oz	7	Timing and frequency should be based on locally-determined economic thresholds. Only exposed insects (larvae or adults) can be controlled with foliar applications. Apply in minimum 10 GPA by ground, 2 GPA by air.
DELTA GOLD	1-2.4 fl oz	3	Apply ≥ 2 GPA in sufficient water for full foliage coverage. Do not exceed 12 fl oz/A/season. Note 8.
ENDIGO ZC	2.5-4.5 fl oz	14	Note 8.
FASTAC EC/CS	1.3-3.8 fl oz	1	Notes 12, 13.
GLADIATOR	8-19 fl oz	14	Maximum 57 fl oz/A/year. Note 5.
HERO	2.6-6.1 fl oz	21	Note 8.
KARATE Z/WARRIOR II	0.96-1.60 fl oz	7	Note 8.
LEVERAGE 360	2.8 fl oz	7	Apply when insects appear. Minimum 10 GPA by ground and 2 GPA by air. Maximum of 12.8 fl oz/ crop season. Use NIS for ground and COC for aerial applications. Notes 8, 9.
MUSTANG MAXX	1.28-4 fl oz	1	Do not apply > 24 fl oz/A/season. Notes 5, 8.
PARADIGM/LAMBDA-CY AG	1.92-3.2 fl oz	7	Note 8.
SEVIN XLR PLUS	1-2 qt	7	Do not use dilutions greater than 1:39 with water where washoff resistance is desired. Apply every 7 days up to 6 times per year. Most effective on foliage feeders. Note 8.
STEED	2.5-3.5 fl oz	21	Do not make application < 21 days apart. Maximum 2 foliar applications/year. Note 8.
EUROPEAN CORN BORER			ET: >1 egg mass/25 leaves on mid to lower leaves.

PHI – preharvest interval days.

SEE NOTES AT END OF SECTION.

POTATO INSECT CONTROL

Insect Treatment Guidelines (continued)

Insecticide	Rate/Acre	PHI	Comments/Restrictions
EUROPEAN CORN BORER (continued)			
ARCTIC	4-8 fl oz	14	Apply in \geq 2 GPA by air or 10 GPA by ground. Maximum 32 fl oz/A/season. Note 8.
ASSAIL 30SG/70WP	2.5-4 fl oz/1.1-1.7 oz	7	Ovicide. Note 8.
ATHENA	7-17 fl oz	21	Note 5.
AVAUNT	3.5-6 fl oz	7	Also see labels for CPB in some states.
BAYTHROID XL	1.6-2.8 fl oz	0	Apply a minimum of 5 GPA by air and 15 GPA by ground. Do not apply > 16.8 fl oz per crop season. Note 8.
BESIEGE	6-9 fl oz	14	Maximum 27 fl oz/A/season. Note 8.
BLACKHAWK	1.7-3.3 oz	7	Note 8.
BRIGADIER	4.8-6.14 fl oz	21	Note 8.
CORAGEN	3.5-7.5 fl oz	14	Do not apply more than twice within 30 days. 2ee ID, NV, OR, WA (exp. 12/2019) for lower rate of 2-5 fl oz/A; 2ee DE (exp. date not given) for lower rate of 3.5-5 fl oz/A.
DECLARE	1.02-1.54 fl oz	7	Timing and frequency should be based on locally-determined economic thresholds. Only exposed insects (larvae or adults) can be controlled with foliar applications. Apply in minimum 10 GPA by ground, 2 GPA by air.
DELTA GOLD	1.5-2.4 fl oz	3	Apply \geq 2 GPA in sufficient water for full foliage coverage. Do not exceed 12 fl oz/A/season. Note 8.
ENDIGO ZC	3-4 fl oz	14	Note 8.
ENTRUST SC	3-10 fl oz	7	Apply as a foliar spray when pests appear, target eggs at hatch or small larvae. Use higher rate for larger larvae or moderate to severe infestations. Note 8.
FASTAC EC/CS	1.8-3.8 fl oz	1	Notes 12, 13.
GLADIATOR	8-19 fl oz	14	Maximum 57 fl oz/A/year. Nonionic surfactant recommended. Note 5.
HERO	4-10.3 fl oz	21	Note 8.
KARATE Z/WARRIOR II	1.28-1.92 fl oz	7	Note 8.
LEVERAGE 360	2.8 fl oz	7	Apply when insects appear. Minimum 10 GPA by ground and 2 GPA by air. Maximum of 12.8 fl oz/ crop season. Use NIS for ground and COC for aerial applications. Notes 8, 9.
MUSTANG MAXX	1.76-4 fl oz	1	Do not apply > 24 fl oz/A/season. Notes 5, 8.
PARADIGM/LAMBDA-CY AG	2.56-3.84 fl oz	7	Note 8.
RADIANT SC	4.5-8 fl oz	7	Do not make > 2 consecutive applications. Note 8.
SEVIN XLR PLUS	1-2 qt	7	Do not use dilutions greater than 1:39 with water where washoff resistance is desired. Apply every 7 days up to 6 times per year. Note 8.
STEED	3.5-4.7 fl oz	21	Do not make application < 21 days apart. Maximum 2 foliar applications/year. Note 8.
VERIMARK	6.75-13.5 fl oz		For suppression only. Apply to soil at planting. See label for specific rates. May be applied as a seed treatment.
VOLIAM FLEXI	4 oz	14	Maximum 8 oz/A/season.
FLEA BEETLE			ET: treat when 10% of leaf area is lost due to feeding or if adults exceed 50/25 sweeps.
ACTARA	1.5-3 fl oz	14	Do not exceed 6 oz/season. Use \geq 10 GPA by ground or \geq 5 GPA by air. Apply at 7-10 day interval or when pests reach damaging levels.
ADMIRE PRO	5.7-8.7 fl oz	0	In-furrow spray at planting, subsurface side-dress, or narrow band at ground cracking. 0.17-0.35 fl oz/100 pounds seed. Use 0.35 fl oz/100 pound seed for aphid vectored diseases. Use 1.3 fl oz/A foliar; PHI 7 days. Note 1.
ADVISE FOUR	0.45-0.65 fl oz/1000' row	-	See label for row spacing and seed piece rate. Note 1.
AGRI-FLEX	4.75 fl oz	14	Must be mixed with non-ionic activator type adjuvant (but not sticker type) approved for use on tuberous and corm vegetables crop subgroup. Ground (in \geq 20 GPA) or aerial (in \geq 5 GPA) application permitted.
ARCTIC	4-8 fl oz	14	Apply in \geq 2 GPA by air or 10 GPA by ground. Maximum 32 fl oz/A/season. Note 8.
ASANA XL	5.8-9.6 fl oz	7	Repeat as necessary to maintain control. Do not exceed 0.35 lb a.i./A/season. Note 8.
ASSAIL 30SG/70WP	1.5-2.5 fl oz/ 0.6-1.1 oz	7	Note 8.
ATHENA	7-17 fl oz	21	Note 5.
BAYTHROID XL	1.6-2.8 fl oz	0	Apply a minimum of 5 GPA by air and 15 GPA by ground. Do not apply > 16.8 fl oz/A/season. Note 8.
BELAY INSECTICIDE	2-3 fl oz	14	Do not exceed 3 applications. 9-12 fl oz/A for in-furrow or side dress applications. See label for seed piece application information.
BESIEGE	6-9 fl oz	14	Maximum 27 fl oz/A/season. Note 8.
BRIGADIER	4.8-6.14 fl oz	21	Rate range is for foliar uses; for at plant, use 16-25.6 fl oz. Note 8.
CAPTURE LFR	12.75-25.5 fl oz	-	Apply 25.5 fl oz at-plant in 8-12" T-band or in-furrow or 4.2-12.75 fl oz at lay-by and incorporate. Larvae only. Apply at 10 GPA in the band.

PHI – preharvest interval days.

SEE NOTES AT END OF SECTION.

