

COMMERCIAL VEGETABLES—WEED CONTROL

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ASPARAGUS

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preemergence (PRE) (seeded and new crown plantings)	Contact kill of all green foliage	<i>paraquat</i> Firestorm, Parazone 3SL Gramoxone Inteon 2SL MOA 22	1.7-2.7 pt 2.5-4.0 pt	0.64-1.0	24 hours/ N/A	Apply to emerged weeds but before crop emergence. Add 1 qt NIS or 1 gal COC/100 gal spray mix.
	Most emerged weeds except for resistant pigweed, stale seedbed	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae) MOA 9	16-32 oz 11-22 oz	0.4-0.75 lb ae	4 hours/ N/A	Apply to emerged weeds but before crop emergence. Do not apply within a week of when spears emerge. Perennial weeds may require higher rates. The need for an adjuvant depends on brand used.
Postemergence (POST) (seeded and new crown plantings)	Annual grasses and small-seeded broadleaf weeds	<i>linuron</i> Lorox DF 50WDG MOA 7	1-2 lb	0.5-1	24 hours/ 1 day	Apply when ferns are 6 to 18 in and weeds are less than 4 in. Do not use a surfactant or fertilizer solution in spray mixture. Use the lower rate on coarse soils. Not recommended on sand or loamy sand soils. Repeat applications may be made, but do not exceed 4 lb/A/yr.
	Actively growing annual and perennial grasses.	<i>fluzifop-P-butyl</i> Fusilade DX 2EC MOA 1	6-16 oz	0.1-0.25	12 hours/ 1 day	With sethoxydim, add 1 qt COC/A. With fluzifop-P, add 1 qt NIS or 1 gal COC/100 gal of spray mix. Do not apply more than 48 oz/A/season fluzifop; do not apply more than 5 pt/A/season sethoxydim. Do not mix with other pesticides.
		<i>sethoxydim</i> Poast 1.53EC MOA 1	1-1.5 pt	0.19-0.29	12 hours/ 1 day	
		<i>clethodim</i> SelectMax 0.97EC TapOut 0.97EC MOA 1	9-16 fl oz 9-16 fl oz	0.07-0.12	24 hours/ 1 day	
Postemergence (POST) (transplant crowns or established beds)	Nutsedge; non-ALS resistant pigweed, ragweed, wild radish	<i>halosulfuron</i> Sanda 75DG MOA 2	0.5-1.0 oz	0.024-0.048	12 hours/ 1 day	Apply before, during, or after harvest season. For 1st year transplants, apply no sooner than six weeks after fern emergence. Do not use an additive as injury can occur. Two application per crop cycle can be made as long as they are at least 21 days apart. Do not exceed 2 oz/A/year. Contact with fern may cause yellowing. Try on limited acreage; no GA research.
Preemergence (PRE) (established - at least 2 yr old)	Annual grasses, including Texas millet, and small-seeded broadleaf weeds	<i>trifluralin</i> Treflan 4EC Trifluralin 4L MOA 3	1-3 pt 1-3 pt	0.5-1.5	12 hours/ N/A	Apply to dormant asparagus in winter or early spring after removing mature ferns. Do not apply after new spears begin to emerge. Do not apply more than 2 pt/A on coarse soils. Split applications (before and after harvest) may also be utilized. Treflan must be incorporated within 8 hours of application with 0.5 in of rainfall/irrigation.
	Annual grasses and small-seeded broadleaf weeds	<i>napropamide</i> Devrinol 50DF MOA 15	8 lb	4	24 hours/ N/A	Apply to the soil surface in spring before weed and spear emergence. Do not exceed 8 lbs/A/year.

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			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT			
Preemergence (PRE) (established - at least 2 yr old) (continued)	Annual grasses and small-seeded broadleaf weeds (continued)	<i>linuron</i> Lorox DF 50WDG	2-4 lb	1-2	24 hours/ 1 day	Apply prior to spear emergence. Do not use a surfactant or fertilizer solution in spray mixture. Use the lower rate on coarse soils. Not recommended for sand or loamy sand soils. Repeat applications may be made, but do not exceed 4 lb/A/yr.	
		MOA 7					
	Annual broadleaf and grass weeds	<i>diuron</i> Karmex 80DF Karmex 80XP Direx 4L	1-2 lb 1-2 lb 0.8-1.6 qt	0.8-1.6	12 hours/ N/A		Apply in spring no earlier than 4 wk before spear emergence and no later than early cutting period. A second application may be made immediately after last harvest but do not exceed 3 lb Karmex or 2.4 qt Direx/A/season. Low rates are more suitable on most GA soils.
		MOA 7					
		<i>terbacil</i> Sinbar 80WP	0.25-0.5 lb				
MOA 5							
<i>metribuzin</i> Dimetric Metribuzin Metri 75DF Metri 4F	1.3-2.67 lb 2-4 pt	1-2	12 hours/ 14 days	Make a single application to small emerged weeds and soil surface in early spring (Plantings at least 1 yr old) before spear emergence. Low rates are suggested for most GA soils; see label. Do not apply within 14 d of harvest or after spear emergence. Apply POST only after the last spears are harvested. Do not exceed 2 lb ai/A/year.			
MOA 5							
Postemergence (POST) (established - at least 2 yr old)	Broadleaf weeds	<i>2,4-D</i> Amine 4 3.8 SL	1.5-2 qt		1.4-1.8	48 hours/ 3 days	Apply in spring before spear emergence or immediately following a clean cutting. Also may apply after last harvest but prior to emergence. Postharvest sprays should be directed under ferns, avoiding contact with ferns, stems, or emerging spears. Do not make more than 2 applications/season (2 lbs ae/A). Applications should be spaced at least 30 d apart. <u>Do not apply if sensitive crops are planted nearby or if conditions favor drift.</u>
		MOA 19					
	Contact kill of emerged weeds, and contact kill of volunteer ferns	<i>paraquat</i> Firestorm, Parazone 3SL Gramoxone Inteon 2SL	1.7-2.7 pt 2.5-4.0 pt		0.64-1.0	24 hours/ 6 days	
MOA 22							
Most emerged weeds except for resistant pigweed; established volunteer ferns	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	16-32 oz 11-22 oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply to emerged weeds up to 1 week before spear emergence, or immediately after last cutting has removed all above-ground parts, or as a directed spray under mature ferns. <u>Direct contact of the spray with asparagus may result in serious crop injury.</u> For spot treatment, apply immediately after cutting, but prior to emergence of new spears. The need for an adjuvant depends on brand used.		
	MOA 9						

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			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT				
Postemergence (POST) (established - at least 2 yr old) (continued)	Nutsedge, wild radish, non-ALS resistant 1" pigweed, cocklebur, ragweed (continued)	<i>halosulfuron</i> Sandea 75DG	0.5-1.5 oz	0.024-0.072	12 hours/ 1 day	<p>Postemergence. Apply before or during the harvesting season. <u>Do not use a non-ionic surfactant or crop oil as unacceptable crop injury may occur.</u> Without the addition of a NIS, postemergence weed control may be reduced.</p> <p>Post Harvest. Apply after final harvest with drop nozzles to limit contact with crop. Contact with the fern may result in temporary yellowing. Add a NIS at 1 qt/100 gal of spray mixture. Under heavy nutsedge pressure, split applications will be more effective, see label for details. Do not exceed 2 oz/A/yr; do not make more than 2 applications/crop cycle.</p>		
		MOA 2						
	Annual grasses and small-seeded broadleaf weeds	<i>linuron</i> Lorox DF 50WDG	1-2 lb	0.5-1	24 hours/ 1 day			
		MOA 7						
	Actively growing annual and perennial grasses.	<i>clethodim</i> SelectMax 0.97EC TapOut 0.97EC	9-16 fl oz 9-16 fl oz	0.07-0.12	24 hours/ 1 day			
		MOA 1						
		<i>fluzifop-P-butyl</i> Fusilade DX 2EC	8-16 oz				0.13-0.25	12 hours/ 1 day
		MOA 1						
	<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.29	12 hours/ 1 day				
	MOA 1							

COMMERCIAL VEGETABLES - WEED CONTROL

ASPARAGUS

Recommended Herbicide Uses In Specific Bean Crops		Bean Type			
Herbicide	Application Method*	Dry	Lima	Snap	Southern Pea
<i>carfentrazone</i> Aim EC	Preplant	X	X	X	X
<i>paraquat</i> (numerous brands)	Preplant		X	X	X
<i>glyphosate</i> Roundup, others	Preplant	X	X	X	X
<i>EPTC</i> Eptam	PPI	X		X	
<i>ethalfluralin</i> Sonalan	PPI	X			
<i>pendimethalin</i> Prowl, others	PPI	X	X	X	X
<i>trifluralin</i> Treflan, others	PPI	X	X	X	X
<i>dimethenamid</i> Outlook	PPI or PRE	X			
<i>imazethapyr</i> Pursuit	PPI or PRE	X	X	X	X
<i>S-metolachlor</i> Dual Magnum	PPI or PRE	X	X	X	X
<i>fomesafen</i> Reflex	PRE	X		X	
<i>halosulfuron</i> Sandea	PRE	X	X	X	
<i>clomazone</i> Command 3 ME	PRE		X	X	X
<i>bentazon</i> Basagran	POST	X	X	X	X
<i>clethodim</i> SelectMax, TapOut	POST	X	X	X	X
<i>dimethenamid</i> Outlook	POST	X			
<i>fluzifop</i> Fusilade DX	POST	X			
<i>fomesafen</i> Reflex	POST	X		X	
<i>halosulfuron</i> Sandea	POST		X	X	
<i>imazethapyr</i> Pursuit	POST	X			X
<i>quizalofop-P-ethyl</i> Assure II, Targa	POST	X		X	X
<i>sethoxydim</i> Poast	POST	X	X	X	X
<i>s-metolachlor</i> Dual Magnum	Directed or POST		X	X	X
<i>carfentrazone</i> Aim EC	Row Middle Only	X	X	X	X
<i>glyphosate</i> Roundup, others	Row Middle Only	X	X	X	X
<i>halosulfuron</i> Sandea	Row Middle Only	X	X	X	

* PPI = preplant incorporated; PRE = Preemergence; POST = Postemergence.

COMMERCIAL VEGETABLES - WEED CONTROL

BEANS (Dry)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds before seeding. The need for an adjuvant depends on brand used.
		Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0 EC MOA 14	0.8-2 fl oz	0.013-0.03	12 hours/ N/A
Preplant incorporated (PPI)	Annual grasses including Texas millet and small-seeded broadleaf weeds	<i>ethalfuralin</i> Sonalan HFP 3EC MOA 3	1.5-2 pt	0.6-0.75	24 hours/ N/A	Apply PPI 2-3 in. into the soil before planting in the spring. Fall applications may be made only with dry bulk fertilizer (according to the label). Use lower rates on coarse soils or when following with a Dual type product PRE.
		<i>pendimethalin</i> Prowl 3.3EC Prowl H20 3.8AS MOA 3	1.8-2.4 pt 1.5-2.0 pt	0.75-1 0.72-0.95	24 hours/ N/A	Incorporate 2-3 inches deep prior to planting. Applying immediately after planting and then irrigating is not supported by the label. Rates lower than some products recommend (1.2 to 1.5 pt/A) are suggested for sandy soils with low organic matter or when Dual Magnum will follow PRE. Applying immediately after planting and then irrigating is not supported by the label.
		<i>trifluralin</i> Treflan 4EC Trifluralin 4L MOA 3	1 pt 1 pt	0.5	24 hours/ N/A	Incorporate 2-3 inch deep, within 8 hr of application, into the soil prior to SPRING (according to label) planting. Rates lower than those labeled (12 oz/A) are suggested for sandy soils with low organic matter or when following with a Dual type product PRE. Applying immediately after planting and then irrigating is not supported by the label.
		Annual grass, broadleaves, nutsedge suppression	<i>EPTC</i> Eptam 7E MOA 8	2.25-3.5 pt	2-3	12 hours/ N/A
	Preplant incorporated (PPI) or Preemergence (PRE)	Annual grass and broadleaf weeds; partial control of Texas millet	<i>S-metolachlor</i> Dual Magnum 7.62EC MOA 15	12-16 oz	0.7-0.95	24 hours/ N/A
	Wild radish, nightshade, suppression of non-ALS resistant pigweed and purslane	<i>imazethapyr</i> Pursuit 2EC MOA 2	2-3 fl oz	0.03-0.047	4 hours/ 60 days	Apply PPI or PRE to the soil surface immediately after planting. Suggest mixing with a grass herbicide. Dry beans include navy great northern, red kidney, black turtle, cranberry, Pinto, and small white dry beans and adzuki. <u>Rotational restrictions are a significant concern, see label.</u> Do not make more than 1 application Pursuit/yr.

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			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preemergence (PRE)	Nutsedge suppression; non-ALS resistant pigweed, ragweed, wild radish	<i>halosulfuron</i> Sanda 75DF	0.5-0.67 oz	0.024-0.031	12 hours/ 30 days	Apply within 1 d of planting; do not apply while soil cracking. Use lower rate on coarse soils with low organic matter. Do not exceed 2/3 oz/A/crop cycle (includes hooded applications). <u>Review rotational restrictions.</u>
		MOA 2				
	Pigweeds, wild radish, bristly starbur, and suppression of yellow nutsedge.	<i>fomesafen</i> Reflex 2EC	12-16 oz	0.19-0.25	24 hours/ 45 days	Apply as a PRE application within 1 d of planting. Overhead irrigate lightly between 2 d after planting and 36 hr before emergence in an effort to avoid splashing treated soil onto beans when they are emerging. <u>Rotational restrictions are a significant concern, see label.</u> Do not make more than 1 application per year (includes POST).
		MOA 14				
Postemergence (POST)	Annual broad-leaf weeds such as cocklebur and smallflower morningglory	<i>bentazon</i> Basagran 4SL	1 pt	0.5	48 hours/ 30 days	Beans are tolerant after the first trifoliolate leaf has fully expanded. Yellowing, bronzing, speckling or burning of leaves may occur. Tolerant beans include adzuki, navy, pinto, pink, greater northern, kidney, red, white, cranberry, black turtle soup, small lima, large lima, and snap beans. In Georgia, Basagran can not be applied alone. May be applied from 6 to 16 oz per acre to dry and succulent beans ONLY when mixed with Raptor or Pursuit, see labels. Raptor is not labeled on some beans grown in Georgia, see label. Use of oil additive with Basagran on beans may increase the leafburn and injury.
		MOA 6				
	Morningglory and pigweed less than 2 inch	<i>fomesafen</i> Reflex 2EC	12-16 oz	0.19-0.25	24 hours/ 45 days	Apply to beans with at least two fully expanded trifoliolate leaves; add NIS at 1 qt/100 gal of spray. Minor injury will likely occur. Injury may be more severe if applied in the morning with an overcast sky and a heavy dew. Allow 5 d between an application of Reflex and a grass herbicide. One application/yr. <u>Rotational restrictions are a significant concern, see label.</u>
		MOA 14				
Wild radish, nightshade, suppression of non-ALS resistant pigweed and purslane	<i>imazethapyr</i> Pursuit 2EC	3.0 fl oz	0.047	4 hours/ 60 days	Apply after dry beans have at least one fully expanded trifoliolate leaf. Add NIS at 1 qt/100 gal spray mixture; <u>do not use COC.</u> DO not make more than 1 application Pursuit/yr. Dry beans include navy great northern, red kidney, black turtle, cranberry, pinto, and small white dry beans. <u>Rotational restrictions are a significant concern, see label.</u>	
	MOA 2					
Actively growing annual and perennial grasses.	<i>clethodim</i> Select 2EC SelectMax 0.97EC TapOut 0.97EC	6-16 fl oz 12-32 fl oz 12-32 fl oz	0.09-0.25	24 hours/ 30 days	Add NIS at 1qt/100 gal spray mix for Select Max and TapOut; add 1% v/v of crop oil with Select. Do not apply a POST broadleaf herbicide within 5 d of clethodim as reduced grass control may occur. Do not mix with other pesticides.	
	MOA 1					
	<i>quizalofop P-ethyl</i> Assure II 0.88EC Targa 0.88EC	6-12 fl oz 6-12 fl oz	0.04-0.08	12 hours/ 30 days	Add 1 qt NIS/100 gal spray. Do not mix with other pesticides. Do not apply more than 24 oz/A Assure or 28 oz/A Targa/season.	
	MOA 1					

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BEANS (Dry)

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			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT			
Postemergence (POST) (continued)	Actively growing annual and perennial grasses. (continued)	<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.29	12 hours/ 30 days	Add COC at 1 qt/A; see label about use of other additives. Adding crop oil may increase crop injury at high temperatures. Do not mix with other pesticides. Do not apply more than 4 pt/A/season sethoxydim.	
		MOA 1					
		<i>fluzifop-P-butyl</i> Fusilade DX 2EC	8-16 oz	0.13-0.25	12 hours/ 60 days		Add 1 qt NIS or 1 gal COC/100 gal of spray mix. Do not apply more than 48 oz/A/season of fluzifop. Do not mix with other pesticides.
ROW MIDDLES ONLY Hooded spray	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA suggests against hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant depends on brand used.	
		MOA 9					
	Moringglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days		Apply as a hooded spray in row middles avoiding contact with crop. Apply to weeds less than 3 in. Add 1.5-2 gal COC/100 gal of spray mix.
		MOA 14					
	Nutsedges, non ALS-resistant pigweed, cocklebur, ragweed, radish	<i>halosulfuron</i> Sanda 75DG	0.5-1.0 oz	0.024-0.047	12 hours/ 30 days		Apply between crop rows avoiding spray contact with crop. For emerged weeds add a NIS at 1 qt/100 gals of spray mix. Do not exceed 2/3 oz/A/crop cycle (includes PRE applications).
		MOA 2					

BEANS (Lima)

CROP/ APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Contact kill of all green foliage	<i>paraquat</i> Firestorm, Parazone 3SL Gramoxone Inteon 2SL	1.3-2.7 pt 2.0-4.0 pt	0.49-1.0	24 hours/ N/A	Apply to emerged weeds but before crop emergence. Add 1 qt NIS or 1 gal COC/100 gal spray mix.
		MOA 22				
	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae)	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	
MOA 9						
Morningglory, spiderwort, and small pigweed.		<i>carfentrazone</i> Aim EC 2.0 EC	0.8-2 fl oz	0.013-0.03	12 hours/ N/A	Apply prior to or within 24 hr of planting to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Likley need to mix with glyphosate.
		MOA 14				

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BEANS (Lima)

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			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant incorporated (PPI)	Annual grasses including Texas millet and small-seeded broadleaf weeds	<i>pendimethalin</i> Prowl 3.3EC Prowl H20 3.8AS	1.8-2.4 pt 1.5-2.0 pt	0.75-1	24 hours/ N/A	Incorporate 2-3 inches deep prior to planting. Rates lower than some products recommend (1.2-1.5 pt/A) are suggested for sandy soils with low organic matter or when following with a Dual type product PRE. Applying immediately after planting and then irrigating is not supported by the label.
		MOA 3				
		<i>trifluralin</i> Treflan 4 EC Trifluralin 4 L	1 pt 1 pt	0.5	24 hours/ N/A	Incorporate 2-3 inch deep within 8 hr of application. Rates lower than those labeled (12 oz/A) are suggested for sandy soils with low organic matter or when following with a Dual type product PRE. Applying immediately after planting and then irrigating is not supported by the label.
		MOA 3				
Preplant incorporated (PPI) or Preemergence (PRE)	Wild radish, nightshade, suppression of non-ALS resistant pigweed and purslane	<i>imazethapyr</i> Pursuit 2 EC	2-3 fl oz	0.03-0.047	4 hours/ 30 days	Apply PPI or PRE to the soil surface immediately after planting. Suggest mixing with a grass herbicide. Do not make more than 1 application per year. Rotational restrictions are a significant concern.
		MOA 2				
	Annual grass and broadleaf weeds; partial Texas millet control	<i>S-metolachlor</i> Dual Magnum 7.62EC	12-16 oz	0.7-0.95	24 hours/ N/A	Apply PRE after planting or apply preplant and soil incorporate 2 in deep into the soil before planting. PRE application suggested; apply within 1 d of planting and irrigate 1 d of application (2 d of planting). Use lower rates on sandy soils with low organic matter and when in a system with pendimethalin or trifluralin.
		MOA 15				
Preemergence (PRE)	Annual grasses and broadleaf weed suppression; weak on pigweed	<i>clomazone</i> Command 3ME	0.4-0.67 pt	0.15-0.25	12 hours/ N/A	Apply PRE to the soil surface immediately after seeding. See label for buffer and rotation restrictions. Limited GA research
		MOA 13				
	Nutsedge suppression, control of non-ALS resistant pigweed, ragweed, wild radish	<i>halosulfuron</i> Sanda 75DG	0.5-0.75 oz	0.024-0.036	12 hours/ 30 day	Apply within 1 d of planting; do not apply while soil cracking. Use lower rate on coarse soils with low organic matter. Do not apply more than 1 oz/A/crop cycle (includes POST and hooded applications).
		MOA 2				
Postemergence (POST)	Annual broadleaf weeds such as cocklebur and smallflower morningglory	<i>bentazon</i> Basagran 4SL	1 pt	0.5	48 hours/ 30 day	Beans are tolerant after the first trifoliate leaf has fully expanded. Yellowing, bronzing, speckling or burning of leaves may occur. Includes small and large lima. In Georgia, Basagran can not be applied alone. May be applied from 6 to 16 oz per acre to dry and succulent beans ONLY when mixed with Raptor or Pursuit, see labels. Raptor is not labeled on some beans grown in Georgia, see label. Use of oil additive with Basagran on beans may increase the leafburn and injury.
		MOA 6				

COMMERCIAL VEGETABLES - WEED CONTROL

BEANS (Lima)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST) (continued)	Nutsedge, non-ALS resistant 1" pigweed, ragweed, cocklebur, and wild radish	<i>halosulfuron</i> Sanda 75DG	0.5-0.67oz	0.024-0.031	12 hours/ 30 days	Apply after the 3rd trifoliolate stage but before flowering. Directed sprays are recommended. Can cause temporary chlorosis and stunting thereby delaying maturity and harvest a few days. Add NIS at 1qt/100 gal spray mix. Do not exceed 1 oz/A/crop cycle (includes PRE and hooded applications). Label states use of Sandea is at the grower's risk.
		MOA 2				
	Actively growing annual and perennial grasses	<i>clethodim</i> SelectMax 0.97EC TapOut 0.97EC	9-16 fl oz 9-16 fl oz	0.07-0.12	24 hours/ 21 days	Add NIS at 1qt/100 gal spray mix. Do not make more than one application/season. Do not apply a POST broadleaf herbicide within 5 d of clethodim as reduced grass control may occur. Do not mix with other pesticides.
MOA 1						
		<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.29	12 hours/ 15 days	Add a COC at a rate of 1 qt/A; see label about use of other additives. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 4 pt/A/season sethoxydim. Do not mix with other pesticides.
		MOA 1				
Postemergence or Directed	Residual control of pigweeds, purslane, spiderwort, and grasses	<i>S-metolachlor</i> Dual Magnum 7.62EC	8-12 oz	0.47-0.7	24 hours/ 50 days	A Section 24(c) Local Need Label must be obtained at www.farmassit.com prior to this use. Apply after 1 st trifoliolate; expect some leaf speckling if applied topically. Avoid spraying plants with dew and apply only in water. Label is designed for directed application while cultivating. Do not apply more than 2 pt/A of Dual Magnum for the entire season. Do not feed treated plant material.
ROW MIDDLES ONLY	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA suggest against hooded sprays. To avoid severe injury to crop, do not allow herbicide to contact any part of the crop including roots. The need for an adjuvant depends on brand used.
Hooded Spray		MOA 9				
	Morningglory, spiderwort, and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	Apply as a hooded spray in row middles avoiding contact with crop. Apply to weeds less than 3 in. Add 1.5 - 2 gal COC/100 gal of spray mix.
	Nutsedge, wild radish, non-ALS resistant 1" pigweed, ragweed, cocklebur	<i>halosulfuron</i> Sanda 75DG	0.5-1.0 oz	0.024-0.048	12 hours/ 30 days	Apply between crop rows avoiding spray contact with crop. For emerged weeds add a NIS at 1 qt/100 gals of spray. Do not exceed 1 oz/A/crop cycle (includes PRE and POST applications). <u>Review rotational restrictions.</u>
		MOA 2				

COMMERCIAL VEGETABLES - WEED CONTROL

BEANS (Snap)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Contact kill of all green foliage	<i>paraquat</i> Firestorm, Parazone 3SL Gramoxone Inteon 2SL MOA 22	1.3-2.7 pt 2.0-4.0 pt	0.49-1.0	24 hours/ N/A	Apply to emerged weeds but before crop emergence. Add 1 qt NIS or 1 gal COC/100 gal spray mix.
	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds before seeding. The need for an adjuvant depends on brand used.
	Morningglory, spiderwort, and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC MOA 14	0.8-2 fl oz	0.013-0.03	12 hours/ N/A	Apply prior to or within 24 hr of planting to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Likely need to mix with glyphosate.
Preplant incorporated (PPI)	Annual grasses including Texas millet and small-seeded broadleaf weeds	<i>pendimethalin</i> Prowl 3.3EC Prowl H20 3.8AS MOA 3	1.8-2.4 pt 1.5-2.0 pt	0.75-1 0.72-0.95	24 hours/ N/A	<u>Incorporate 2-3 inches deep prior to planting.</u> Rates lower than some products recommend (1.2-1.5 pt/A) are suggested for sandy soils with low organic matter or when following with a Dual type product PRE. Applying immediately after planting and then irrigating is not supported by the label.
		<i>trifluralin</i> Treflan 4EC Trifluralin 4L MOA 1	1 pt 1 pt	0.5	12 hours/ N/A	Incorporate 2-3 inch deep within 8 hr of application. Rates lower than those labeled (12 oz/A) are suggested for sandy soils with low organic matter or when following with a Dual type product PRE. Applying immediately after planting and then irrigating is not supported by the label.
	Annual grass, broadleaf weeds, nutsedge suppression	<i>EPTC</i> Eptam 7E MOA 8	2.25-3.5 pt	2-3	12 hours/ N/A	Apply PPI 3 in. deep before before planting. Suggested that one include pendimethalin or trifluralin, see label for recommendations and restrictions.
		Annual grass and broadleaf weeds; Texas millet suppression	<i>S-metolachlor</i> Dual Magnum 7.62EC MOA 15	12-16 oz	0.7-0.95	24 hours/ N/A
Preplant incorporated (PPI) or Preemergence (PRE)	Wild radish, nightshade, suppression of non-ALS resistant pigweed and purslane	<i>imazethapyr</i> Pursuit 2EC MOA 2	1.5 fl oz	0.023	4 hours/ 30 days	Apply PPI or PRE to soil surface immediately after planting. Suggest mixing with a grass herbicide. This is a low rate of Pursuit and should be used as part of a system. Do not apply after July 31 and do not make more than 1 application per year. <u>Rotational restrictions are a significant concern, see label.</u>

COMMERCIAL VEGETABLES - WEED CONTROL

BEANS (Snap)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preemergence (PRE)	Annual grasses and broadleaf weed suppression; weak on pigweed	<i>clomazone</i> Command 3ME	0.4-0.67 pt	0.15-0.25	12 hours/ N/A	Clomazone should be applied preemergence to the soil surface immediately after seeding. See label for rotation restrictions. Limited GA research.
		MOA 13				
	Pigweeds, wild radish, bristly starbur, and suppression of yellow nutsedge.	<i>fomesafen</i> Reflex 2EC	12-16 oz	0.19-0.25	24 hours/ 30 days	Apply as a PRE application within 1 d of planting and irrigate lightly after application but at least 36 hr before emergence in an effort to avoid splashing treated soil onto beans when they are emerging. One application/yr. Rotational restrictions are a significant concern, see label.
MOA 14						
Nutsedge suppression, non-ALS resistant pigweed, wild radish, ragweed	<i>halosulfuron</i> Sanda 75DG	0.5-1.0 oz	0.024-0.048	12 hours/ 30 days	Apply within 1 d of planting; do not apply while soil cracking. Use lower rate on coarse soils with low organic matter. Do not apply more than 1 oz/A/crop cycle (includes POST and hooded applications).	
Postemergence (POST)	Annual broadleaf weeds such as cocklebur and smallflower morningglory; yellow nutsedge suppression	<i>bentazon</i> Basagran 4SL	1 pt	0.5	48 hours/ 30 days	Beans are tolerant after the first trifoliolate leaf has fully expanded. In Georgia, Basagran can not be applied alone. May be applied from 6 to 16 oz per acre to dry and succulent beans ONLY when mixed with Raptor or Pursuit, see labels. Raptor is not labeled on some beans grown in Georgia, see label. Use of oil additive with Basagran on beans may increase the leaf burn and injury.
		MOA 6				
	Pigweeds and morningglory less than 2 inch.	<i>fomesafen</i> Reflex 2EC	12-16 oz	0.19-0.25	24 hours/ 30 days	Apply to beans with at least two fully expanded trifoliolate leaves; add NIS at 1 qt/100 gal of spray. Minor injury will likely occur. Injury may be more severe if applied in the morning with an overcast sky and a heavy dew. Allow 5 d between an application of Reflex and a grass herbicide. One application/yr. <u>Rotational restrictions are a significant concern, see label.</u>
		MOA 14				
Nutsedge, non-ALS resistant pigweed, ragweed, cocklebur, and wild radish	<i>halosulfuron</i> Sanda 75DG	0.5-0.67oz	0.024-0.031	12 hours/ 30 days	Apply after the 3rd trifoliolate stage but before flowering. Directed sprays are recommended. Can cause temporary chlorosis and stunting thereby delaying maturity and harvest by a few days. Add NIS at 1qt/100 gal spray mix. Do not exceed 1 oz/A/crop cycle (includes PRE and hooded applications). Label states use of Sandea is at the grower's risk. <u>Review rotational restrictions.</u>	
	MOA 2					
Actively growing annual and perennial grasses	<i>clethodim</i> SelectMax 0.97EC TapOut 0.97EC	9-16 fl oz 9-16 fl oz	0.07-0.12	24 hours/ 21 days	Add NIS at 1qt/100 gal spray mix. Do not make more than one application/season. Do not apply a POST broadleaf herbicide within 5 d of clethodim as reduced grass control may occur. Do not mix with other pesticides.	
		MOA 1				