POTATO INSECT CONTROL

Insect Treatment Guidelines (continued)

Insecticide	Rate/Acre	PHI	Comments/Restrictions
FLEA BEETLE (continued)			
CRUISER 5FS or CRUISERMAXX POTATO or CRUISERMAXX POTATO EXTREME	0.11-0.16 oz/cwt or 0.22-0.27 fl oz/cwt or 0.31 fl oz/cwt	–	Seed treatment. Rate depends on seeding rate and row spacing. Notes 6, 8.
CRUISERMAXX VIBRANCE POTATO	0.5 fl oz/cwt	–	Seed treatment. Note 6.
DECLARE	1.02-1.54 fl oz	7	Timing and frequency should be based on locally-determined economic thresholds. Only exposed insects (larvae or adults) can be controlled with foliar applications. Apply in minimum 10 GPA by ground, 2 GPA by air.
DELTA GOLD	1.5-2.4 fl oz	3	Apply ≥ 2 GPA in sufficient water for full foliage coverage. Do not exceed 12 fl oz/A/season. Note 8.
ENDIGO ZC	2.5-4.5 fl oz	14	Note 8.
FASTAC EC/CS	1.8-3.8 fl oz	1	Notes 12, 13.
GLADIATOR	8-19 fl oz	14	Maximum 57 fl oz/A/year. Nonionic surfactant recommended. Note 5.
HERO	2.6-6.1 fl oz	21	Note 8.
KARATE Z/WARRIOR II	1.28-1.92 fl oz	7	Adults. Note 8.
LEVERAGE 360	2.8 fl oz	7	Apply when insects appear. Minimum 10 GPA by ground and 2 GPA by air. Maximum of 12.8 fl oz/ crop season. Use NIS for ground and COC for aerial applications. Notes 8, 9.
MUSTANG MAXX	1.76-4 fl oz	1	Do not apply > 24 fl oz/A/season. Notes 5, 8.
PARADIGM/LAMBDA-CY AG	2.56-3.84 fl oz	7	Adults. Note 8.
PLATINUM	5-8 fl oz		In-furrow at planting. 0.35-0.55 oz/1000' row.
SEVIN XLR PLUS	0.5-1 qt	7	Do not use dilutions greater than 1:39 with water where washoff resistance is desired. Apply every 7 days up to 6 times per year. Note 8.
STEED	2.5-3.5 fl oz	21	Do not make application < 21 days apart. Maximum 2 foliar applications/year. Note 8.
THIMET 20G	8.5-11.3 oz: light soils 13-17.3 oz: heavy soils	90	Controls flea beetle larvae and suppresses adults. Distribute granules evenly in furrow or band on each side of row at planting. For postemergent application, apply granules 4-6 weeks after planting on each side of the row before covering at hilling. Do not apply postemergence in heavy soils.
VENOM 70SG	1-1.5 oz	7	May apply to soil as band, in-furrow or side dress at 6.5-7.5 oz/A.
VERIMARK	10-13.5 fl oz		Apply to soil at planting. See label for specific rates. May be applied as a seed treatment.
VOLIAM FLEXI	4 oz	14	Maximum 8 oz/A/season.
VYDATE L or CLV	2-4 pt or 1-2.1 pt	7	Apply when insects first appear. Maximum 6 applications. Note 11.
GRASSHOPPER			
ASANA XL	5.8-9.6 fl oz	7	Repeat as necessary to maintain control. Do not exceed 0.35 lb a.i./A/season. Notes 5, 8.
ATHENA	7-17 fl oz	21	Note 5.
BESIEGE	6-9 fl oz	14	Maximum 27 fl oz/A/season. Note 8.
BRIGADIER	4.8-6.14 fl oz	21	Note 8.
DECLARE	1.02-1.54 fl oz	7	Timing and frequency should be based on locally-determined economic thresholds. Only exposed insects (larvae or adults) can be controlled with foliar applications. Apply in minimum 10 GPA by ground, 2 GPA by air.
DIMATE 4E/DIMETHOATE 4E	0.5-1 pt	0	Potatoes may be harvested on day of application. Note 8.
ENDIGO ZC	3-4 fl oz	14	Note 8.
FASTAC EC/CS	3.2-3.8 fl oz	1	Notes 12, 13.
GLADIATOR	19 fl oz	14	Maximum 57 fl oz/A/year. Nonionic surfactant recommended. Note 5.
HERO	2.6-6.1 fl oz	21	Note 8.
KARATE Z/WARRIOR II/	1.28-1.92 fl oz	7	Note 8.
MALATHION 5 OR MALATHION SEC	2 pt or 2 pt	0	Maximum of 2 applications/year. 7-day minimum retreatment interval.
MUSTANG MAXX	3.2-4 fl oz	1	Do not apply > 24 fl oz/A/season. Notes 5, 8.
PARADIGM/LAMBDA-CY AG	2.56-3.84 fl oz	7	Note 8.
STEED	3.5-4.7 fl oz	21	Do not make application < 21 days apart. Maximum 2 foliar applications/year. Note 8.




PHI – preharvest interval days.

SEE NOTES AT END OF SECTION.

POTATO INSECT CONTROL

Insect Treatment Guidelines (continued)