COMMERCIAL VEGETABLES - WEED CONTROL

BEANS (Snap)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST) (continued)	Actively growing annual and perennial grasses (continued)	<i>quizalofop P-ethyl</i> Assure II 0.88EC Targa 0.88EC MOA 1	6-12 fl oz 6-12 fl oz	0.04-0.08	12 hours/ 15 days	Apply higher rate for bermudagrass or johnsongrass. Add 1 qt NIS/100 gal spray mix. Do not exceed 14 oz/A/season and do not mix with other pesticides.
		<i>sethoxydim</i> Poast 1.53EC MOA 1	1-1.5 pt	0.19-0.29	12 hours/ 15 days	Add a COC at a rate of 1 qt/A; see label about use of other additives. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 4 pt/A/season sethoxydim. Do not mix with other pesticides.
Postemergence or Directed	Residual control of pigweeds, purslane, spiderwort, and grasses	<i>S-metolachlor</i> Dual Magnum 7.62EC MOA 15	8-12 oz	0.47-0.7	24 hours/ 50 days	A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use. Apply after 1 st trifoliolate; expect some leaf speckling if applied topically. Avoid spraying plants with dew and apply only in water. Label is designed for directed application while cultivating. Do not apply more than 2 pt/A of Dual Magnum for the entire season. Do not feed treated plant material.
ROW MIDDLES ONLY Hooded spray	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae) MOA 9	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA suggests against hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for adjuvant depends on brand used.
	Morningglory, spiderwort, and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC MOA 14	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	Apply as a hooded spray in row middles avoiding contact with crop. Apply to weeds less than 3 in. Add 1.5-2 gal COC/100 gal of spray mix.
	Nutsedge, wild radish, non-ALS resistant 1" pigweed, ragweed, cocklebur	<i>halosulfuron</i> Sanda 75DG MOA 2	0.5-1.0 oz	0.024-0.048	12 hours/ 30 days	Apply between crop rows. If weeds are emerged use a NIS at 1 qt/100 gals of spray mixture. Do not exceed 1 oz/A/crop cycle (includes PRE and POST applications). <u>Review rotational restrictions.</u>

COMMERCIAL VEGETABLES - WEED CONTROL

BEANS (Southern Pea)

CROP/ APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Annual and perennial grass and broadleaf weeds	<i>paraquat</i> Firestorm, Parazone 3SL Gramoxone Inteon 2SL MOA 22	1.3-2.7 pt 2.0-4.0 pt	0.5-1	24 hours/ N/A	Succulent peas only. Apply to emerged weeds but before crop emergence. Add 1 qt NIS or 1 gal COC/100 gal spray mix.
	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds before seeding. Do not feed crop residue to livestock for 8 weeks following treatment. The need for an adjuvant depends on brand used.
	Morningglory, spiderwort, and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC MOA 14	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	Apply prior to or within 24 h of planting to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Likley need to mix with glyphosate.
Preplant incorporated (PPI)	Annual grasses including Texas millet and small-seeded broadleaf weeds	<i>pendimethalin</i> Prowl 3.3EC Prowl H2O 3.8AS MOA 3	1.8-2.4 pt 1.5-2.0 pt	0.75-1	24 hours/ N/A	Incorporate 2-3 inches deep prior to planting. Rates lower than some products recommend (1.2 to 1.5 pt/A) are suggested for sandy soils with low organic matter or when following with a Dual type product PRE. Applying immediately after planting and then irrigating is not supported by the label.
		<i>trifluralin</i> Treflan 4EC Trifluralin 4L MOA 3	1 pt 1 pt	0.5	12 hours/ N/A	Incorporate 2-3 inch deep within 8 hr of application. Rates lower than those labeled (12 oz/A) are suggested for sandy soils with low organic matter or when following with a Dual type product PRE. Applying immediately after planting and then irrigating is not supported by the label.
Preplant incorporated (PPI) or Preemergence (PRE)	Annual grass and broadleaf weeds; yellow nutsedge suppression; partial control of Texas millet	<i>S-metolachlor</i> Dual Magnum 7.62EC MOA 15	12-16 oz	0.7-0.95	24 hours/ N/A	Apply PRE after planting or apply preplant and soil incorporate 2 in deep into the soil before planting. PRE application suggested; apply within 1 d of planting and irrigate within 1 d of application (2 d of planting). Use lower rates on sandy soils with low organic matter and when in a system with pendimethalin or trifluralin.
	Wild radish, nightshade, suppression of non-ALS resistant pigweed	<i>imazethapyr</i> Pursuit 2EC MOA 2	3-4 fl oz	0.047-0.06	4 hours/ 30 days	Apply PPI or PRE to the soil surface immediately after planting. Suggest mixing with a grass herbicide. One application per year only. <u>Rotational restrictions are a significant concern.</u>
Preemergence (PRE)	Annual grasses and broadleaf weed suppression; weak on pigweed	<i>clomazone</i> Command 3ME MOA 13	0.4-0.67 pt	0.15-0.25	12 hours/ 45 days	Apply to the soil surface immediately after seeding. See label rotation restrictions. Limited GA research.

COMMERCIAL VEGETABLES - WEED CONTROL

BEANS (Southern Pea)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST) (continued)	Annual broadleaf weeds such as cocklebur and smallflower morningglory	<i>bentazon</i> Basagran 4SL	1 pt	0.5	48 hours/ Succulent Bean = 10 days, Dry Bean = 30 days	Garden, English and southern peas. Apply after 3 pairs of leaves are present. Injury such as yellowing, bronzing, speckling or burning of leaves may occur. In Georgia, Basagran can not be applied alone. May be applied from 6-16 oz/A ONLY when mixed with Raptor or Pursuit, see labels. Raptor is not labeled on some peas/beans grown in Georgia, see label. Label suggests not adding oil.
		MOA 6				
	Wild radish, nightshade, suppression of non-ALS resistant pigweed	<i>imazethapyr</i> Pursuit 2 EC	3-4 fl oz	0.047-0.063	4 hours/ 30 days	Apply small emerged weeds when Southern peas are at least 3 in, but prior to 5 nodes and before flowering. Add a NIS at a rate of 1 qt/100 gal spray mix; do not use COC. One application per year only.
		MOA 2				
	Actively growing annual and perennial grasses.	<i>clethodim</i> SelectMax 0.97 EC TapOut 0.97 EC	9-16 fl oz	0.07-0.12	24 hours/ Succulent Bean = 21 days, Dry Bean = 30 days	Add NIS at 1qt/100 gal spray mix. Do not apply a POST broadleaf herbicide within 5 d of clethodim as reduced grass control may occur. Do not mix with other pesticides.
			9-16 fl oz			
<i>quizalofop P-ethyl</i> Assure II 0.88 EC Targa 0.88 EC		6-12 fl oz	0.04-0.08	12 hours/ Succulent Bean = 30 days, Dry Bean = 60 days	Add 1 qt NIS/100 gal spray mix. Do not exceed 14 oz/A/season and do not mix with any other pesticide.	
		6-12 fl oz				
<i>sethoxydim</i> Poast 1.53 EC	1-1.5 pt	0.19-0.3	12 hours/ Succulent Bean = 15 days, Dry Bean = 30 days	Add a COC at a rate of 1 qt/A; see label about use of other additives. Adding crop oil may increase crop injury at high temperatures Do not apply more than 4 pt/A/season sethoxydim. Do not mix with other pesticides.		
Postemergence or Directed	Residual control of pigweeds, purslane, spiderwort, and grasses	<i>S-metolachlor</i> Dual Magnum 7.62 EC	8-12 oz	0.47-0.7	24 hours/ 50 days	A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use. Apply after 1 st trifoliolate; expect some leaf speckling if applied topically. Avoid spraying plants with dew and apply only in water. Label is designed for directed application while cultivating. Do not apply more than 2 pt/A of Dual Magnum for the entire season. Do not feed treated plant material.
		MOA 15				
ROW MIDDLES ONLY Hooded spray	Most emerged weeds except for resistant pigweed	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA recommends against hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant varies by brand.
		MOA 9				
	Morningglory, spiderwort, and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	Apply as a hooded spray in row middles avoiding contact with crop. Apply to weeds less than 3 inch: pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Do not exceed 0.096 lb ai/A/yr, including preplant applications.
		MOA 14				

COMMERCIAL VEGETABLES - WEED CONTROL

BEETS (Garden or Table)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Most emerged weeds except for resistant pigweed, primrose, or spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Garden beets only. Apply to emerged weeds before seeding. The need for an adjuvant depends on brand used.
Preemergence (PRE)	Broadleaf weeds only including common ragweed, smartweed, and wild mustard	<i>pyrazon</i> Pyramin 65DF MOA 5	4.6-5.4 lb	3.1-3.7	12 hours/ N/A	Table beets only. Not recommended for use on sands or loamy sand soils as severe injury may occur. Use lower rates on coarse soils. Apply after planting before crop and weeds emerge. If rain does not occur within 5 d after application, beets should be irrigated. Do not mix with other pesticides. Availability is a concern!
Postemergence (POST)	A few broadleaf weeds including clover, nightshade, jimsonweed, and ragweed	<i>clopyralid</i> Stinger 3EC MOA 4	0.25-0.5 pt	0.09-0.19	12 hours/ 30 days	Garden beets only. Apply to beets between the 2 and 8 leaf stage when weeds are small and actively growing. <u>No Georgia research</u> , try on small acreage first. Apply no more than 0.5 pt/A/year; see label for rotational restrictions.
	Broadleaf weeds; including mustard purslane suppression	<i>phenmedipham</i> Spin-Aid 1.3EC MOA 5	3-6 pt	0.5-1.0	12 hours/ 60 days	Garden beets only. Apply when beets have at least 6 true leaves and weeds have less than 2 leaves. Use higher rates only on well established plants not under stress. Minor crop stunting may be observed for approximately 10 d. Do not use additional wetting agents.
	Broadleaf weeds only	<i>pyrazon</i> Pyramin 65DF MOA 5	5.4 lb	3.7	12 hours/ --	Table beets only. Not recommended for sand or loamy sand soils as severe injury can occur. Use lower rates on coarse soils. Do not mix with other pesticides. Apply after beets have expanded 2 true leaves. Availability is a concern!
	Actively growing annual and perennial grasses.	<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC MOA 1	6-8 fl oz 9-16 fl oz 9-16 fl oz	0.09-0.12 0.07-0.12 0.07-0.12	24 hours/ 30 days	Garden beets only. For Select, add 1 gal COC/100 gal spray mix. For SelectMax or TapOut, add 1qt NIS/100 gal spray mix. Controls annual bluegrass. Adding crop oil may increase crop injury at high temperatures. Do not mix with other pesticides. Application of a broadleaf herbicide within 5 d of clethodim may result in reduced grass control.
		<i>sethoxydim</i> Poast 1.53EC MOA 1	1-1.5 pt	0.19-0.29	12 hours/ 60 days	Garden beets only. Add 1 qt of COC/A. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 5 pt/A/season sethoxydim. Do not mix with other pesticides.
ROW MIDDLES ONLY Hooded spray	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA suggests against hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant varies by brand.
	Morningglory, spiderwort, and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC MOA 14	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 in. Add 1.5-2 gal COC/100 gal of spray mix.

COMMERCIAL VEGETABLES - WEED CONTROL

CARROTS

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Contact kill of all green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL MOA 22	1.3-2.7 pt 2.0-4.0 pt	0.49-1.0	24 hours/ N/A	Apply to emerged weeds but before crop emergence. Add 1 qt NIS or 1 gal COC/100 gal spray mix.
	Most emerged weeds except for resistant pigweed, primrose or spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds before seeding. The need for an adjuvant depends on brand used.
Preplant incorporate (PPI)	Annual grasses and small-seeded broadleaf weeds	<i>trifluralin</i> Treflan 4EC Trifluralin 4L MOA 3	1 pt	0.5	12 hours/ N/A	Apply preplant and soil incorporate 2 to 3 in deep before seeding. Incorporate within 8 hr of application.
Postemergence (POST)	Annual broadleaf weeds and some grasses	<i>linuron</i> Lorox DF 50WDG MOA 7	1.5-3 lb	0.75-1.5	24 hours/ 14 days	Label prohibits use on soils with < 1% organic matter. Apply after carrots are 3 inches tall and weeds are less than 2 inches. Label warns that growers are at their on risk if adding surfactant; DO NOT add any other product. Avoid spraying after 3 or more cloudy d or when temperature exceeds 85° F. Repeat applications may be made, but do not exceed 4 lb product/A/yr.
		<i>metribuzin</i> Dimetric Metribuzin Metri 75DF Metri 4F MOA 5	0.33 lb 0.5 pt	0.25	12 hours/ 60 days	Apply overtop when carrots have 5 to 6 true leaves but weeds are less than 1 in. Some injury may occur under cool, moist conditions. Avoid spraying after 3 or more cloudy d. Do not apply within 3 d of other pesticides. Need for additive is not discussed on label. Do not exceed 0.5 lb ai/A/crop season. Try limited acres; some GA growers believe injury level is not acceptable.
	Residual control of pigweed, purslane, spiderwort, and grasses	<i>S-metolachlor</i> Dual Magnum 7.62EC MOA 15	8-12 oz	0.47-0.7	24 hours/ 64 days	A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use. Apply 8 oz/A when carrots are at least 4 inch and have 5 leaves; 12 oz/A can be applied onces carrots are 6 inch with at least 9 leaves. Avoid spraying plants with dew and apply only in water. New label, limit use and rate until experience obtained.
		Actively growing annual and perennial grasses.	<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC MOA 1	6-8 fl oz 9-16 fl oz 9-16 fl oz	0.09-0.12 0.07-0.12 0.07-0.12	24 hours/ 30 days
			<i>sethoxydim</i> Poast 1.53EC MOA 1	1-1.5 pt	0.19-0.29	12 hours/ 30 days

COMMERCIAL VEGETABLES - WEED CONTROL

CARROTS

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST) (continued)	Actively growing annual and perennial grasses. (continued)	<i>fluzifop-P-butyl</i> Fusilade DX 2EC MOA 1	6-16 oz	0.1-0.25	12 hours/ 45 days	Add 1 gal COC or 1 qt NIS/100 gal spray mix. Adding crop oil may increase crop injury at high temperatures. Do not mix with other pesticides. Do not apply more than 48 oz/A/season.
ROW MIDDLES ONLY Hooded spray	Most emerged weeds except for resistant pigweed, primrose, or spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA suggests against hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant varies by brand.
	Morningglory, spiderwort, and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC MOA 14	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 in. Add 1.5-2 gal COC/100 gal of spray mix.

CELERY

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds before seeding. The need for an adjuvant depends on brand used.
	Primrose, geranium, henbit and a few grasses	<i>oxyfluorfen</i> Goaltender 4F Goal 2 XL 2EC MOA 14	up to 1 pt up to 2 pt	up to 0.5 lb	24 hours/ N/A	Transplants only. Apply to soil surface of pre-formed beds at least 30 d prior to transplanting. <u>NO Georgia research, try on limited acres.</u>
Preplant incorporate (PPI) or Preemergence (PRE)	Annual grasses and small-seeded broadleaf weeds	<i>trifluralin</i> Treflan 4EC Trifluralin 4L MOA 3	1 pt 1 pt	0.5	12 hours/ N/A	May be applied to direct seeded or transplant celery before planting, at planting, or immediately after planting. Incorporate within 8 hr of application.
		<i>bensulide</i> Prefar 4-E MOA 8	5-6 qt	5-6	12 hours/ N/A	Transplants only. Apply PRE after planting, irrigate immediately after application. See label about rotation restrictions.
Postemergence (POST)	Annual grasses and broadleaf weeds 2" and less	<i>linuron</i> Lorox DF 50WDG MOA 7	1.5-2.5 lb	0.75-1.25 lb	24 hours/ 45 days	Make a single application after transplants are established but before celery is 8 in tall. Do not use surfactant or crop oil. Avoid spraying after 3 or more cloudy d or when temperature exceeds 85° F. Not recommended for sands or loamy sand soil. Do not apply within 1 week of other pesticides.

COMMERCIAL VEGETABLES - WEED CONTROL

CELERY

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST) (continued)	Actively growing annual and perennial grasses.	<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC	6-8 fl oz 9-16 fl oz 9-16 fl oz	0.09-0.12 0.07-0.12 0.07-0.12	24 hours/ 30 days	For Select, add 1 gal COC/100 gal spray mix. For SelectMax, add 1qt NIS/ 100 gal spray mix. Controls annual bluegrass. Adding crop oil may increase crop injury at high temperatures. Do not mix with other pesticides. Application of a broadleaf herbicide within 5 d of clethodim may result in reduced grass control.
		MOA 1				
		<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.3		
ROW MIDDLES ONLY Hooded spray	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA suggests against hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant varies by brand.
		MOA 9				
	Morningglory, spiderwort, and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 inch: pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix.
		MOA 14				

COLE CROPS (Broccoli, Cabbage, Cauliflower)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Contact kill of all green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL	1.3-2.7 pt 2.0-4.0 pt	0.49-1.0	24 hours/ N/A	Apply to emerged weeds but before crop emergence or transplanting. Add 1 qt NIS or 1 gal COC/100 gal spray mix. If applying over plastic, must wash off with 0.5 inch of rain or irrigation prior to planting.
		MOA 22				
		<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	32-64 oz 22-44 oz	0.75-1.5 lb ae		
	Excellent residual option for henbit, purslane, pigweed, primrose, smartweed, and many others; controls small emerged weeds as well	<i>oxyfluorfen</i> Goal 2 XL 2EC Galigan 2E Goaltender 4F Galigan H2O 4F	12-24 oz 12-24 oz 6-12 oz 6-12 oz	0.19-0.375	24 hours/ N/A	Transplants only. Prepare land, apply oxyfluorfen, irrigate, and then wait 3 d (need at least 1 sunny day) before transplanting. Do not incorporate or knock the bed off after application. For most fields 0.19 to 0.25 lb ai/A is in order; however, if planting on light soils with cool/wet conditions rates may need to be lowered 15%. Do not apply ovetop of crop. The use of young (less than 5 wk old) transplants grown in containers less than 1" increase injury potential. Leaf cupping or crinkling may be observed.
		MOA 14				

COMMERCIAL VEGETABLES - WEED CONTROL

COLE CROPS (Broccoli, Cabbage, Cauliflower)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant incorporate	Annual grasses and small-seeded broadleaf weeds	<i>trifluralin</i> Treflan 4EC Trifluralin 4L	12-16 oz	0.38-0.5	12 hours/ N/A	<p>Transplants: Apply preplant and incorporate into the soil 2 to 3 in. within 8 hr of application. Use lower rates on coarse soils with low organic matter or when cold and/ or wet.</p> <p>Direct Seeded: Apply preplant and incorporate 2 to 3 in. into the seed bed within 8 hr of application. Suggest no more than 12 oz/A for most locations. <u>If soil conditions are cool and wet, reduced stands and stunting may occur.</u></p>
		MOA 3				
Preplant incorporate (PPI) or Preemergence (PRE)	Annual grasses and small-seeded broadleaf weeds	<i>bensulide</i> Prefar 4E	5-6 qt	5-6	12 hours/ N/A	<p>Also labeled for, but not limited to, Chinese broccoli, broccoli rabb, brussels sprouts, Chinese cabbage, Chinese mustard cabbage, and kohirabi. Apply PPI or PRE after planting. With PPI, incorporate to 1 in. With PRE application, irrigate immediately after application. Check replant restrictions for small grains and other crops on label.</p>
		MOA 8				
Preplant or Preemergence (PRE)	Annual grasses and small-seeded broadleaf weeds including common ragweed and smartweed	<i>napropamide</i> Devrinol 50DF Devrinol 2-XT	2-3 lb 2-3 qt	1-1.5	24 hours/ N/A	<p>Apply to weed-free soil surface just after seeding or transplanting as a surface application. Light cultivation, rainfall, or irrigation will be needed within 24 hr to activate the herbicide; the XT formulation should be SLIGHTLY slower to degrade with lack of activation. Plantback 60 d to leafy vegetables and 180 d for grains.</p>
		MOA 15				
Postemergence (POST)	Residual control of most grasses and some broadleaf weeds including purslane, spiderwort, and partial control of Texas millet	<i>S-metolachlor</i> Dual Magnum 7.62EC	10-12 fl oz	0.6-0.7	24 hours/ 60 days	<p>A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use.</p> <p>TRANSPLANTS: After transplanting in bareground, irrigate to seal soil around root ball; about 10 d after sealing soil apply Dual Magnum overtop. If applying in mulched systems, apply 10 d after transplanting.</p> <p>SEEDED: Apply overtop after crop reaches 3 in.</p> <p>ROW MIDDLE: May apply 1.25 pt/A in row middles as a banded application.</p>
		MOA 15				
	Actively growing annual and perennial grasses	<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.3	12 hours/ 30 days	<p>Add 1 qt of COC/A. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 3 pt/A/season sethoxydim. Do not mix with other pesticides.</p>
	<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC	6-8 fl oz 9-16 fl oz 9-16 fl oz	0.09-0.12 0.07-0.12 0.07-0.12	24 hours/ 30 days	<p>A section 24(c) state local need label allows an application of SelectMax without an adjuvant; applying Select Max at 9 oz/A when grasses are less than 3 inches is the best option for control without injury. The addition of NIS at 1 qt/100 gal spray mix is recommended for large grasses and goosegrass with Select Max. For Select, a crop oil at 1 gal/100 gal spray mix is required for control. Do not mix with other pesticides. Application of a broadleaf herbicide within 5 d of clethodim may result in reduced grass control.</p>	
	MOA 1					

COMMERCIAL VEGETABLES - WEED CONTROL

COLE CROPS (Broccoli, Cabbage, Cauliflower)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST) (continued)	Limited weed spectrum such as clover, sowthistle, cocklebur, ragweed	<i>clopyralid</i> Stinger 3EC MOA 4	0.25-0.5 pt	0.09-0.19	12 hours/ 30 days	Labeled for broccoli, cabbage, cauliflower, broccoli raab, brussels sprouts, cavalo broccoli, Chinese cabbage (bok choy), Chinese broccoli, Chinese mustard, and Chinese cabbage (Napa). Apply to crop when weeds are small and actively growing. Will control most legumes. Do not exceed 0.5 pt/A/yr. Review rotational restrictions.
Row Middles Only Hooded spray	Most emerged weeds except for resistant pigweed, primrose or spiderwort	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae) MOA 9	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA suggest against hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant varies by brand.
	Morningglory, spiderwort, and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC MOA 14	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	Apply as a hooded spray in the row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 inches; pigweed less than one inch. Add 1.5-2 gal COC/100 gal of spray mix.

COLE CROPS (Cabbage Only)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Annual grass and broadleaf weeds; weak on pigweed	<i>clomazone</i> Command 3ME MOA 14	0.67-0.75 pt	0.25-0.28	12 hours/ 45 days	Transplanted cabbage only. Prepare land, apply clomazone, irrigate, and then wait 3 d (need a sunny day) before transplanting. Roots of the transplants must be below the chemical barrier. Some plant whitening will likely occur. See label about rotation restrictions.

COMMERCIAL VEGETABLES - WEED CONTROL

CORN (Sweet)

CROP/ APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Contact kill of all green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2 SL MOA 22	1.3-2.7 pt 2.0-4.0 pt	0.49-1.0	24 hours/ N/A	Apply to emerged weeds but before crop emergence. Add 1 qt NIS or 1 gal COC/100 gal spray mix.
	Most emerged weeds except for resistant pigweed, primrose, and spiderwort	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds before seeding. Do not feed crop residue to livestock for 8 weeks following treatment. The need for an adjuvant depends on brand used.
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0 EC MOA 14	0.8-2 fl oz	0.013-0.031	12 hours/ N/A	Apply prior to planting to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Likley need to mix with glyphosate.
Preplant incorporated (PPI)	Nutsedge suppression plus grasses and broadleaves including panicum and seedling johnsongrass.	<i>EPTC</i> Eradicane 6.7EC MOA 8	4.75 pt	4	12 hours/ N/A	Apply and incorporate immediately just prior to planting Application and incorporation gives best control. A two pass incorporation required for nutsedge. Crop injury and reduced weed control may occur early in the growing season when conditions are cool and wet.
Preemergence (PRE)	Residual control of grass and broadleaves including pigweeds, purslane, and spiderwort.	<i>alachlor</i> Micro-Tech 4FME MOA 15	2-2.75 qt	2-2.75	12 hours/ N/A	Apply to soil surface immediately after planting. Use low rate on coarse textured soils and higher rates on medium textured soils. High rates improve control of ragweed and lambsquarters.
		<i>S-metolachlor</i> Dual II Mag. 7.64EC MOA 15	1-1.33 pt	0.95-1.27	24 hours/ 30 days	Apply to soil surface immediately after planting. Use lower rates on coarse soils and/ or if organic matter is less than 3%. In addition to the PRE, one may apply up to another 2 pt/A POST after corn emergence. In harsh conditions, Dual II Magnum is safer than Micro-Tech or Outlook and much safer than Dual Magnum.
	Most annual broadleaf and grass weeds	<i>atrazine</i> (various brands) 4L 90WDG MOA 5	1-2 qt 1.1-2.2 lb	1-2	12 hours/ N/A	Apply to the soil surface immediately after planting. Does not control fall panicum or smooth crabgrass. Check label for rotational restrictions. Do not apply more than 2.5 lb ai/A/yr with PRE+POST.
		<i>simazine</i> Princep 4 L Princep Caliber 90WDG MOA 5	1-1.2 qt 1.1-1.3 lb	1-1.2	48 hours/ 45 days	Apply to soil surface immediately after planting. See label for directions and rotational restrictions.

COMMERCIAL VEGETABLES - WEED CONTROL

CORN (Sweet)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS	
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT			
Preemergence (PRE) (continued)	Most annual broadleaf and grass weeds (continued)	<i>alachlor + atrazine</i> Bullet 4 F Lariat 4 F	2.5-3.75 qt 2.5-3.75 qt	1.5 to 2.3 + 0.9 to 1.4	12 hours/ N/A	Apply to soil surface immediately after planting. Use lower rates on coarse soils and/or with less than 3% organic matter. Do not make more than one application per year. Check label for rotational restrictions.	
		MOA 15 + 5					
		<i>S-metolachlor</i> + <i>atrazine</i> Bicep II Magnum, Bicep II Magnum FC 5.5 F	1.3-2.6 qt	0.78 to 1.56 + 1 to 2	24 hours/ N/A		Apply to soil surface immediately after planting. Use lower rates on coarse soils and/or with less than 3% organic matter. Check label for rotational restrictions.
		<i>S-metolachlor</i> + <i>atrazine</i> + <i>mesotrione</i> Lexar 3.75F	3 qt	1.31 + 1.31 +	24 hours/ N/A		Apply to soil surface immediately after planting. Check label for rotational restrictions. Do not apply organophosphate or carbamate insecticides within 7 d of Lexar as severe injury can occur.
MOA 15 + 5 + 27	0.17						
Postemergence (POST)	Most annual broadleaf weeds; grasses less than 1"	<i>atrazine</i> 4L 90WDG	1-2 qt 1.1-2.2 lb	1-2	12 hours/ N/A	Apply overtop before corn exceeds 12 in. in height. Addition of COC improves activity on weeds but may result in some foliar burn of the crop. See label for rotational concerns and the amount of crop oil needed. If a PRE treatment was used, do not exceed a total of 2.5 lbs/ai/A per calendar year.	
		MOA 5					
	Most weeds except resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> Roundup Weather Max 5.5SL 4.5 lb ae	22-32 oz	0.75-1.13 lb ae	4 hours/ 30 days	<p>ROUNDUP READY SWEET CORN ONLY.</p> <p>Apply overtop from emergence through 8 visible leaf collars or until sweet corn reaches 30 inches, whichever comes first.</p> <p>A sound management program is required unless one wants to harvest glyphosate-resistant Palmer amaranth instead of sweet corn.</p> <p>After implementing a sound at-plant residual herbicide program make either</p> <p>1) one application of WeatherMax at 32 oz/A mixed with atrazine (atrazine must be applied prior to 12 inch tall corn), or 2) make two applications of Roundup WeatherMax at 22 oz/A if atrazine carryover is a concern. Allow at least 10 days between in-crop applications.</p> <p>Do not exceed 44 fl oz for in-crop applications.</p>	
		MOA 9					

COMMERCIAL VEGETABLES - WEED CONTROL

CORN (Sweet)