Insecticide	Rate/Acre	PHI	Comments/Restrictions
LEAFHOPPER			ET: 2 PLH adults/sweep or 1 adult/sweep plus 15 nymphs/25 leaves.
ACTARA	1.5-3 fl oz	14	Do not exceed 6 oz/season. Use ≥ 10 GPA by ground or ≥ 5 GPA by air. Apply at 7-10 day interval or when pests reach damaging levels. May need 2 applications at 7-10 day intervals for control.
ADMIRE PRO	5.7-8.7 fl oz	0	In-furrow spray at planting, subsurface side-dress, or narrow band at ground cracking. 0.17-0.35 fl oz/100 pounds seed. Use 0.35 fl oz/100 pound seed for aphid vectored diseases. Use 1.3 fl oz/a foliar; PHI 7 days. Note 1.
ADVISE FOUR	0.2-0.4 fl oz/1000' row	–	Seed piece treatment. Note 1.
AGRI-FLEX	4.75 fl oz	14	Must be mixed with non-ionic activator type adjuvant (but not sticker type) approved for use on tuberous and corm vegetables crop subgroup. Ground (in ≥ 20 GPA) or aerial (in ≥ 5 GPA) application permitted.
ARCTIC	4-8 fl oz	14	Apply in ≥ 2 GPA by air or 10 GPA by ground. Maximum 32 fl oz/A/season. Note 8.
ASANA XL	2.9-9.6 fl oz	7	Repeat as necessary to maintain control. Do not graze livestock on treated vines. Do not exceed 0.35 lb a.i./A/season. Use 5.8-9.6 fl oz/A for PLH, 2.9-5.8 fl oz/A for other leafhoppers. Notes 5, 8.
ASSAIL 30SG/70WP	1.5-4 fl oz/0.6-1.7 oz	7	Use 4 fl oz/A/1.7 oz/A for irrigation treatment. Note 8.
ATHENA	7-17 fl oz	21	Note 5.
BAYTHROID XL	0.8-1.6 fl oz	0	Apply a minimum of 5 GPA by air and 15 GPA by ground. Do not apply > 16.8 fl oz per crop season. Note 8.
BELAY INSECTICIDE	2-3 fl oz	14	Maximum of 3 applications at 7 day intervals. 9-12 fl oz/A for in-furrow or side dress applications. See label for seed piece application information.
BESIEGE	5-8 fl oz	14	Maximum 27 fl oz/A/season. Note 8.
BRIGADIER	3.8-6.14 fl oz	21	Rate range is for foliar uses; for at plant, use 16-25.6 fl oz/A. Note 8.
CERTADOR	7.5-9.5 fl oz: foliar 1.2-3.7 fl oz/1000' row	7	Use only one application method. Apply as foliar when pests appear, as needed but not more than every 14 days. See label for row spacing rates. Note 1.
CRUISER SFS or CRUISERMAXX POTATO or CRUISERMAXX POTATO EXTREME	0.11-0.16 oz/cwt or 0.22-0.27 fl oz/cwt or 0.31 fl oz/cwt	–	Seed treatment. Rate depends on seeding rate and row spacing. Notes 6, 8.
CRUISERMAXX VIBRANCE POTATO	0.5 fl oz/cwt	–	Seed treatment. Note 6.
DECLARE	0.77-1.28 fl oz	7	Timing and frequency should be based on locally-determined economic thresholds. Only exposed insects (larvae or adults) can be controlled with foliar applications. Apply in minimum 10 GPA by ground, 2 GPA by air.
DELTA GOLD	1.5-2.4 fl oz	3	Apply ≥ 2 GPA in sufficient water for full foliage coverage. Do not exceed 12 fl oz/A/season. Note 8.
DIMATE 4E/DIMETHOATE 4E	0.5-1 pt	0	Potatoes may be harvested on day of application. Note 8.
ENDIGO ZC	2.5-4.5 fl oz	14	Note 8.
FASTAC EC/CS	1.8-3.8 fl oz	1	Notes 12, 13.
GLADIATOR	8-19 fl oz	14	Maximum 57 fl oz/A/year. Nonionic surfactant recommended. Note 5.
HERO	4-10.3 fl oz	21	Note 8.
KARATE Z/WARRIOR II	0.96-1.6 fl oz	7	Note 8.
LEVERAGE 360	2.8 fl oz	7	Apply when insects appear. Minimum 10 GPA by ground and 2 GPA by air. Maximum of 12.8 fl oz/ crop season. Use NIS for ground and COC for aerial applications. Notes 8, 9.
MALATHION 5 OR MALATHION SEC	1 pt or 2 pt	0	Maximum of 2 applications/year. 7-day minimum retreatment interval.
MALATHION 8 FLOWABLE	1 pt	0	Maximum of 2 applications/year. 7-day minimum retreatment interval.
MUSTANG MAXX	1.76-4 fl oz	1	Do not apply > 24 fl oz/A/season. Notes 5, 8.
PARADIGM/LAMBDA-CY AG	1.92-3.2 fl oz	7	Note 8.
PLATINUM	5-8 fl oz		0.35-0.55 oz/1000' row. In-furrow at planting.
SEVIN XLR PLUS	0.5-1 qt	7	Do not use dilutions greater than 1:39 with water where washoff resistance is desired. Apply every 7 days up to 6 times per year. Note 8.
SIVANTO PRIME	7-10.5 fl oz	7	Note 14.
STEED	3.5-4.7 fl oz	21	Do not make application < 21 days apart. Maximum 2 foliar applications/year. Note 8.
THIMET 20G	8.5-11.3 oz: light soils 13-17.3 oz: heavy soils	90	Distribute granules evenly in furrow or band on each side of row at planting. For postemergent application, apply granules 4-6 weeks after planting on each side of the row before covering at hilling. Do not apply postemergence in heavy soils.
TRANSFORM WG	1.5-2.25 oz	7	Do not apply this product until after petal fall. Notes 8, 15.
VENOM 70SG	1-1.5 oz	7	May apply to soil as band, in-furrow or side dress at 6.5-7.5 oz.

PHI – preharvest interval days.

SEE NOTES AT END OF SECTION.

POTATO INSECT CONTROL

Insect Treatment Guidelines (continued)


Insecticide	Rate/Acre	PHI	Comments/Restrictions
LEAF HOPPER (continued)			
VOLIAM FLEXI	4 oz	14	Maximum 8 oz/A/season.
VYDATE L or CLV	2-4 pt or 1-2.1 pt	7	Apply when insects first appear. Maximum 6 applications. Note 11.
LEAF MINER			
CRUISERMAXX	0.5 fl oz/cwt	–	Seed treatment. Note 6.
VIBRANCE POTATO	1.54 fl oz	7	Timing and frequency should be based on locally-determined economic thresholds. Only exposed insects (larvae or adults) can be controlled with foliar applications. Apply in minimum 10 GPA by ground, 2 GPA by air.
DECLARE			
TRIGARD	2.66 oz (one packet)	–	Allow 7 days between applications. 17-day PHI.
NEMATODE			
			
MOCAP 15G or EC	28-80 lb 15G or 0.5-2 gal EC	–	Apply 20 lb/A or 0.5 GPA in a 12" band on the row at planting or broadcast 40-80 lb/A or 1-2 GPA prior to planting and incorporate into the top 2-4" of soil. See label for specific nematode rates and additional application timings and methods.
MOVENTO/MOVENTO HL	4-5 fl oz/2-2.5 fl oz	7	Suppression. Must be applied with an adjuvant with spreading and penetrating properties. Can be applied by air or ground.
TELONE II	11-19 gal	–	2ee CO, ID, NV, OR, UT, WA-certain counties (exp. date not given) for suppression of nematodes and wireworm; 2ee CO, ID, NV, OR, UT, WA (exp. date not given) for simultaneous or sequential application with K-PAM HL, Sectagon 42, Sectagon-K54 or Vapam HL for suppression of <i>V. dahliae</i> and nematodes..
VELUM PRIME	6.5 fl oz	7	Velum Prime is also a fungicide that suppresses early blight and white mold. Apply using overhead chemigation equipment in delivery volumes between 0.5 and 0.75" of water for nematode suppression. Higher volumes are preferred. If root-knot nematode is a severe economic pest, the use of other control measures should also be employed. Do not apply >13.7 fl oz (0.446 lbs fluopyram)/A/year, regardless of formulation or method of application (soil or foliar). Do not make >2 sequential applications of Velum Prime or any Group 7-containing fungicide before rotating to another group.
VYDATE L or CLV	1-2 gal or 4.2-8.4 pt	7	Apply preplant in-furrow for nematode control.
PLANT BUG, TARNISHED			
			ET: 1 per sweep.
ARCTIC	4-8 fl oz	14	Apply in ≥ 2 GPA by air or 10 GPA by ground. Maximum 32 fl oz/A/season. Note 8.
ASANA XL	5.8-9.6 fl oz	7	Repeat as necessary to maintain control. Do not exceed 0.35 lb a.i. per acre per season. Notes 5, 8.
ATHENA	10-17 fl oz	21	Note 5.
BAYTHROID XL	1.6-2.8 fl oz	0	Apply a minimum of 5 GPA by air and 15 GPA by ground. Do not apply > 16.8 fl oz per crop season. Note 8.
BELEAF	2-2.8 fl oz	7	Multiple applications may be needed for control. Can be tank-mixed with other insecticides for increased control. Use a minimum of 10 GPA by ground or 3 GPA by air. Can be used on all potatoes. Note 8.
BESIEGE	6-9 fl oz	14	Maximum 27 fl oz/A/season. Note 8.
DECLARE	1.02-1.54 fl oz	7	Timing and frequency should be based on locally-determined economic thresholds. Only exposed insects (larvae or adults) can be controlled with foliar applications. Apply in minimum 10 GPA by ground, 2 GPA by air.
DELTA GOLD	1.5-2.4 fl oz	3	Apply ≥ 2 GPA in sufficient water for full foliage coverage. Do not exceed 12 fl oz/A/season. Note 8.
ENDIGO ZC	3-4 fl oz	14	Note 8.
FASTAC EC/CS	3.2-3.8 fl oz	1	Notes 12, 13.
GLADIATOR	19 fl oz	14	Maximum 57 fl oz/A/year. Nonionic surfactant recommended. Note 5.
HERO	10.3 fl oz	21	Note 8.
KARATE Z/WARRIOR II	1.28-1.92 fl oz	7	Note 8.
LEVERAGE 360	2.8 fl oz	7	Apply when insects appear. Minimum 10 GPA by ground and 2 GPA by air. Maximum of 12.8 fl oz/ crop season. Use NIS for ground and COC for aerial applications. Notes 8, 9.
MUSTANG MAXX	3.2-4 fl oz	1	Do not apply > 24 fl oz/A/season. Notes 5, 8.
PARADIGM/LAMBDA-CY AG	2.56-3.84 fl oz	7	Note 8.
TRANSFORM WG	1.5-2.25 oz	7	2ee ID, MN, ND, OR, and WA (exp. date not given). Do not apply this product until after petal fall.
VYDATE L or CLV	2-4 pt or 1-2.1 pt	7	Apply when insects first appear. Maximum of 6 applications.