CROP/ APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST) (continued)	Annual broadleaf weeds including pigweeds	<i>mesotrione</i> Callisto 4L	3 fl oz	0.094	12 hours/ 45 days	Apply overtop up to the 8-leaf stage of corn to actively growing small weeds (less than 4 in). Addition of NIS at 1 qt/100 gals of spray mix is recommended, however COC may be used at 1 gal/100 gals of spray mix. A crop oil will increase weed control but may increase corn injury. Rotation to peas, beans, cucurbits and most other vegetables is 18 months. Do not apply any organophosphate or carbamate insecticide within 7 d of mesotrione as severe injury can occur.
		MOA 27				
	Residual control of annual grasses and small-seeded broadleaf weeds	<i>pendimethalin</i> Prowl 3.3 EC Prowl H20 3.8 AS	1.8-2.4 pt 2.0 pt	0.75-1.0 0.9	24 hours/ N/A	May be applied from early postemergence until sweet corn is 20 to 24 in tall or has 8 visible leaf collars (V8), whichever is more restrictive. Drop nozzles would be more effective in larger corn. Does not control emerged weeds. Do not apply in reduced tillage programs. Do not make more than 1 application/season. Control may be poor if activation does not occur within 24 hr of application.
		MOA 3				
	Control of small emerged weeds plus excellent residual control including Texas millet	<i>pendimethalin</i> Prowl 3.3EC + <i>atrazine</i> AAtrex 4F	1.8 to 2.4 pt + 1 to 2 qt	0.75 to 1.0 + 1 to 2	24 hours/ N/A	When using Prowl: Apply tank mix from early postemergence until corn is 12 in. tall or has 8 visible leaf collars whichever is more restrictive. Prowl will not control emerged weeds; atrazine rarely controls emerged grasses larger than 1 inch. Activation needed within 24 hr of application for Prowl.
		MOA 3 + 5				
		<i>S-metolachlor</i> Dual II Mag. 7.64EC + <i>atrazine</i> AAtrex 4L 90WDG	1-1.67 pt + 1 to 2 qt 1.1 to 2.2 lb	0.95 to 1.6 + 1 to 2	24 hours/ 30 days	Apply overtop of corn (5 in. or less) before weeds exceed the two-leaf stage. Also available as the commercial product Bicep II Magnum. Check label for rotational restrictions. Do not exceed a total of 2.5 lbs ai atrazine/yr. Do not exceed a total of 2 pt/A of Dual Magnum POST to corn. Atrazine rarely controls grasses larger than 1".
		MOA 15 + 5				
	Cocklebur, common ragweed, jimsonweed, smallflower morningglory	<i>bentazon</i> Basagran 4SL	1-2 pt	0.5-1.0	48 hours/ N/A	Apply when corn has 1 to 5 leaves. Add COC at 1 qt/A.
		MOA 6				
	Limited weed spectrum such as clover, sowthistle, cocklebur, and ragweed	<i>clopyralid</i> Stinger 3EC	0.3-0.67 pt	0.13-0.25	12 hours/ 30 days	Apply to sweet corn used for processing only . Apply after sweet corn emergence up to 18 in. tall with weeds less than 5 leaf and actively growing. Will control most legumes. Do not exceed 0.67 pt/A/year. See label about rotation restrictions.
		MOA 4				

COMMERCIAL VEGETABLES - WEED CONTROL

CORN (Sweet)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST) (continued)	Cocklebur, pigweed, lambsquarters, morningglory, sicklepod, and many other annual broadleaf weeds	2,4-D amine (various brands) 3.8SL	0.5-1 pt	0.24-0.48	48 hours/ 45 days	Injury may occur. Use 0.25 lb ai when corn is 4 to 5 in. tall and weeds are small. Increase rate to 0.5 lb ai as corn reaches 8 in. <u>Use drop nozzles and direct spray toward base of corn.</u> Do not apply overtop. Do not use additives. Reduce rate of 2,4-D if extremely hot and soil is wet. Do not cultivate for at least 10 d after application as corn may be brittle. Do not apply within two weeks of tasseling. Do not make more than 1 POST application/season. Be careful to avoid drift to sensitive crops.
		MOA 4				
	Nutsedge, cocklebur, passionflower (maypop), non-ALS resistant 1" pigweed	halosulfuron Sandea 75DG	0.67 oz	0.032	12 hours/ 30 days	
		MOA 2				
Small pigweeds and the best option for 1-2 inch Texas millet	tembotrione Laudis 3.5SC	3 oz	0.082	12 hours/ N/A		
	MOA 27					
Small pigweeds, nightshade, common ragweed, and crabgrass	topramezone Impact 2.8L	0.75 fl oz	0.016	12 hours/ 45 days	Apply to weeds smaller than 3 inches. The addition of a methylated seed oil or crop oil concentrate which contains at least 14% emulsifiers and 80% oil must be used at a rate of 1.0 to 1.5% v/v. Rotation is 18 months to vegetables, 9 months to cotton, peanut, potato, sorghum, soybean, and 3 months to wheat, barley, oats, and rye. Mixtures with atrazine are far more effective than when applied alone. Limited research, try on few acres only.	
	MOA 27					
Hooded or Directed application ONLY	Contact kill of annual grasses and broadleaf weeds	paraquat FirestormParazone 3SL Gramoxone Inteon 2SL	0.75-1.3 pt 1-2 pt	0.28-0.49	24 hours/ --	Do not apply overtop or corn will likely be killed. Suggest application as hooded spray only. Label allows for a directed spray after corn reaches at least 10 in. in height. Severe damage and/or complete kill is likely if spray contacts corn plants! Add a NIS at a rate of 2 pt/100 gal of spray mix.
		MOA 22				
	Morningglory, spiderwort, and small pigweed	carfentrazone Aim 2.0 EC	0.5-1.0 fl oz	0.008-0.016	12 hours/ N/A	Suggest as directed application only. If leaf contact occurs, significant leaf speckling and necrosis will occur in hot, humid conditions; however, crop will fully recover. Apply to sensitive weeds 3 inches or less; pigweeds less than 1 inch. Add 1 qt NIS/100 gal spray mix. Mixing with atrazine improves control. Do not apply more than 2 oz/A per season including preplant applications. Do not apply after 14 leaf collars.
		MOA 14				

COMMERCIAL VEGETABLES - WEED CONTROL

CUCURBITS

Recommended Herbicide Uses in Specific Cucurbit Crops		Cucurbit				
Herbicide	Application Method*	Cantaloupe (muskmelon)	Cucumber	Pumpkin	Squash	Watermelon
<i>carfentrazone</i> Aim EC	Preplant	X	X	X	X	X
<i>paraquat</i> (numerous)	Preplant	X	X	X	X	X
<i>pyraflufen</i> ET	Preplant	X	X	X	X	X
<i>glyphosate</i> Roundup, others	Preplant	X	X	X	X	X
<i>fomesafen</i> Reflex	Preplant or PRE			X	X	X
<i>bensulide</i> Prefar	PPI or PRE	X	X	X	X	X
<i>ethalfuralin</i> Curbit	PRE	X	X	X	X	X
<i>clomazone</i> Command 3 ME	PRE	X	X		X	X
<i>ethalfuralin</i> + <i>clomazone</i> Strategy	PRE	X	X	X	X	X
<i>halosulfuron</i> Sandea	PRE	X	X	X		X
<i>terbacil</i> Sinbar	PRE					X
<i>halosulfuron</i> Sandea	POST	X	X	X		
<i>S-metolachlor</i> Dual Magnum	POST			X		
<i>clethodim</i> Select, Select Max, TapOut	POST	X	X	X	X	X
<i>sethoxydim</i> Poast	POST	X	X	X	X	X
<i>carfentrazone</i> Aim EC	Row middles only	X	X	X	X	X
<i>flumioxazin</i> Chateau	Row middles only	X	X	X	X	X
<i>glyphosate</i> Roundup, others	Row middles only	X	X	X	X	X
<i>halosulfuron</i> Sandea	Row middles	X	X	X	X	X
<i>paraquat</i> Gramoxone Inteon	Row middles only	X	X	X	X	X
<i>S-metolachlor</i> Dual Magnum	Row middle only	X		X		X
<i>trifluralin</i> Treflan HFP	Row middles only	X	X	X	X	X

*PPI = preplant incorporated; PRE = preemergence; POST = postemergence.

COMMERCIAL VEGETABLES - WEED CONTROL

CUCURBITS (Cantaloupe, Cucumber, Pumpkin, Squash, Watermelon)

CROP/ APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Suppression or control of most annual grasses and broadleaf weeds, full rate required for nutsedge control	<i>metam sodium</i> Vapam HL 42%	45-75 gal	19-31.5	5 days/ N/A	<p>Cantaloupe, Cucumber, Squash, Watermelon, and Pumpkin. Rates are dependent on soil type and weeds present. Apply when soil moisture is near field capacity (60 to 80%). Apply through soil injection preferably shanking the product to a depth of 4 inches deep using knives spaced 4 inches apart; follow immediately with a bed shaper, roller, or other method to smooth and compact the soil surface. If irrigation is available, irrigate with at least 0.25" and/or cover with tarp immediately. May apply through drip irrigation prior to planting a second, third, or fourth crop on mulch. Plant back interval is often 14-21 d and can be 30 d in some environments. May also apply preplant through center pivot but must follow serious buffer restrictions noted on label.</p> <p><u>New labels require buffer restrictions, additional worker protection safety procedures, and a fumigant management plan; study this label closely which can be found at www.cdms.net.</u></p>
		MOA Fumigant				
	Contact kill of all green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL	1.3-2.7 pt 2.0-4.0 pt	0.49-1.0	24 hours/ N/A	<p>Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. Apply to emerged weeds but before crop emergence or transplanting. Add 1 qt NIS or 1 gal COC/100 gal spray mix. If applying over plastic, must wash off with 0.5 in of rain or irrigation prior to planting.</p>
		MOA 22				
	Most emerged weeds except for resistant pigweed, primrose, and spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	<p>Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. In bareground, apply at least 3 d prior to planting. In plastic, apply at least 7 d prior to planting and mulch must be washed off with 0.5 inch rain/irrigation prior to planting. Adjuvant needs depend on brand used.</p>
MOA 9						
Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.03	12 hours/ N/A	<p>Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. Transplants only. Apply prior to planting to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Likely need to mix with glyphosate. If applied over plastic mulch, a single 0.5 in. irrigation/rain event plus a 7 d waiting period must occur before transplanting.</p>	
	MOA 14					
Morningglory and small pigweed	<i>pyraflufen ethyl</i> ET 0.208L	1.0-2.0 fl oz	0.0016-0.0032	12 hours/ N/A	<p>Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. Bareground. Wait 1 day following preplant bumdown application before planting.</p> <p>Mulch Production. May apply over mulch; however, a single 0.5 inch irrigation/rain event plus a 7 d waiting period must occur before transplanting. Apply ET with a crop oil concentrate at 1% v/v to sensitive weeds that are less than 3 inches.</p>	
	MOA 14					

COMMERCIAL VEGETABLES - WEED CONTROL

CUCURBITS (Cantaloupe, Cucumber, Pumpkin, Squash, Watermelon)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant (continued)	Cantaloupe-Cotton Intercropping	<i>trifluralin</i> Treflan 4EC	1-1.5 pt	0.5-0.75	12 hours/ 30 days	After laying mulch without holes and developing a bed facilitating herbicide wash off; apply in combination with Roundup or Gramoxone and then irrigate with at least 0.5 inch between 12 to 24 hr after application. Irrigation will activate trifluralin and remove herbicides from mulch. If using Roundup apply at least 3 d prior to transplant; for Gramoxone at least 1 d prior to transplant. Maximum use rate for season is 1.5 to 2 pt/A; depending on soil type, see label. This is a 2(ee) label only for GA.
		MOA 3				
Preplant incorporate (PPI) or Preemergence (PRE)	Annual grasses and small-seeded broadleaf weeds such as pigweeds	<i>bensulide</i> Prefar 4E	5-6 qt	5-6	12 hours/ N/A	Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. Apply preplant and soil incorporate 1 in. deep before planting, or apply preemergence and follow with irrigation within 24 hr. Check replant restrictions for small grains and other crops on label.
		MOA 8				
Preplant and/or Preemergence (PRE)	Annual grasses and small-seeded broadleaf weeds such as pigweeds	<i>ethalfuralin</i> Curbit 3EC	1-1.5 pt	0.38-0.56	24 hours/ N/A	Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. Apply immediately after seeding but before crop and weeds emerge. Do not apply prior to seeding and do not incorporate. Do not use <u>under mulch</u> . If rainfall does not occur within 2 d of application, irrigate as needed. Labels do not allow application over transplants; only in row middles of transplanted crop. If applying in row middles can use higher rate, see label. Avoid applications when periods of cool, moist conditions exist prior to emergence to prevent crop injury. Injury can also be observed if planted too shallow. Suggested use rates are lower than recommended due to injury potential. See label about rotation and buffer restrictions for clomazone.
		MOA 3				
		<i>ethalfuralin + clomazone</i> Strategy 2.1L	2-3 pt	0.4 to 0.6 + 0.13 to 0.18	24 hours/ N/A	
	MOA 3 + 13					
Suppression of annual grasses and some broadleaf weeds; weak on pigweed and morningglory		<i>clomazone</i> Command 3ME	(see remarks)	0.15-0.4875 (see remarks)	12 hours/ 45 days	Cantaloupe, Cucumber, Squash and Watermelon only. <u>USE RATES PER CROP</u> Cantaloupe: 0.4-0.67 pt/A Cucumber: 0.4-1.0 pt/A Squash: 0.67-1.3 pt/A Watermelon: 0.4-0.67 pt/A Apply immediately after seeding or just prior to transplanting. Roots of transplants must be below the chemical barriers when planting. See label for buffer and rotation restrictions. Command at this use rate should be only a component of a weed management system.
		MOA 13				

COMMERCIAL VEGETABLES - WEED CONTROL

CUCURBITS (Cantaloupe, Cucumber, Pumpkin, Squash, Watermelon)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant and/or Preemergence (PRE) (continued)	Pigweeds, wild radish, bristly starbur, and suppression of yellow nutsedge Evaluate rotation restrictions on label before use	<i>fomesafen</i> Reflex 2EC	Watermelon: 12 oz	0.19	24 hours/ 35 days	<p>Watermelon and Squash Only. A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use.</p> <p>Mulch transplants or seeds: May apply under mulch as long as plastic laying process does not disturb treated soil; thus do not apply prior to laying drip or forming bed. May apply over mulch as long as the mulch is washed with 0.5 inch rainfall/irrigation in a single event prior to punching holes and planting; bed formation must allow herbicide to wash off the mulch and not concentrate in low areas on the mulch.</p> <p>Bareground transplant: prepare land for planting; apply Reflex; lightly irrigate to activate herbicide and move it into soil; and then prepare plant holes and plant.</p> <p>Bareground seeded: apply within 1 d of planting; <u>lightly</u> irrigate after application but at least 36 hr prior to emergence.</p> <p>Row middle: <u>Must apply prior to crop emergence or transplanting.</u> May use up to 16 oz/A in watermelon and up to 12 oz/A in squash. Squash types include straight neck yellow, crooked neck yellow and zucchini types only. More research is needed on other squash types.</p>
			Squash: 8 oz	0.13		
		Pumpkin: 8-10 oz	0.13-0.16	<p>Pumpkin Only. A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use.</p> <p>Bareground transplants: prepare land for planting; apply Reflex; lightly irrigate to activate herbicide and move it into soil; and then prepare plant holes and plant.</p> <p>Bareground seeded: apply within 1 d of planting; <u>lightly</u> irrigate after application but at least 36 hr prior to emergence.</p> <p>Row middle: <u>Must apply prior to crop emergence or transplanting;</u> may use 12 oz/A.</p>		
Nutsedge suppression, non-ALS resistant pigweed, wild radish, and ragweed control	<i>halosulfuron</i> Sanda 75DG	0.5-0.75 oz	0.024-0.036	12 hours/ 30 days	<p>Cantaloupe, Cucumber, Pumpkin and Watermelon only. Apply 7 d prior to transplanting or seeding in plasticulture. Application may be made to preformed beds prior to laying plastic, do not disturb bed when laying plastic. In bareground production, apply after seeding but prior to soil cracking; for transplants, wait 7 d after application before transplanting. Pumpkin is the most sensitive and injury is almost certain at these rates on sandy soils; for other crops, stunting occasionally occurs but should be short lived with no noted yield effects in favorable growing conditions.</p> <p>Review rotational restrictions. Do not exceed 2 oz per crop cycle for cantaloupe and cucumber and 1 oz per crop cycle for pumpkin and watermelon. Do not apply more than 2 oz/A/crop cycle and year (includes POST and hooded applications).</p>	
		MOA 14				
Broadleaf weeds including morningglory and pigweed	<i>terbacil</i> Sinbar 80WP	2-4 oz	0.1-0.2	12 hours/ 70 days	<p>Watermelon only. Apply prior to transplanting or immediately after seeding. DO NOT apply ovetop of the crop. May be applied under plastic mulch (avoid soil movement while laying plastic). May be applied over mulch without holes but must be washed off of mulch with at least 0.5 inch rain/irrigation in a single event prior to punching holes and transplanting.</p> <p>Should be only part of a weed management program; <u>mixtures with Reflex are usually very effective.</u></p>	
		MOA 5				