PHI – preharvest interval days.

SEE NOTES AT END OF SECTION.

POTATO INSECT CONTROL

Insect Treatment Guidelines (continued)


Insecticide	Rate/Acre	PHI	Comments/Restrictions
PSYLLID			
BELAY INSECTICIDE	2-3 fl oz	14	Maximum of 3 applications at 7 day intervals. 9-12 fl oz/A in-furrow or side dress applications. See label for seed piece application information.
BELEAF	2.8 oz	7	2ee all states except IN, KY, NH, NY, SD, TX (exp. date not given) for control of first and second instar only. No more than 3 applications at 2.8 oz/A/season; minimum of 7 days between applications.
BLACKHAWK	3.5 oz	7	2ee ID, MN, ND, OR, TX, WA (exp. date not given). Under moderate to high pest pressure do not extend application interval beyond 7-10 days.
CRUISERMAXX VIBRANCE POTATO	0.5 fl oz/cwt	–	Seed treatment. Note 6.
MOVENTO/MOVENTO HL	4-5 fl oz/2-2.5 fl oz	7	Must be applied with an adjuvant with spreading and penetrating properties. Can be applied by air or ground.
SPIDER MITE 			
AGRI-FLEX	4.75 fl oz	14	Must be mixed with non-ionic activator type adjuvant (but not sticker type) approved for use on tuberous and corm vegetables crop subgroup. Ground (in ≥ 20 GPA) or aerial (in ≥ 5 GPA) application permitted.
AGRI-MEK 0.15 EC, SC	8-16 fl oz, 1.75-3.5 fl oz	14	Apply ≥ 20 GPA by ground; ≥ 5 GPA air. Do not make > 2 applications per year for or exceed 32 fl oz of 0.15 EC/A/crop, 7 fl oz of SC/A/crop. Apply when spider mites are first observed. Include surfactant.
ATHENA	10-17 fl oz	21	Two-spotted. Note 5.
COMITE	32-40 fl oz	14	Apply in 20-50 gallons of water per acre by ground or 10 GPA by air. Two applications per year allowed. See chemigation label for OR and WA. For use in PNW only.
DECLARE	1.02-1.54 fl oz	7	Timing and frequency should be based on locally-determined economic thresholds. Only exposed insects (larvae or adults) can be controlled with foliar applications. Apply in minimum 10 GPA by ground, 2 GPA by air.
GLADIATOR	19 fl oz	14	Maximum 57 fl oz/A/year. Nonionic surfactant recommended. Note 5.
HERO	10.3 fl oz	21	Note 8.
KARATE Z/WARRIOR II	1.92 fl oz	7	Suppression. Note 8.
MOVENTO/MOVENTO HL	4-5 fl oz/2.5-5 fl oz	7	Suppression of Two-spotted. Maximum 10 fl oz/A/season. Must be applied with an adjuvant with spreading and penetrating properties. Can be applied by air or ground. Apply early when mite populations are just starting to build.
OBERON 25C or 45C	8-16 fl oz or 4-8 fl oz	7	For best results, apply as the pest populations begin to build prior to leaf damage or discoloration. Note 7.
OMITE 6E	32-44 fl oz	14	For use in PNW only. Apply in 20-50 GPA by ground or minimum of 10 GPA by air. Maximum 2 applications per year.
ONAGER	16-24 pt	21	Western U.S only (see label for geography). For application prior to adult mite buildup (will not control adults). No more than 1 application/year. Supplemental label (exp. 12/2019) for lower rate.
PARADIGM/LAMBDA-CY AG	3.84 fl oz	7	Suppression. Note 8.

PHI – preharvest interval days.

SEE NOTES AT END OF SECTION.

POTATO INSECT CONTROL

Insect Treatment Guidelines (continued)

Insecticide	Rate/Acre	PHI	Comments/Restrictions
WIREWORM 			
BELAY INSECTICIDE	9-12 fl oz	–	PPI or at-plant incorporated. Broadcast or directed, in-furrow applications. See label for seed piece application information.
BRIGADIER	16-25.6 fl oz	21	Rate range is for foliar uses; Supplemental label (exp. date not given) for at plant control of wireworm at 16-25.6 fl oz/A.
CAPTURE LFR DECLARE	12.75-25.5 fl oz 1.02-1.54 fl oz	– 7	Apply 25.5 fl oz/A at-plant in 8-12" T-band or in-furrow or 4.2-12.75 fl oz/A at lay-by and incorporate. Larvae only. Timing and frequency should be based on locally-determined economic thresholds. Only exposed insects (larvae or adults) can be controlled with foliar applications. Apply in minimum 10 GPA by ground, 2 GPA by air.
MOCAP 15G or EC	20-40 lb 15G or 0.5-1 gal EC	–	Apply 20 lb/A or 0.5 GPA in a 12" band on the row or broadcast 26-40 lb/A or 0.5-1 GPA prior to planting and incorporate into the top 2-4" of soil. See label for population information and additional application timings and methods.
MOVENTO/MOVENTO HL	4-5 fl oz/2-2.5 fl oz	7	Apply at 10-14 day intervals. Maximum 10 fl oz/A/season. Must be applied with an adjuvant with spreading and penetrating properties. Can be applied by air or ground.
PLATINUM REGENT 4SC	5-8 fl oz 3.2 fl oz	– 90	Seed piece only. 3.2 fl oz/A: 30-36" rows, 3 fl oz/A: 38"; 2.9 fl oz/A: 40". Make 1 in-furrow application at time of planting only. Banking must be done in-furrow as 5-7" wide band. Regent 4SC must be thoroughly incorporated and covered with soil immediately after application.
TELONE II	9-25 gal	NA	Inject at least 18" below soils surface as a broadcast treatment with shanks spaced 12-24" apart. Disc and cultipack immediately after application. Little or no crop residue should be exposed at the surface following the sealing. Rate depends on soil type. See CO, ID, NV, OR, UT, WA (exp. date not given) 20-25 GPA depending on soil type to suppress wireworm.
THIMET 20G	8.5-11.3 oz: light soils 13-17.3 oz: heavy soils	90	Distribute granules evenly in furrow or band on each side of row at planting. For postemergent application, apply granules 4-6 weeks after planting on each side of the row before covering at hilling. Do not apply postemergence in heavy soils. Provides suppression postemergence.
TUNDRA/BRIGADE 2EC/ BIFEN 2 AG GOLD	2.1-19.2 fl oz	21	Corn, tobacco, and southern potato wireworm. Tundra/Bifen 2 AG Gold: at-plant – 19.2 fl oz/A for corn and tobacco wireworm; lay-by – 3.2 fl oz/A for southern potato wireworm. Brigade: foliar - 2.1-6.4 fl oz/A; lay-by - 3.2-9.6 fl oz/A; at-plant – 9.6-19.2 fl oz/A. Use in furrow or lay-by for wireworms. Note 8.

PHI – preharvest interval days.

Note 1: Apply as a narrow band directly below seed row in a bedding operation 7 days or fewer before planting, or as in-furrow spray during planting - best to direct spray on the seed pieces in-furrow, or as a sidedress on both sides of potato row or as a spray at ground cracking directly over the row at hilling. Admire Pro or Advise Four must be covered immediately by 3 or more inches of soil. Use the high rates for muck soils or when extended control is needed or for seed potato production. For seed treatments - may be applied as a non-diluted or diluted spray onto seed pieces using a shielded spray system.

Note 2: Place granules in band or in a soil incorporated band on each side of seed furrow at planting. An additional application may be made as a soil incorporated sidedress after plants become established.

Note 3: Can also be applied one week prior to planting. Do not apply after planting. Apply only with positive displacement applicator. Do not exceed a total of 20 lb/acre. For use only in FL, ID, MT, OR, WA and certain counties of NV and UT. Refer to label for approved counties. PHI 100 days in FL, 150 elsewhere. Do not furrow irrigate in FL.

Note 4: Columbia River basin of WA and OR only.

Note 5: Do not graze on feed potato forage.

Note 6: Apply Cruiser using Syngenta-approved equipment designed for liquid seed treatment. See label for equipment calibration and delivery of maximum fl oz/cwt final solution. Compatible with Maxim 4FS. Do not exceed thiamethoxam 0.125 lb a.i./A.

Note 7: Thorough coverage of foliage is essential. Minimum 10 GPA by ground and 5 GPA by air. Higher volumes result in more consistent mite and insect control. For best results, chemigation applications should be applied at 100% input/travel speed for center pivots or in 0.10" up to 0.15" of water/A for other systems. For moderate to high populations, use higher labeled rates of Oberon.

Note 8: May be applied through sprinkler irrigation systems (see label).

Note 9: Petroleum-based or non-emulsifiable oils are not recommended.

Note 11: Pyrethroids do not control resistant beetles.

Note 12: Leaves cannot be used for food or feed.

Note 13: Do not make applications less than 4 days apart.

Note 14: Sivanto prime. Minimal application interval 7 days. Maximum per year: 28 fl oz/A. Minimum application volume ground 10 GPA, air 2-5 GPA.

Note 15: Do not apply within 7 days of harvest. Do not make applications <14 days apart. Do not make >4 applications/crop nor >2 consecutive applications/crop. Do not apply >8.5 oz/A/year (0.266 lb ai sulfoxaflo/A/year). If blooming vegetation is present 12' out from downwind edge of field, a downwind 12' on-field buffer must be observed. Do not use on soybeans.

POTATO DISEASE CONTROL

Labeled Fungicides (continued)

DISEASE	FUNGICIDE	Seed Piece																											
		Ph-D	Previcur Flex	Previsto	Priaxor	Quadris Opti	Quadris Gold	Quadris Ridomil Gold SL	Quadris Top	Quash	Ranman	Reason 500 SC	Revus	Revus Top	Ridomil Gold Bravo L	Ridomil Gold MZ	Ridomil Gold SL	Ridomil Gold/Copper	Rovral 4F	Scala SC	Serenade ASO	Tanos	Tetranban	Top MP	Topsin 70WSP/MWSB	Velum Prime	Vibrance	Zampro	Zing
Black Scurf						●																							
Canker, Stem																											●		
Fusarium (Dry Rot)																													
Fusarium Seed Piece Decay																						●		●					
Fusarium Tuber Rot																													
Late Blight											S																		
Rhizoctonia Solani					● ³	●	●														●						●		
Scab, Seed Borne					●														●										
Seed Decay																													
Silver Scurf						●																					●		
		Foliar																											
Black Dot					●	●	So		●	●	S		●								S		●	●					●
Black Scurf																							●						
Botrytis Vine Rot																					●								●
Early Blight	●	●	●	●	●			●	●	●		●	●	●	●	●	●	●	●	●	S	●	●			S		●	
Late Blight		●	●	S	●			●	●	●		●	●	●	●	●	●	●	●	●	S	●	●	●			●	●	
Pink Rot	●					So				So			●	●	●	●	●	●	●										
Powdery Mildew					●	●		●	●				●								●			●					
Pythium Leak						So				S ¹			●	●	●	●	●	●	●										
Pythium Seedling Disease										S ¹							●												
Septoria Leaf Spot								●					●										●						
Silver Scurf																							●						
Tuber Blight																													
White Mold				S				●										●		S				●	S				

* Other diseases may be controlled, see label.
So - soil applied, S- suppression.

See Fungicide Resistance Management in the TECHNICAL INFORMATION section.

- ¹2ee.
- ²These CruiserMaxx products also contain insecticide; see Potato Insect Control section.
- ⁴Blocker 4F only.
- ⁵Bravo Weather Stik, Bravo Zn and Praiz only.
- ⁶24c.
- See Seed and Grain section for seed treatments labeled in potato such as CruiserMaxx Potato.

Disease Treatment Guidelines

Fungicide	Rate/Acre	PHI	G/F	Comments/Restrictions
Seed Pieces				
BLOCKER 10G	1.65 lb	45	NO	Apply in furrow as 8.5" band with 34" row spacing, directing product into furrow over seed and cover as part of hilling during planting. Best to apply when soil is slightly moist. Not for use in CA.
BLOCKER 4F	5-10 pt	-	-	Do not exceed 5 lb a.i./A per season. For stem canker and black scurf, apply in 10-20 GPA based on 34" row spacing in 8.5" band in furrow at time of planting. 2ee CO, ID, MI, MN, MT, NE, NV, ND, OR, SD, UT, WA WI, WY (exp. date not given) for suppression of common scab on potatoes via band application.
CRUISERMAXX POTATO or CRUISERMAXX POTATO EXTREME	0.22-0.27 fl oz/100 lb seed pieces or 0.31 fl oz/100 lb seed pieces	-	-	Seed treatment. For CruiserMaxx Potato, rate depends on seeding rate and row spacing. Note 3.

PHI - preharvest interval days.

G/F - grazing and feeding interval days.

NO - do not graze or feed.

SEE NOTES AT END OF SECTION.

POTATO DISEASE CONTROL

Disease Treatment Guidelines (continued)