COMMERCIAL VEGETABLES - WEED CONTROL

CUCURBITS (Cantaloupe, Cucumber, Pumpkin, Squash, Watermelon)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST)	Nutsedge, non-ALS resistant pigweed, ragweed, cocklebur, and wild radish	<i>halosulfuron</i> Sanda 75DG	0.5-0.67 oz	0.024-0.032	12 hours/ Cucumber & Pumpkin = 30 days Cantaloupe = 57 days	Cantaloupe, Cucumber, and Pumpkin only. Apply after seed crop has reached the 3rd true leaf for cantaloupe and cucumber and has reached the 4th true leaf for pumpkin but before flowering. Apply to transplants no sooner than 14 d after transplanting, may apply ovetop of plastic mulch. Add NIS at 1 qt./100 gal of spray solution. Plant stunting, especially with pumpkin , may be observed under cool or harsh growing conditions; a delay in crop maturity by 1 wk has been noted. Review rotational restrictions. Do not exceed 2 oz per crop cycle for cantaloupe and cucumber and 1 oz per crop cycle for pumpkin. (includes PRE and hooded applications).
		MOA 2				
	Residual control of pigweed, purslane, spiderwort, and grasses	<i>S-metolachlor</i> Dual Magnum 7.62EC	8-12 oz	0.47-0.7	24 hours/ 60 days	Pumpkin Only. A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use. New label; limit acres treated. Background seeded: apply topically or directed once pumpkin reach 4 inch. Background transplant: after planting, immediately irrigate to seal soil around root ball and then apply topically or directed 10 to 14 days later. Mulch seeded: apply topically or directed once pumpkin reach 3 inch. Mulch transplant: apply topically or directed 7 to 10 days after transplant. Row middles: rate can be increased to 1.33 pt/A when applied between rows. Avoid applications to wet plants including dew. Apply Dual only in water.
Actively growing annual and perennial grasses.	<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC	6-8 fl oz 9-16 fl oz 9-16 fl oz	0.09-0.12 0.07-0.12 0.07-0.12	24 hours/ 14 days	Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. A section 24(c) state local need label allows an application of SelectMax without the addition of an adjuvant; applying Select Max at 9 oz/A when grasses are less than 3 inches is the best option for control without injury. The addition of NIS at 1 qt/100 gal spray mix is recommended for large grasses and goosegrass for SelectMax. For Select, a crop oil at 1 gal/100 gal spray mix is required for control. Controls annual bluegrass. Do not mix with other pesticides. Application of a broadleaf herbicide within 5 d of clethodim may result in reduced grass control.	
		MOA 1				
	<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.3	12 hours/ Cantaloupe = 3 days Others = 14 days	Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. Add 1 qt of COC/A. Adding crop oil may increase crop injury at high temps. Do not apply more than 3 pt/A/season sethoxydim. Do not mix with other pesticides.	
	MOA 1					

COMMERCIAL VEGETABLES - WEED CONTROL

CUCURBITS (Cantaloupe, Cucumber, Pumpkin, Squash, Watermelon)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
ROW MIDDLES ONLY Shielded spray	Residual control of pigweed, purslane, spiderwort, and grasses	<i>S-metolachlor</i> Dual Magnum 7.62EC	12 oz	0.7	24 hours/ 60 days	<p>Cantaloupe, Pumpkin, Watermelon Only. A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use.</p> <p>Bareground row middles: apply between crop rows; avoid contact with the crop or with soil within 6 inches of the crop root ball.</p> <p>Mulch row middles: do not allow spray to contact crop or top of mulched bed; avoid contact of soil within 6 inch of the crop root ball.</p>
		MOA 15				
	Residual control of annual grasses and small-seeded broadleaf weeds	<i>trifluralin</i> Treflan 4EC Trifluralin 4L	1-1.5 pt	0.5-0.75	24 hours/ 30 days; except Watermelon = 60 days	<p>Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. Apply as a directed spray in row middles when plants have reached the 3 to 4 true leaf stage of growth. Avoid direct crop contact and incorporate immediately. Incorporation equipment may be set to move treated soil around the plant base. Maximum use rate for season is 1.5 to 2 pt; depending on soil type, see label.</p>
		MOA 3				
ROW MIDDLES ONLY Hooded spray	Contact kill of emerged annual weeds	<i>paraquat</i> Gramoxone Inteon 2SL	1.95 pt	0.5	24 hours/ --	<p>Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. Apply when weeds are succulent and less than 4 in. tall. Use precision hooded application equipment adjusted to prevent spray contact with crop plants. Add a NIS at a rate of 2 pt/100 gal of spray mix. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause drift. Do not make more than 3 applications/yr.</p>
		MOA 22				
	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	<p>Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. Labeled as a hooded spray or wiper application in row middle; UGA does not recommend hooded sprays once the crop is planted. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant depends on brand used.</p>
		MOA 9				
Annual broadleaf weeds including morningglory, spiderwort, and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	<p>Cantaloupe, Cucumber, Pumpkin, Squash, and Watermelon. Apply as a hooded spray in row middles before any fruit is present. Do not allow herbicide to contact the crop. Apply to weeds less than 3 inch: pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Speckling of crop leaves should be expected from drift.</p>	
	MOA 14					
Nutsedge, non- ALS resistant 1" pigweed, wild radish, ragweed	<i>halosulfuron</i> Sanda 75DG	0.5-1.0 oz	0.024-0.048	12 hours/ See Remarks	<p>Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon. Apply between crop rows avoiding spray contact with crop. Add a NIS at 1 qt/100 gals of spray. Review rotational restrictions. Do not exceed 2 oz per crop cycle for cantaloupe and cucumber and 1 oz per crop cycle for pumpkin, squash, and watermelon.</p> <p>Cucumber, Pumpkin & Squash PHI = 30 days Cantaloupe & Watermelon PHI = 57 days</p>	
	MOA 2					

COMMERCIAL VEGETABLES - WEED CONTROL

CUCURBITS (Cantaloupe, Cucumber, Pumpkin, Squash, Watermelon)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
ROW MIDDLES ONLY Hooded spray (continued)	Excellent residual for pigweeds, purslane, beggarweed, and other broadleaf weeds	<i>flumioxazin</i> Chateau 51WDG MOA 14	up to 4 oz	up to 0.127	12 hours/ N/A	Cantaloupe, Cucumber, Pumpkin, Squash, and Watermelon. For row middle applications in RAISED BED (at least 24 in. wide) plasticulture using drip. Third Party Indemnification Label Available ONLY Through The Georgia Fruit and Vegetable Growers Association. Growers must obtain label to receive the appropriate application procedures (and to be legal); failure to follow these procedures will likely result in crop death. 1. Do allow spray to come into contact with mulch. 2. Must apply before transplanting. 3. Hooded sprayer. 4. Rainfall required after application but before transplanting.

EGGPLANT

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Suppression or control of most annual grasses and broadleaf weeds, full rate required for nutsedge control	<i>metam sodium</i> Vapam HL 42%	45-75 gal	19-31.5	5 days/ N/A	Rates are dependent on soil type and weeds present. Apply when soil moisture is near field capacity (60 to 80%). Apply through soil injection preferably shanking the product to a depth of 4 inches deep using knives spaced 4 inches apart; follow immediately with a bed shaper, roller, or other method to smooth and compact the soil surface. If irrigation is available, irrigate with at least 0.25" and/or cover with tarp immediately. May apply through drip irrigation prior to planting a second, third, or fourth crop on mulch. Plant back interval is often 14-21 d and can be 30 d in some environments. Chloropicrin (150 lb/A broadcast) will also be needed to obtain nutsedge control when laying first crop mulch. Visit www.gaweed.com for the latest circular on fumigant systems. <u>New labels require buffer restrictions, additional worker protection safety procedures, and a fumigant management plan; study this label closely.</u>
		MOA Fumigant				
	Contact kill of all green foliage; stale bed application	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL MOA 22	1.3-2.7 pt 2.0-4.0 pt	0.49-1.0	24 hours/ N/A	Apply to emerged weeds but before crop emergence or transplanting. Add 1 qt NIS or 1 gal COC/100 gal spray mix. If applying over plastic, must wash off with 0.5 inch of rain or irrigation prior to planting.

COMMERCIAL VEGETABLES - WEED CONTROL

EGGPLANT

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant (continued)	Most emerged weeds except for resistant pigweed, stale seedbed application	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	In bareground, apply at least 3 d prior to planting. In plastic, apply at least 7 d prior to planting and mulch must be washed off with 0.5 inch rain/irrigation prior to planting. Adjuvant needs depend on brand used.
		MOA 9				
	Morningglory, spiderwort and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.03	12 hours/ N/A	
Morningglory and very small pigweed		<i>pyraflufen ethyl</i> ET 0.208L	1-2 fl oz	0.0016-0.0032	12 hours/ N/A	<p>Bareground: Wait 1 day following preplant burndown application before planting.</p> <p>Mulch Production: May apply over mulch; however, a single 0.5 inch irrigation/rain event plus a 7 d waiting period must occur before transplanting.</p> <p>Apply ET with a crop oil concentrate at 1% v/v to sensitive weeds less than 3 inches.</p>
		MOA 14				
Preplant, Preplant incorporated (PPI) or Preemergence (PRE)	Annual grasses and some broadleaf weeds such as ragweed, smartweed, galinsoga, and suppression of pigweeds.	<i>napropamide</i> Devrinol 50DF Devrinol 2-XT	2-4 lb 2-4 qt	1-2	24 hours/ N/A	<p>Transplants for bareground. Label notes to apply preplant and incorporate into the soil 1 to 2 in. before transplanting. Use the lower rate on coarse soils.</p> <p>Transplants in Plasticulture. Apply to the soil surface of preformed beds immediately prior to laying plastic. Ensure the plastic laying process does not incorporate or disturb the treated bed. Soil must be moist for activity. May also be used as a row middle application, see label.</p> <p>Plantback 60 d to leafy vegetables and 180 d for grains.</p>
		MOA 15				
	Annual grasses and small-seeded broadleaf weeds	<i>trifluralin</i> Treflan 4EC Trifluralin 4L	≤ 1 pt ≤ 1 pt	≤ 0.5	12 hours/ N/A	
Annual grasses and small-seeded broadleaf weeds		<i>bensulide</i> Prefar 4E	5-6 qt	5-6	12 hours/ N/A	Apply PPI (1 in incorporation) or PRE after planting. With PRE application, irrigate immediately after application. See label for more directions and rotational restrictions.
		MOA 8				

COMMERCIAL VEGETABLES - WEED CONTROL

EGGPLANT

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST)	Residual annual grass and small-seeded broadleaf weed control	<i>DCPA</i> Dacthal W-75 6F	6-8 lb 6-8 pt	4.5-6	12 hours/ N/A	Can be applied over-the-top of transplants 4 to 6 weeks after transplanting. Can also be applied after direct seeded plants that are 4 to 6 in tall. Does not control emerged weeds.
		MOA 3				
	Actively growing annual and perennial grasses	<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC	6-8 fl oz 9-16 fl oz 9-16 fl oz	0.09-0.12 0.07-0.12 0.07-0.12	24 hours/ 20 days	A section 24(c) state local need label allows an application of SelectMax without the addition of an adjuvant; applying Select Max at 9 oz/A when grasses are less than 3 inches is the best option for control without injury. The addition of NIS at 1 qt/100 gal spray mix is recommended for large grasses and goosegrass with SelectMax. For Select, a crop oil at 1 gal/100 gal spray mix is required for control. Controls annual bluegrass. Do not mix with other pesticides. Application of a broadleaf herbicide within 5 d of clethodim may result in reduced grass control.
		<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.3	12 hours/ 20 days	Add 1 qt of COC/A. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 4.5 pt/A/season. Do not mix with other pesticides.
ROW MIDDLES ONLY Shielded spray	Nutsedge, wild radish, non-ALS resistant pigweed, ragweed	<i>halosulfuron</i> Sanda 75DG	0.5-1.0 oz	0.024-0.048	12 hours/ 30 days	Apply to row middles as a preemergence or postemergence spray. Do not allow spray to contact the crop. In plasticulture, do not allow spray to contact plastic. Add a NIS at 1 qt/100 gal spray solution. Review rotational concerns.
ROW MIDDLES ONLY Hooded spray	Contact kill of all green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL	1.3 pt 2.0 pt	0.5	24 hours/ --	Apply when weeds are succulent and weed growth is less than 4 in. Use hooded application equipment adjusted to prevent spray contact with crop plants. Add a NIS at a rate 2 pt/100 gal of spray mix. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause drift. Do not make more than 3 applications/season.
	Most emerged weeds excluding resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Labeled as a hooded spray or wiper application in row middle; UGA does not recommend hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant depends on brand used.
	Excellent residual control for pigweeds, purslane, beggarweed, and other broadleaf weeds	<i>flumioxazin</i> Chateau 51WDG	up to 4 oz	up to 0.127	12 hours/ N/A	For row middle applications in RAISED BED (at least 24 in. wide) plasticulture. Third Party Indemnification Label available ONLY through the Georgia Fruit and Vegetable Growers Association. Growers must obtain label to receive the appropriate application procedures (and to be legal); failure to follow these procedures will likely result in crop death. 1. Do allow spray to come into contact with mulch. 2. Must apply before transplanting. 3. Hooded sprayer. 4. Rainfall required after application but before transplanting.
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0 EC	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 inch: pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix.