Fungicide	Rate/Acre	PHI	G/F	Comments/Restrictions
Seed Pieces (continued)				
CRUISERMAXX VIBRANCE POTATO	0.5 fl oz/cwt	–	–	Seed treatment. CruiserMaxx Vibrance Potato does not control bacterial disease or diseases present within the seed or protect against bacteria that may infect and decay the seed after planting. Do not use a seed treatment rate that will result in more than 0.1 lb AI sedaxane per acre per 24 months. Therefore, CruiserMaxx Vibrance Potato treated seed potatoes cannot be planted to the same field in successive years. Note 3.
DITHANE F-45 RAINSHIELD	1.5-2.5 fl oz/cwt	–	–	Do not use treated seed potatoes for food or feed purposes.
DYNASTY	0.1-3.75 fl oz/100 lb of seed pieces	–	–	Use higher rate when disease pressure is expected to be high. Combine with Pythium-active seed treatment such as Apron XL to offer broad-spectrum protection against seed and seedling disease complex. See label.
ELATUS	0.34-0.5 oz	14	NR	In-furrow at planting as narrow band over seed piece. No more than 9.5 oz/A as banded application. See label for annual a.i. maximums.
EMESTO SILVER	0.31 fl oz/100 lb seed pieces	–	–	Do not apply to potatoes used for food, feed, or fodder. Apply as a diluted spray slurry using equipment that ensures uniform coverage. An inert ingredient absorbent is recommended to improve suberization. Maximum 3 applications per year.
EVITO 480SC	2-3.8 fl oz; 0.16-0.24 fl oz/1000' row	7	–	For foliar diseases, begin applications preventively and continue as needed on 7- to 10-day interval. For soil-borne diseases, apply prior to infection as directed spray, or in furrow spray in 3-7 gallons of water at planting.
MANCOZEB 6%	1 lb/100 lb of seed pieces	–	–	Apply for thorough coverage. Plant as soon after treatment as possible.
MAXIM 4FS	0.08-0.16 fl oz/100 lb of seed pieces	–	–	Labeled for potatoes grown for seed or for commercial production. Apply using equipment that ensures uniform coverage.
PRIAXOR XEMIMUM	0.5-0.6 fl oz/1000' row	–	–	Rhizoctonia control. Registered in all states except CA for suppression of Fusarium seed rot and Pythium damping off.
QUADRIS RIDOMIL GOLD	0.82 fl oz/1000' row	–	–	Apply in-furrow in 3-15 GPA. Direct spray into furrow just before seeds are covered.
RANMAN	0.42 oz/1000' row (36" row)	–	–	Apply in-furrow. Apply in \geq 5 GPA in a 6 to 8" band directly over seed pieces. Can also be applied broadcast by layby at hilling only in combination with an in-furrow application. Use 2.75 oz/A + organosilicone adjuvant and a minimum of 20 GPA. 2ee CA, CO, DE, ID, KS, ME, MD, MI, MT, NE, NV, NJ, NC, OR, PA, UT, VA, WA, WV (exp. date not given) for <i>Pythium ultimum</i> suppression.
REASON	0.15 fl oz/100 lb of seed pieces	–	–	Do not apply to potatoes used for food, feed or fodder. Apply in a diluted spray solution of not more than 2.5 fl oz of slurry to 100 lb of seed pieces. Application of an absorbent ingredient recommended to improve suberization.
REVUS	0.2-0.4 fl oz/100 lb of seed pieces	–	–	Apply a fungicide belonging to a group other than group 40 as the first foliar application of the season. Will not prevent late blight infection of plants or tubers after germination.
RIDOMIL GOLD SL	0.42 oz/1000' row on 6-8" band	–	–	Control of Pythium leak, pink rot, and Pythium seedling disease. Apply in a minimum of 3 GPA water directly over seed pieces prior to row closure. May be impregnated on dry fertilizer. May be applied in combination with liquid fertilizer.
SERENADE ASO	2-6 qt	0	–	Supplemental label (exp. date not given): Bacillus subtilis is a biological fungicide. Drench at planting or at any stage of growth; shanked-in and injected; in-furrow. See supplemental label for additional information.
VIBRANCE	0.05-0.08 fl oz/cwt	–	–	Under high Rhizoctonia solani pressure use the high rate (0.08 fl oz/cwt). For potatoes, the application of Vibrance is limited to 0.1 lb AI per acre for 24 months. Therefore, Vibrance treated seed potatoes cannot be planted in the same field in successive years. This restriction applies to potatoes only. A Vibrance application rate 0.1 lb AI per acre is equal to 4000 lb of potato planted per acre and treated with 0.08 fl oz of Vibrance per 100 lb of potato seed.

PHI – preharvest interval days.

G/F – grazing and feeding interval days.

NO – do not graze or feed.

SEE NOTES AT END OF SECTION.

POTATO DISEASE CONTROL

Disease Treatment Guidelines (continued)

Fungicide	Rate/Acre	PHI	G/F	Comments/Restrictions
Foliar				
BADGE SC	1-4 pt	0	NR	Apply at 5-10 day intervals starting when plants are 2-6" high. Apply up to 4 pt/A when disease is more severe. Badge SC can be tank mixed with other compatible fungicides. 2ee in CO, ID, KS, NE, NM, NV, OR, TX, WA, WY (exp. date not given) for brown spot. 2ee in ID, WA, OR (exp. date not given) for aerial stem rot. 2ee TX (exp. date not given) for bacterial stem rot. Badge X2 is OMRI listed.
BADGE X2	1-4 lb	0	NR	Apply at 7-10 day intervals starting when plants are 2-6" high. Apply up to 4 lb/A when disease is more severe. Badge X2 is OMRI listed.
BIO-TAM	2.5-5 lb	–	–	Can be applied in-furrow 1.5-3 oz/1000 row' and banded 2.5-3 lb. Broadcast apply at sowing, restart of vegetative growth, and before the infection risk period. Note 2.
BLOCKER 4F	3-5 pt	28	–	For white mold: Apply by chemigation only at first sign of disease or no later than just prior to or after row closure. Thorough coverage of foliage essential. For use in ID, NV, WA, OR only. Do not exceed 5 lb a.i./A per season.
BRAVO WEATHER STIK/PRAIZ or BRAVO ULTREX or BRAVO ZN	1-1.5 pt Weather Stik 0.9-1.36 lb Ultrex 1.5-2.25 pt Zn	7	–	Apply at 7-10 day intervals. First application may be banded at 0.75 pt or 0.7 lb or 1.125 pt. See label for details. 24c: NE (exp. 9/2020), MI (exp. 1/2019) for Bravo Weather Stik; ND (exp. 1/2019), NE (exp. 9/2020), ME (exp. 12/2021), MI (exp. 12/2019) for Bravo ZN; ND (exp. 1/2019) for Praiz. Notes 1, 2.
CABRIO PLUS	2-2.9 lb	3, 14	NO	Begin prior to disease development. Continue on 7-14 day intervals. Maximum 2 sequential applications and 6 applications (group 11 or M3). Use 2-2.9 lb for black dot and early blight; 2.9 lb for others. PHI 3 days in CT, DE, FL, MA, ME, MI, NH, NY, OH, PA, RI, VT, and WI; 14 days other states. Notes 1, 2.
CERCOBIN	21.8-32.7 fl oz	21	–	Make first application prior to row closure and repeat applications every 7-14 days when conditions for disease development are favorable. Do not apply more than 87.2 oz per A/season
CONFINE EXTRA	1-4 qt	0	–	Apply 1-4 qt/A foliar in minimum 20 gal/water/A and by aerial in minimum 10 gal/water/A.
CONTANS WG	1-4 lb	0	NR	Apply prior to planting, at planting, or after crop emergence. Incorporate into soil to 2". Make 2 applications, but no more than 8, for maximum efficacy. Note 2.
CUPROFIX ULTRA 40 DISPERSS	0.75-3 lb	–	–	Apply low rates at 7-10 day intervals starting when plants are 6" high in locations where disease is light and up to 3 lb where disease is severe. Under severe disease, control will be improved by tank mixing with other compatible potato fungicides. Notes 1, 2.
CURZATE 60 DF	3.2 oz	14	–	Provides 1-3 days kick-back control along with 2-3 days of forward protection. Must be tank mixed with a base rate of a protectant fungicide such as mancozeb or chlorothalonil. Apply on a 7-day schedule and switch to a 5-day schedule under heavy pressure. Notes 1, 2.
DITHANE F-45	0.4-1.6 qt	3	–	Begin when plants are 4-6" high. Repeat at 5-10 day intervals. Do not apply more than 11.2 lb of active ingredients/acre/year. The addition of a surfactant performance will improve performance. Notes 1, 2.
ENDURA	2.5-4.5 oz: early blight 5.5-10 oz: white mold	10	0	For white mold, apply prior to row closure or at onset of disease. Make second application 14 days later. For early blight, apply prior to onset of disease and continue at 7-14 day intervals. Do not apply more than 2 sequential applications before rotating or more than 4 total. NIS at 0.25% v/v may improve performance. Notes 1, 2.
EVITO 480SC	2-3.8 fl oz	7	–	Apply as preventative on 7-10 day interval for early blight and a 7 day interval for late blight suppression. Alternate or tank mix with a low rate of a protectant fungicide. Apply as banded spray or in-furrow. Notes 1, 2.
FORUM	4-5.5 oz	4	–	Use as a preventative fungicide. Do not apply 2 consecutive treatments. Notes 1, 2.
GAVEL 75DF	1.5-2 lb	3-14	–	Apply at the first sign of disease or when late blight is reported in the area. Apply every 5-7 days when pressure is high. Notes 1, 2.
GEM 500 SC	2.9-3.8 fl oz	7	–	Use 3.8 fl oz in a tank mix with a protectant for late blight. Apply at 7-10 day intervals. Begin application preventatively. Note 1.
HEADLINE SC	6-12 fl oz	3	–	Use 6-9 fl oz for black dot and early blight. Apply at 7 day intervals. Apply in a program approach with products of alternate mode of action. Maximum of 6 applications per season. NIS at 0.25% v/v may improve performance. Notes 1, 2.

PHI – preharvest interval days.

G/F – grazing and feeding interval days.

NO – do not graze or feed.

SEE NOTES AT END OF SECTION.

POTATO DISEASE CONTROL

Disease Treatment Guidelines (continued)

Fungicide	Rate/Acre	PHI	G/F	Comments/Restrictions
Foliar (continued)				
HERITAGE	3.2-9.6 oz	14	–	Apply 3.2 oz for early blight and late blight on a 7 day schedule. Schedules may be altered from 5-14 days. See label for rates and resistance management. Notes 1, 2.
KOCIDE 2000 or 3000	0.5-3 lb 0.5-1.75 lb	0	–	Apply at 7-10 day intervals. Notes 1, 2.
KOVERALL	1-2 lb	3 ^A , 14	–	Begin applications when plants are 4-6" high and repeat applications every 5-10 days when conditions for disease development are favorable. Do not apply more than 15 lb/A per season. ^A PHI 3 days in CT, FL, ME, MA, NH, NY, OH, PA, VA, WI; 14 Days all other states.
KUMULUS DF	3-10 lb	–	–	Start at early leaf stages. Repeat every 10-14 days. Notes 1, 2.
LUNA TRANQUILITY	11.2 fl oz	7	–	Begin applications preventatively and continue on 7-14 day interval. Maximum 54.7 fl oz/A/season for air or ground applications and 43.6 fl oz/A for chemigation.
MANZATE PRO-STICK OR MANZATE MAX	1-2 lb or 0.4-1.6 qt	3, 14	–	Apply at 5-10 day intervals. PHI 3 days in CT, DE, FL, MA, ME, MI, NH, NY, OH, PA, RI, VT, WI; 14 days elsewhere. Notes 1, 2.
OMEGA 500F	5.5-8 fl oz	14	–	Apply when potatoes are 6-8" tall or when conditions favor disease development. Use higher rate for moderate to high white mold pressure. Maximum 3.5 pt per season. 24c in CO (exp. date not given); ND (exp. 12/2020); ID (exp. 12/2019); WI (exp. 12/2020) for powdery scab suppression. Notes 1, 2.
OMEGA TOP MP	5.5-8 fl oz	14	–	Use 5.5 fl oz for late blight and 5.5-8 fl oz for white mold. Begin when plants are 6-8" and conditions favor disease development. Repeat at 7-10 day intervals. Use 5.5 fl oz for low to medium white mold pressure. 2ee various states (exp. 12/2019) for tank-mix with Top MP.
ORONDIS GOLD 200	4.8 fl oz	–	–	2ee most states (exp. 12/2019) tank mix with Ridomil Gold SL for soil applied in-furrow management of pink rot and pythium leak.
ORONDIS OPTI	1.75-2.5 pt	7	NR	Supplemental label (exp. 4/2020): Apply prior to disease development, continue on a 5- to 14-day schedule.
ORONDIS OPTI A, ULTRA A	1.6-4.8 fl oz	5	–	Begin ground, air-assisted or aerial applications prior to disease development; continue on a 5- to 14-day interval. Maximum 2 sequential applications before rotating to a different mode of action. Do not exceed 4.8 fl oz/A/application or 27.2 fl oz/A/year, or use for >33% of total foliar fungicide applications or make >4 applications per crop. Do not exceed 6 foliar applications/A/year. 2ee for tank mix Opti A/Opti B in TX, OR (exp. 2/2018), RI (exp. 6/2018); Ultra A/Ultra B in TX (exp. 3/2018), AL, CT, KY, MA, NJ (exp. 6/2018), RI (exp. 11/2018), OR (exp. 12/2018). 2ee for tank mix Opti A/Opti B (exp. 12/2018) and Ultra A/Ultra B (exp. 11/2018) in AR, AZ, CO, DE, FL, GA, IA, ID, IL, IN, KS, LA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NM, NV, OH, OK, PA, SC, SD, TN, UT, VA, VT, WA, WI, WV, WY.
ORONDIS OPTI B	0.75 pt, then 1.5 pt	7	–	Begin ground, aerial or chemigation applications at low rate when vines are first exposed to disease, then at 5- to 10-day intervals. Apply higher rates at 5- to 10-day intervals when vines close rows, or late blight forecasting = 18 DSV, or crop reaches 300 P-days. Also see Orondis Opti A tank mix 2ee recommendations.
ORONDIS ULTRA B	8 fl oz	14	–	Begin ground, aerial or chemigation applications prior to disease development, then at 7- to 10-day intervals. Maximum 2 consecutive applications before switching to another non-Group 40 fungicide. Use NIS or COC or blend when applying by ground/air. Also see Orondis Ultra A tank mix 2ee recommendations.
PENNZOZEB 75DF	0.5-2 lb	3, 14	–	Begin applications when plants are 4-6" high with 0.5-1 lb. As vines increase in size, apply 1.5-2 lb at 5-10 day intervals or 0.75-1 lb at 3-5 day intervals. Maximum of 15 lb per crop. PHI (3 days in MI, NY, OH, PA, WI and northeastern states). Use within an IPM program. Notes 1, 2.
PH-D	6.2 fl oz	0	–	Apply preventatively and continue on a 10-14 day interval.
PREVICUR FLEX	0.7-1.2 pt	14	–	Use only in tank mixes with other fungicides and use in a preventative program. Apply on a 7-10 day interval. Under conditions that favor rapid disease development and severe disease conditions, apply at 1.2 pt with tank mix partner on a 10 day interval; alternating on the fifth day with a contact fungicide. Notes 1, 2.
PREVISTO	1-3 qt	0	NR	Apply lower rates at 7-10 day intervals starting when plants are 6" high and higher rates under severe disease pressure.
PRIAXOR	4-8 fl oz	7	–	Apply prior to when conditions favor disease development and continue on 7-14 day schedule. Use higher rate and shorter interval when disease has been confirmed and conditions are conducive to disease development. Use 6-8 fl oz/A for leaf spot, powdery mildew, rust, and white mold. Maximum 24 fl oz/A/season. Maximum 3 applications before rotating to another mode of action. Crop injury can result from use with OS or oil-based adjuvants.

PHI – preharvest interval days.

G/F – grazing and feeding interval days.

NO – do not graze or feed.

SEE NOTES AT END OF SECTION.

POTATO DISEASE CONTROL

Disease Treatment Guidelines (continued)