COMMERCIAL VEGETABLES - WEED CONTROL

GARLIC

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Contact kill of all green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL MOA 22	1.7-2.7 pt 2.5-4.0 pt	0.64-1.0	24 hours/ N/A	Apply to emerged weeds but before crop emergence or transplanting. Add 1 qt NIS or 1 gal COC/100 gal spray mix.
	Most emerged weeds except for resistant pigweed, primrose, and spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds at least 3 d before seeding or transplanting. The need for an adjuvant depends on brand used.
Preplant incorporated (PPI) or Preemergence (PRE)	Annual grasses and small-seeded broadleaf weeds	<i>bensulide</i> Prefar 4E MOA 8	5-6 qt	5-6	12 hours/ N/A	Apply PPI to a depth of 1 inch or apply PRE after planting. With PRE applications, irrigate immediately. Poor growing conditions may increase the potential for reduced stands and vigor.
Preemergence (PRE)	Annual grasses and small-seedbed broadleaf weeds	<i>pendimethalin</i> Prowl 3.3EC Prowl H20 3.8AS MOA 3	1.8-2.4 pt 1.5-2.0 pt	0.75-1.0 0.72-0.95	24 hours/ 45 days	Apply PRE after planting but before weed and crop emergence. Can be applied sequentially by applying PRE followed by a POST application, see label. Does not control emerged weeds. Use lower rates on coarse soils.
Postemergence (POST)	Residual control of annual grasses and small-seeded broadleaf weeds	<i>pendimethalin</i> Prowl 3.3EC Pendimax 3.3EC Prowl H20 3.8AS MOA 3	1.8-2.4 pt 1.2-2.4 pt 1.5-2.0 pt	0.75-1.0 0.5-1.0 0.72-0.95	24 hours/ 45 days	Apply to garlic in the 1- to 5-leaf stage but before weed emergence. Can be applied sequentially by applying a PRE followed by a POST application, see label. Use lower rates on coarse soils.
	Excellent residual option for henbit, purslane, pigweed, primrose, smartweed, and many others; controls small emerged weeds as well	<i>oxyfluorfen</i> Goal 2XL 2EC Galigan 2E Goaltender 4F Galigan H20 4F MOA 14	0.5-2 pt 0.5-2 pt 0.25-1 pt 0.25-1 pt	0.125-0.5	24 hours/ 60 days	Seeded dry bulb only. Apply 8 fl oz of Goal 2 XL or Galigan 2 E (4 oz for Goaltender) to seeded garlic that has at least two true leaves. Multiple applications may be made but do not exceed total of 2 pt/A (1 pt/A for Goaltender). Transplant dry bulb only. Suggest making a single application using up to 2.0 pt/A of Goal 2XL or Galigan (1.0 pt/A of Goaltender) within 2 d of transplanting but after an irrigation to seal the soil around the root ball. Do not exceed 2 pt/A of Goal 2XL or Galigan (1 pt/A of Goaltender) per crop season. A program with Prowl has shown excellent season long control.
	Actively growing annual and perennial grasses.	<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC MOA 1	6-16 fl oz 9-32 fl oz 9-32 fl oz	0.09-0.25 0.07-0.25 0.07-0.25	24 hours/ 45 days	For Select add 1 gal COC/100 gal spray mix. Adding crop oil may increase the likelihood of crop injury at high temperatures. For SelectMax add 1qt NIS per 100 gal spray mix. Effective on annual bluegrass. Do not mix with other pesticides. Application of a broadleaf herbicide within 5 d of clethodim may result in reduced grass control.

COMMERCIAL VEGETABLES - WEED CONTROL

GARLIC

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST) (continued)	Actively growing annual and perennial grasses.	<i>fluazipop-P-butyl</i> Fusilade DX 2 EC	6-16 fl oz	0.1-0.25	12 hours/ 45 days	Add 1 gal COC or 1 qt NIS/100 gal spray mix. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 48 oz/A/season.
		MOA 1				
		<i>sethoxydim</i> Poast 1.53 EC	1-1.5 pt	0.19-0.3	12 hours/ 30 days	
ROW MIDDLES ONLY Hooded spray	Most emerged weeds excluding resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA does not recommend hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant depends on brand used.
		MOA 9				
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0 EC	0.8-2 fl oz	0.013-0.031	12 hours/ 0 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Expect some speckling from drift.
		MOA 14				

GREENS (Collard, Kale, Mustard, Turnip)

Recommended Herbicide Uses in Specific Greens		Crop			
Herbicide	Application Method*	Collard	Kale	Mustard	Turnip
<i>paraquat</i> (numerous)	Preplant	X			X
<i>glyphosate</i> Roundup, others	Preplant	X	X	X	X
<i>bensulide</i> Prefar	PPI or PRE	X	X	X	
<i>trifluralin</i> Treflan HFP, others	PPI	X	X	X	X
<i>DCPA</i> Dacthal	PRE or PPI	X	X	X	X
<i>clethodim</i> Select, SelectMax, TapOut	POST	X	X	X	X
<i>clopyralid</i> Stinger	POST	X	X	X	X
<i>S-metolachlor</i> Dual Magnum	POST	X	X		
<i>sethoxydim</i> Poast	POST	X	X	X	
<i>carfentrazone</i> Aim EC	Row middles only	X	X	X	X
<i>glyphosate</i> Roundup, others	Row middles only	X	X	X	X

*PPI = preplant incorporated; PRE = preemergence; POST = postemergence.

COMMERCIAL VEGETABLES - WEED CONTROL

GREENS (Collard, Kale, Mustard, Turnip)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Contact kill of all green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL MOA 22	1.3-2.7 pt 2.0-4.0 pt	0.49-1.0	24 hours/ N/A	Collard and turnip only. Apply to emerged weeds but before crop emergence or transplanting. Add 1 qt NIS or 1 gal COC/100 gal spray mix. If applying over plastic, must wash off with 0.5 inch rain/irrigation prior to planting.
	Most emerged weeds except resistant pigweed, primrose, and spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	In bareground, apply at least 3 d prior to planting. In plastic, apply at least 7 d prior to planting and mulch must be washed off with 0.5 inch rain/irrigation prior to planting. Adjuvant needs depend on brand used.
Preplant incorporated (PPI)	Annual grasses and small-seeded broadleaf weeds	<i>trifluralin</i> Treflan 4EC Trifluralin 4L MOA 3	12-16 oz	0.375-0.5	24 hours/ N/A	Apply and incorporate 2-3 in deep before planting. <u>Rates less than 1 pt are needed on sandy soils with low organic matter or when conditions are cold and wet.</u> Incorporate within 8 hr. of application. Do not use on turnip roots that are to be consumed.
Preplant incorporated (PPI) or Preemergence (PRE)	Annual grasses and small-seeded broadleaf weeds	<i>bensulide</i> Prefar 4E MOA 8	5-6 qt	5-6	12 hours/ N/A	Not labeled for turnip. Apply PPI to a 1 in. depth or apply PRE after planting. With PRE application, irrigate immediately. Also labeled for, but not limited to, rape greens, mustard spinach, arugula, cress, endive, parsley, and radicchio. Review rotational restrictions.
Postemergence (POST)	A few broadleaf weeds including clover, sowthistle, cocklebur, jimsonweed, ragweed; will not control radish	<i>clopyralid</i> Stinger 3EC MOA 4	0.3-0.5 pt	0.11-0.19	12 hours/ 30 days Except Turnip Tops = 15 days	Also labeled on mizuna, mustard spinach, and rape. Apply to crop when weeds are small and actively growing. Will control most legumes. One application/yr. <u>See label for rotational issues. Minor mustard green injury has been observed in some research trials.</u>
		<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC MOA 1	6-8 fl oz 9-16 fl oz 9-16 fl oz	0.09-0.13 0.07-0.12 0.07-0.12	24 hours/ 14 days Expect Turnip Root = 30 days	A section 24(c) state local need label allows an application of SelectMax without the addition of an adjuvant; for lowest injury potential apply Select Max at 9 oz/A when grasses are less than 3 inch. The addition of NIS at 1 qt/100 gal spray mix is recommended for large grasses and goosegrass. For Select, a crop oil at 1 gal/100 gal spray mix is required for control. Controls annual bluegrass. Do not mix with other pesticides. Application of a broadleaf herbicide within 5 d of clethodim may result in reduced grass control.
	<i>sethoxydim</i> Poast 1.53EC MOA 1	1-1.5 pt	0.19-0.3	12 hours/ 30 days Except Mustard = 14 days	Not labeled on turnip. Add 1 qt of COC/A. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 3 pt/A/season. Do not mix with other pesticides.	

COMMERCIAL VEGETABLES - WEED CONTROL

GREENS (Collard, Kale, Mustard, Turnip)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Postemergence (POST) (continued)	Residual control of pigweed, purslane, spiderwort, and grasses Will not control emerged weeds	<i>S-metolachlor</i> Dual Magnum 7.62EC MOA 15	10-12 oz	0.6-0.7	24 hours/ 30 days	COLLARDS AND KALE ONLY. A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use. TRANSPLANTS: After transplanting into bare soil, irrigate to seal soil around root ball. About 10 d after sealing soil, apply Dual Magnum overtop. If applying in mulched systems, apply 10 d after transplanting. SEEDED: Apply overtop after crop reaches 3 inches. ROW MIDDLE: May apply 1.25 pt/A in row middles as a banded application.
ROW MIDDLE ONLY Hooded spray	Most emerged weeds except for resistant pigweed, spiderwort, and primrose Morningglory, spiderwort, and small pigweed	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9 <i>carfentrazone</i> Aim EC 2.0EC MOA 14	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days 12 hours/ 0 days	Labeled as a hooded spray or wiper application in row middle; UGA does not recommended hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant depends on brand used. Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 inch: pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Expect speckling from drift.

LETTUCE

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Suppression or control of most annual grasses and broadleaf weeds, full rate required for nutsedge control Contact kill of all green foliage	<i>metam sodium</i> Vapam HL 42% MOA Fumigant <i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL MOA 22	45-75 gal	19-31.5	5 days/ N/A 24 hours/ N/A	Rates are dependent on soil type and weeds present. Apply when soil moisture is near field capacity (60 to 80%). Apply through soil injection preferably shanking the product to a depth of 4 inches deep using knives spaced 4 inches apart; follow immediately with a bed shaper, roller, or other method to smooth and compact the soil surface. If irrigation is available, irrigate with at least 0.25" and/or cover with tarp immediately. May apply through drip irrigation prior to planting a second, third, or fourth crop on mulch. Plant back interval is often 14-21 d and can be 30 d in some environments. May also apply preplant through center pivot but must follow serious buffer restrictions noted on label. New labels require buffer restrictions, additional worker protection safety procedures, and a fumigant management plan; study this label closely. Apply to emerged weeds before crop emergence or transplanting. Add 1 qt NIS or 1 gal COC/100 gal spray mix. If applying over plastic, must wash off with 0.5 inch rain/irrigation prior to planting.

COMMERCIAL VEGETABLES - WEED CONTROL

LETTUCE

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant (continued)	Most emerged weeds except for resistant pigweeds, primrose, and spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	In bareground, apply at least 3 d prior to planting. In plastic, apply at least 7 d prior to planting and mulch must be washed off with 0.5 inch rain/irrigation prior to planting. Adjuvant needs depend on brand used.
Preplant incorporated (PPI) or Preemergence (PRE)	Annual grasses and small-seeded broadleaf weeds	<i>bensulide</i> Prefar 4E MOA 8	5-6 qt	5-6	12 hours/ N/A	Apply PPI to a depth of 1 in. or apply PRE after planting. With PRE application, irrigate immediately. See label for more directions and rotational restrictions.
		<i>benefin</i> Balan 60DF MOA 15	2-2.5 lb	1.2-1.5	12 hours/ N/A	Apply preplant and incorporate 2 to 3 in. deep before seeding or transplanting. Use lower rate on coarse soils.
	Most annual grasses and broadleaf weeds	<i>pronamide</i> Kerb 50W Kerb 3.3SC MOA 3	2-4 lb 2.5-5 pt	1-2	24 hours/ N/A	Head lettuce only. Make one preplant or PRE application. Use less than 3 lb of 50 W or 3.75 pt of 3.3 SC on val temp, grande verde and prima verde varieties of crisp head lettuce, or on endive, escarole, or radicchio greens. Consult label for rotational restrictions.
Postemergence (POST)	Most annual grasses and broadleaf weeds	<i>pronamide</i> Kerb 50W Kerb 3.3SC MOA 3	2-4 lb 2.5-5 pt	1-2	24 hours/ N/A	Head lettuce only. Apply before weed germination if possible, no later than weeds in the two-leaf stage. Use lower rates on coarse soil textures and use less than 3 lb on val temp, grande verde and prima verde varieties of crisp head lettuce, or on endive, escarole, or radicchio greens. Make only one application/crop. Consult label for rotational restrictions which are significant.
		<i>sethoxydim</i> Poast 1.53EC MOA 1	1-1.5 pt	0.19-0.3	12 hours/ See Remarks	Add 1 qt of COC/A. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 3 pt/A/season. Do not mix with other pesticides Head Lettuce PHI = 30 days; Leaf Lettuce PHI= 15 days
	Actively growing annual and perennial grasses	<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC MOA 1	6-8 fl oz 9-16 fl oz 9-16 fl oz	0.09-0.12 0.07-0.12 0.07-0.12	24 hours/ 14 days	Leaf lettuce only. For Select, add 1 gal COC/100 gal spray mix. Adding crop oil may increase crop injury at high temperatures. For SelectMax, add 1qt non-ionic surfactant/100 gal spray mix. Do not mix with other pesticides. Application of a broadleaf herbicide within 5 d of clethodim may result in reduced grass control.
ROW MIDDLES ONLY Hooded spray	Most emerged weeds except for resistant pigweed, primrose, or spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA suggests against hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant varies by brand used.
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC MOA 14	0.8-2 fl oz	0.013-0.031	12 hours/ 0 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 inch: pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Expect leaf speckling from drift.