Fungicide	Rate/Acre	PHI	G/F	Comments/Restrictions
Foliar (continued)				
QUADRI OPTI	1.6 pt	14	–	Do not make more than 1 sequential foliar application of Quadris Opti or other QoI fungicide before alternating to fungicide with alternate MOA. Do not make more than 6 applications per acre per year of Quadris Opti or other QoI fungicide. Notes 1, 2.
QUADRI TOP	8-14 fl oz	14	–	Begin applications prior to disease development. Continue on 7-14 day interval. Include a spreading/penetrating adjuvant. Do not apply >55.3 fl oz/A/year. Notes 1, 2.
QUASH	2.5-4 oz	1	NO	Apply when conditions favor disease development and continue on 7-10 day intervals. Maximum 4 applications/season. Do not make more than 2 sequential applications. Adjuvants may not be used. For white mold control, apply at 4 fl oz prior to infection. Make second application 14 days later if conditions favor development.
RANMAN	1.4-2.75 fl oz	7	–	For late blight, apply on a 7-10 day schedule beginning when warning forecast disease infection periods, generally at row closure or when conditions are favorable for disease development. Use the high rate and shortest interval for high disease pressure and/or fast crop development for best control. Apply with organosilicone adjuvant only. Use water volumes of 20-50 GPA for complete coverage. Maximum of 27.5 oz/A/season. 2ee CA, CO, DE, ID, KS, ME, MD, MI, MT, NE, NV, NJ, NC, OR, PA, UT, VA, WA, WV (exp. date not given) for suppression of <i>Pythium ultimum</i> at 2.75 fl oz/A lay by/hilling .
REASON 500 SC	5.5-8.2 fl oz	14	–	For optimum results, begin applications as soon as crop and/or environmental conditions become favorable for disease development. Apply on a 5-10 day interval depending upon disease conditions. QoI inhibitor and a Group 11 fungicide: Avoid alternation with other fungicides in this group. 2ee (exp. date not given) in most potato growing states for early/late blight control at reduced rate (4 fl oz/A) to be tank mixed with the minimum labeled rate of any fungicide containing chlorothalonil, mancozeb, or metiram that is labeled on potatoes. Do not alternate or tank mix with any fungicide to which resistance has already developed. 2ee (exp. date not given) for Scala SC tank mixes. Notes 1, 2.
REVUS TOP	5.5-7 fl oz	14	–	Begin applications prior to disease development. Continue on 7-10 day interval. Include NIS or COC. Notes 1, 2.
RIDOMIL GOLD MZ	2.5 lb	3, 14	–	When used as a foliar application in a preventative disease control program, it will provide effective control of late blight, pythium leak and pink rot. Prevention: Make preventative applications early in the season when conditions favor disease development (before infection), but no later than when foliage uniformly meets within the row. Make 3 applications at 14-day intervals. The full rate of a protectant should be applied before, between or after Ridomil applications. PHI (3 days in MI, NY, OH, PA, WI and northeastern states). Notes 1, 2.
RIDOMIL GOLD BRAVO LIQUID	136 oz jug/10 acres	3, 14	–	When used as a foliar application in a preventative disease control program, will provide effective control of early and late blight, pythium leak and pink rot. Prevention: Make preventative applications early in the season when conditions favor disease development (before infection), but no later than when foliage uniformly meets within the row. Make 3 applications at 14-day intervals. The full rate of a protectant should be applied before, between or after Ridomil applications. PHI (3 days in MI, NY, OH, PA, WI and northeastern states). Notes 1, 2.
RIDOMIL GOLD COPPER	2 lb	14	–	When used as a foliar application in a preventative disease control program program, will provide effective control of late blight, pythium leak and pink rot. Prevention: Make preventative applications early in the season when conditions favor disease development (before infection), but no later than when foliage uniformly meets within the row. Do not make more than 3 applications/year. The full rate of a protectant should be applied before, between or after Ridomil applications. Add 0.8 lb a.i./A of mancozeb, metiram or chlorothalonil and 2 lb of Ridomil/Copper 70W.
RIDOMIL GOLD SL	0.42 fl oz/1000' row 1-2 pt (foliar)			Apply in-furrow over seed pieces in 6-8" band, or use markout application method (incorporated). May need to follow in-furrow with prepack or tank mix foliar application at tuber initiation. 2ee CT, NH, MA, ME, NJ, PA, RI, VT (exp. 6/2019), ID (exp. 7/2020): for late blight on potato at 3.2 oz/A.
ROVRAL 4F	1-2 pt	14	–	Apply at 10-14 day intervals or as required for early blight control. When applying through irrigation, deliver between 0.1-0.2" water per acre. DO NOT irrigate for 24 hrs. after application. A maximum of 4 applications may be made per season. For white mold, apply just prior to row closure or at first sign of disease and repeat on 14-21 day interval, if disease development continues. Notes 1, 2.
SCALA SC	7 fl oz	7	–	Begin applications (7-14 day interval) as soon as crop/or environmental conditions become favorable for disease development. Do not apply more than 35 fl oz/A per season. Tank mix Scala with a protectant fungicide such as a chlorothalonil or mancozeb. Supplemental label CA, CO, CT, DE, FL, ID, ME, MD, MI, MN, MT, NE, NJ, ND, OH, OK, OR, PA, RI, VT, VA, WA, WV, WI (exp. date not given) for early blight, Botrytis leaf spot, black dot (suppression), late blight and brown spot at reduced rates and when tank mixed with Reason 500 SC.

PHI – preharvest interval days.

G/F – grazing and feeding interval days.

NO – do not graze or feed.

SEE NOTES AT END OF SECTION.

POTATO DISEASE CONTROL

Disease Treatment Guidelines (continued)

Fungicide	Rate/Acre	PHI	G/F	Comments/Restrictions
Foliar (continued)				
SERENADE ASO	2-6 qt	–	–	Bacillus subtilis is a biological fungicide. Suppression or control, application timing and repeat interval depends on disease - see label.
TANOS	6-8 oz	14	–	Use 6 oz/A for brown spot and early blight. Must be tank mixed with an appropriate contact fungicide that has a different mode of action, such as mancozeb or chlorothalonil. Do not make >1 application of Tanos before alternating with a fungicide that has a different mode of action. Maximum of 6 applications or other group 11 fungicides per season. Notes 1,2.
TETRABAN	0.4-0.8 fl oz/1000' row; 6-20 fl oz	14	–	See label application rates, methods and timing for soilborne vs. foliar diseases.
TOP MP	5.5-7 fl oz	14	–	Begin at first sign of disease or when conditions are conducive for disease development. Continue on 7-14 day schedule. See various states (exp. 12/2019) for tank-mix with Omega Top MP for broad-spectrum disease control. Notes 1,2.
TOPSIN M 70WP/WSB	1-1.5 lb	21	–	Make the first application just prior to row closure. Repeat within 7-14 days if conditions for disease development are favorable. Thorough coverage of the lower stems and branches is essential. Maximum of 4 lb per season. May be tank mixed with other fungicides. Notes 1,2.
VAPAM HL	37.5-75 gal	–	–	INSECTS: Nematodes. WEEDS: Weed seeds. Sprinkler System preplant: Apply 37.5 to 75 gal of Vapam HL/A. Inject into a sprinkler system that can deliver an even water distribution for the area being treated. Soil temperatures should be in the range of 40° F to 90° F in the treatment zone. On very light soils, keep surface area moist by sprinkling periodically for 2-3 days. Apply in a minimum of 1 acre inch of water. Vapam HL may be applied where crop stubble or vegetation exists without prior tillage, provided there is adequate soil penetration of Vapam HL.
VELUM PRIME	6.5 fl oz	7	7	Velum Prime is also an insecticide that suppresses nematodes. Apply by chemigation to suppress early blight and white mold. Do not apply more than 13.7 fl oz (0.446 lbs fluopyram)/A/year, regardless of formulation or method of application (soil or foliar). Do not make >2 sequential applications of Velum Prime or any Group 7-containing fungicide before rotating to a different group.
VERTISAN	10-24 fl oz	7	–	Begin applications prior to disease development and continue on 7-14 day interval. For white mold suppression, make initial application at 100% full bloom of primary inflorescence or prior to row closure. For control of soil-borne Rhizoctonia, apply 0.7-0.16 fl oz/1000' row at plant or in-furrow. Maximum 72 fl oz/A/year. Notes 1,2.
ZAMPRO	11-14 fl oz	4	–	Begin applications prior to disease development and continue on 5-7 day interval. May be applied after vine kill. Maximum 3 applications/season. Do not make more than 2 sequential applications before switching to a different mode of action.
ZING!	32-34 fl oz	7	NR	Apply on preventative schedule. Use a 5-7 day schedule when the disease is present. Notes 1,2.

PHI – preharvest interval days.

G/F – grazing and feeding interval days. NO – do not graze or feed.

NOTE 1: May be applied by air.

NOTE 2: May be applied by chemigation.

NOTE 3: Apply Cruiser using Syngenta approved equipment designed for liquid seed treatment. See label for equipment calibration and delivery of maximum fl oz/cwt final solution. Compatible with Maxim 4FS. Do not exceed 0.125 lb thiamethoxam a.i./A.

POTATO GROWTH RETARDANTS

Growth Retardants

Product	Rate/Acre	Use	Comments/Restrictions
ROYAL MH-30 XTRA or SG	1-1.33 gal or 5 lb	Sprout Inhibitor	Use 1.33 gal where vines are robust or stay green up to time of desiccation.