COMMERCIAL VEGETABLES - WEED CONTROL

OKRA

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds but before crop emergence. The need for an adjuvant depends on brand used.
		MOA 9				
	Contact kill of green foliage.	<i>paraquat</i> Gramoxone Inteon 2SL	2-4 pts	0.5-1.0	24 hours/ N/A	Apply to emerged weeds before planting or up to 1 d after planting. Add 1 qt NIS or 1 gal COC per 100 gal of spray mix.
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.03	12 hours/ N/A	Transplants ONLY. Apply prior to planting to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Likely need to mix with glyphosate.
		MOA 14				
Preplant incorporated (PPI)	Annual grasses and small-seeded broadleaf weeds	<i>trifluralin</i> Treflan 4EC Trifluralin 4L	1-1.5 pt	0.5-0.75	12 hours/ N/A	Apply and soil incorporate 2 to 3 in. deep before planting. Incorporate within 8 hr of application. <u>Use lower rates on coarse soils.</u>
		MOA 3				
Preemergence (PRE)	Small seeded broadleaves and annual grasses	<i>prometryn</i> Caparol 4L	1.5-2.0 pt	0.75-1.0	12 hours/ N/A	Apply after planting but before emergence. Less than 10% stunting is expected at 2 pt/A. Apply a max of 1.5 pt/A if a directed Caparol application will be made as well.
		MOA 5				
Postemergence (POST)	Actively growing annual and perennial grasses	<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.3	12 hours/ 14 days	Add 1 qt of COC/A. Adding crop oil may increase the likelihood of crop injury at high temperatures. Do not apply more than 5 pt/A/season. Do not mix with any other pesticides.
		MOA 1				
POST directed	Small seeded broadleaves and annual grasses	<i>prometryn</i> Caparol 4L	1.5 pt	0.75	12 hours/ 14 days	Direct spray to base of Okra with 7-9 leaves; expect up to 10% chlorosis. There is no mention of adjuvant on the label and an adjuvant would likely increase injury significantly.
		MOA 5				
ROW MIDDLES ONLY (Hooded spray)	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles. To avoid severe injury, do not allow herbicide to contact foliage, green shoots, stems, exposed roots, or fruit of crop. The need for an adjuvant depends on brand used.
		MOA 9				
	Contact kill of green foliage.	<i>paraquat</i> Gramoxone Inteon 2SL	2.0 pts	0.5	24 hours/ --	Spray must not contact okra plants. Hooded sprayers must be used. Two applications can be made, allow 14 day interval between the two applications. Add 1 qt NIS or 1 gal COC per 100 gal of spray mix.
		Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.031	12 hours/ 0 days
		MOA 14				
	Nutsedge, wild radish, non-ALS resistant 1" pigweed, ragweed	<i>halosulfuron</i> Sanda 75DG	0.5-1 oz	0.02-0.048	12 hours/ --	Apply between rows of seeded or transplanted crop while avoiding contact with crop while using hooded sprayer. Do not apply more than 2 oz/A per crop cycle.
		MOA 2				

COMMERCIAL VEGETABLES - WEED CONTROL

ONIONS (Dry Bulb & Green)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Suppression or control of most annual grasses and broadleaf weeds, full rate needed for nutsedge control	<i>metam sodium</i> Vapam HL 42%	45-75 gal	19-31.5	5 days/ N/A	Rates are dependent on soil type and weeds present. Apply when soil moisture is near field capacity (60 to 80%). Apply through soil injection preferably shanking the product to a depth of 4 inches deep using knives spaced 4 inches apart; follow immediately with a bed shaper, roller, or other method to smooth and compact the soil surface. If irrigation is available, irrigate with at least 0.25" and/or cover with tarp immediately. Plant back interval is often 14 to 21 d and can be 30 d in some environments. May also apply preplant through center pivot but must follow serious buffer restrictions noted on label. New labels require buffer restrictions, additional worker protection safety procedures, and a fumigant management plan; study label closely.
		MOA Fumigant				
	Contact kill of all green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL	1.7-2.7 pt 2.5-4.0 pt	0.64-1.0	24 hours/ N/A	
	MOA 22					
	Most emerged weeds except for resistant pigweed, primrose, and spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds before seeding or 3 d before transplanting. Perennial weeds may require higher rates. The need for an adjuvant depends on brand used.
		MOA 9				
Preemergence (PRE)	Annual grasses and small-seeded broadleaf weeds	<i>DCPA</i> Dacthal W-75 6 F	≤ 6-8 lb ≤ 6-8 pt	≤ 4.5-6	12 hours/ N/A	Apply uniformly over soil after seeding. Incorporate using about 0.25 in irrigation; PPI is not recommended for onions. Contact your local extension office for the most effective weed management program using DCPA. These rates applied after seeding may cause crop stunting and delayed maturity. Injury can occur when onion emergence is delayed under cool or wet conditions; lower than labeled rates may be required.
		MOA 3				
Postemergence (POST)	Residual control of pigweed, purslane, spiderwort, and grasses	<i>S-metolachlor</i> Dual Magnum 7.62EC	8-16 fl oz	0.47-0.96	24 hours/ Green Onion = 21 days Dry Bulb = 60 days	SEEDED: Do not apply before 4 leaf stage. From the 4- to 6-leaf stage may apply 8 oz/A; rate can be increased to 12 oz/A after the 6 leaf stage. TRANSPLANT DRY BULB: Transplant and then irrigate to seal soil around the root ball. Apply within 48 hrs of planting. Rates of 12 to 16 fl oz are recommended.
		MOA 15				
	Actively growing annual grasses	<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.3	12 hours/ 30 days	Add 1 qt of COC/A. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 4.5 pt/A/season. Do not mix with other pesticides.
		MOA 1				

COMMERCIAL VEGETABLES - WEED CONTROL

ONIONS (Dry Bulb Only)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant incorporated (PPI) or Preemergence (PRE)	Annual grasses and small-seeded broadleaf weeds	<i>bensulide</i> Prefar 4 E MOA 8	5-6 qt	5-6	12 hours/ N/A	Apply PPI to a depth of 1 in. or apply PRE after planting. With PRE treatment irrigate immediately. Prefar may reduce onion vigor under cool wet growing conditions.
Postemergence (POST)	Residual control of annual grasses and small-seeded broadleaf weeds including purslane	<i>pendimethalin</i> Prowl 3.3 EC Prowl H20 3.8 AS MOA 3	1.8-2.4 pt 1.5-2.0 pt	0.75-1.0 0.72-0.95	24 hours/ N/A	Seedbed or direct seeded: Apply when onions have two to nine true leaves but prior to weed emergence. Use lower rates for applications to very young onions. Transplants: Apply to onions after soil has settled (watered) around transplants and no cracks are present. If no rainfall occurs within 2 d after application, irrigate as needed.
	Excellent residual option for henbit, purslane, pigweed, primrose, smartweed, and many others; controls small emerged weeds as well	<i>oxyfluorfen</i> Goal 2 XL 2EC Galigan 2E Goaltender 4F Galigan H20 4F MOA 14	3-32 fl oz 3-32 fl oz 1.5-16 fl oz 1.5-16 fl oz	0.05-0.5	24 hours/ 60 days	Seeded dry bulb onions: Apply 3 to 8 oz/A of Goal 2XL (1.5 to 4 oz/A of Goaltender) in a minimum of 40 GPA and with no less than 20 psi. Apply when onions have at least 3 true leaves, when weeds are 1 in. or smaller, and when conditions are not cool, wet, and/or cloudy. Use lower rates on younger onions with 3 to 4 oz/A of Goal 2XL ideal for onion in the 3- to 4-leaf stage. Sequential applications may be made but do not exceed 2.0 pt/A/season of Goal 2 XL or Galigan (1.0 pt/A for Goaltender). Transplanted onions: Suggest making a single application using up to 2.0 pt/A of Goal 2XL or Galigan (1.0 pt/A of Goaltender) within 2 d of transplanting but after irrigating to seal soil around root ball. <u>Do not wait longer than 2 d to make this application.</u> Do not exceed 2 pt/A of Goal 2XL or Galigan (1 pt/A of Goaltender) per crop season. <u>A tank mix with Prowl has shown excellent season long control.</u> NOTE: Never use surfactant or crop oil with oxyfluorfen or serious onion damage may occur. Do not apply if onions are under stress. Do not tank mix with fertilizer.
	Actively growing annual and perennial grasses	<i>clethodim</i> Select, others 2 EC SelectMax 0.97 EC TapOut 0.97 EC MOA 1 <i>fluzifop-P-butyl</i> Fusilade DX 2 EC MOA 1	6-16 fl oz 9-32 fl oz 9-32 fl oz	0.09-0.25 0.07-0.25 0.07-0.25	24 hours/ 45 days	For Select, add 1 gal COC/100 gal spray mix. Adding crop oil may increase crop injury at high temperatures. For SelectMax, add 1qt NIS/100 gal spray mix. Effective on annual bluegrass. Do not mix with other pesticides. Do not apply a broadleaf herbicide within 5 d of clethodim as reduced grass control may occur.
ROW MIDDLES ONLY Hooded spray	Most emerged weeds except for resistant pigweed, primrose, and spiderwort Morningglory, spiderwort, and small pigweed	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae) MOA 9 <i>carfentrazone</i> Aim EC 2.0 EC MOA 14	16-30 fl oz 11-22 fl oz 0.8-2 fl oz	0.4-0.75 lb ae 0.013-0.031	4 hours/ 14 days 12 hours/ 0 days	Apply as a hooded spray or as a wiper application in row middles; UGA does not recommend hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant varies by brand. Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 inch: pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Expect some leaf speckling from drift.

COMMERCIAL VEGETABLES - WEED CONTROL

PEAS, Green (Note: For southern pea recommendations, see Bean section.)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Contact kill of all green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL MOA 22	1.3-2.7 pt 2.0-4.0 pt	0.49-1.0	24 hours/ N/A	Apply to emerged weeds before crop emergence. Add 1 qt NIS or 1 gal COC/100 gal spray mix.
	Most emerged weeds except for resistant pigweed, spiderwort, or primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds but before crop emergence. Do not feed crop residue to livestock for 8 weeks following treatment. The need for an adjuvant depends on brand used.
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC MOA 14	0.8-2 fl oz	0.013-0.03	12 hours/ N/A	Apply prior to planting or before crop emergence to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Likley need to mix with glyphosate.
Preplant incorporated (PPI) or Preemergence (PRE)	Annual grasses and broadleaf weed suppression; POOR pigweed control	<i>clomazone</i> Command 3ME MOA 13	up to 1.3 pt	up to 0.48	12 hours/ --	Succulent peas only. Apply to the soil surface immediately after seeding. <u>Limited GA research</u> ; limit acres treated and use lower rates until confidence is obtained. See label for buffer and rotation restrictions.
	Annual grasses and small-seeded broadleaf weeds such as pigweeds and purslane	<i>pendimethalin</i> Prowl 3.3EC Pendimax 3.3EC Prowl H20 3.8AS MOA 3	1.8-2.4 pt 1.2-2.4 pt 1.5-2.0 pt	0.75-1 0.5-1 0.72-0.95	24 hours/ 45 days	English, Dry, Garden, Dwarf, Green, Pigeon, and Edible Pod. Incorporate 2-3 inches deep prior to planting. Rates lower than some products recommend (1.2 to 1.5 pt/A) are suggested for sandy soils with low organic matter or when following with a Dual type product PRE. Applying immediately after planting and then irrigating is not supported by the label
		<i>trifluralin</i> Treflan 4EC Trifluralin 4L MOA 3	1-1.5 pt	0.5-0.75	12 hours/ N/A	Incorporate 2-3 inch deep, within 8 hr of application, into the soil prior to SPRING (according to label) planting. Rates lower than those labeled (12 oz/A) are suggested for sandy soils with low organic matter or when following with a Dual type product PRE. Applying immediately after planting and then irrigating is not supported by the label.
	Annual grasses, small-seeded broadleaves, and suppression of yellow nutsedge and Texas millet	<i>S-metolachlor</i> Dual Magnum 7.62EC MOA 15	12-16 oz	0.7-0.95	24 hours/ N/A	Label specifies use in English peas only . Apply to soil surface within 1 d of planting and irrigate the following day (2 d after application). Use lower rates on sandy soils with low organic matter and when in a system with pendimethalin or trifluralin.
	Wild radish, nightshade, suppression of non-ALS resistant pigweed and purslane	<i>imazethapyr</i> Pursuit 2EC MOA 2	2-3 fl oz	0.03-0.047	4 hours/ 30 days	English peas only. Apply preplant incorporated or to soil surface immediately after planting. Suggest mixing with a grass herbicide. Do not make more than 1 application Pursuit/yr. <u>Rotational restrictions are a significant concern.</u>

COMMERCIAL VEGETABLES - WEED CONTROL

PEAS, Green (Note: For southern pea recommendations, see Bean section.)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS	
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT			
Postemergence (POST)	Broadleaves such as cocklebur and smallflower morningglory and suppression of yellow nutsedge	<i>bentazon</i> Basagran 4SL	1-2 pt	0.5-1	48 hours/ Succulent Pea = 10 days Dry Pea = 30 days	Garden, English and southern peas. Apply after 3 pairs of leaves are present. Injury such as yellowing, bronzing, speckling or burning of leaves may occur. Do not add oil according to label. In Georgia, Basagran can not be applied alone. May be applied from 6 to 16 oz per acre to dry and succulent peas ONLY when mixed with Raptor or Pursuit, see labels. Raptor is not labeled on some peas/beans grown in Georgia, see label.	
		MOA 6					
	Wild radish, nightshade, suppression of non-ALS resistant pigweed and purslane	<i>imazethapyr</i> Pursuit 2EC	3.0 fl oz	0.047	4 hours/ 30 days		English pea only. Apply to 1 to 3 in. weeds when peas are at least 3 in tall but prior to 5 nodes. Add NIS at 1 qt/100 gal of spray mix. Do not use COC. Do not make more than 1 application per year. <u>Rotational restrictions are a significant concern.</u>
		MOA 2					
	Actively growing annual and perennial grasses	<i>clethodim</i> SelectMax 0.97EC TapOut 0.97EC	9-16 fl oz 9-16 fl oz	0.07-0.12	24 hours/ 21 days		Add NIS at 1qt/100 gal spray mix. Apply only one application before bloom. Do not mix with other pesticides. Do not apply a broadleaf grass herbicide within 5 d of clethodim as reduced grass control may occur.
		MOA 1					
	<i>quizalofop p-ethyl</i> Assure II 0.88EC Targa 0.88EC	6-12 fl oz 6-12 fl oz	0.04-0.08	12 hours/ 30 days	With sethoxydim, add 1 qt of COC/A; see label about use of other additives. With quizalofop, add 1 qt NIS/100 gal to spray mix. DO NOT apply with other herbicides. Do not mix with other pesticides. Do not exceed 14 oz/A/season quizalofop. Do not apply more than 4 pt/A/season sethoxydim.		
	MOA 1						
	<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.3	12 hours/ Succulent Pea = 15 days Dry Pea = 30 days			
	MOA 1						
ROW MIDDLES ONLY	Most weeds except resistant pigweed, primrose, and spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA suggests against using hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant depends on brand used.	
Hooded spray		MOA 9					
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.031	12 hours/ 0 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Expect leaf speckling from drift.	
		MOA 14					

COMMERCIAL VEGETABLES - WEED CONTROL

PEPPERS

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS	
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT			
Preplant	Suppression or control of most annual grasses and broadleaf weeds, full rate required for nutsedge control	<i>metam sodium</i> Vapam HL 42%	45-75 gal	19-31.5	5 days/ N/A	Rates are dependent on soil type and weeds present. Apply when soil moisture is near field capacity (60 to 80%). Apply through soil injection preferably shanking the product to a depth of 4 inches deep using knives spaced 4 inches apart; follow immediately with a bed shaper, roller, or other method to smooth and compact the soil surface. If irrigation is available, irrigate with at least 0.25" and/or cover with tarp immediately. May apply through drip irrigation prior to planting a second, third, or fourth crop on mulch. Plant back interval is often 14-21 d and can be 30 d in some environments. See label for all restrictions and additional information. Chloropicirn (150 lb/A broadcast) will also be needed when laying first crop mulch to control nutsedge. Visit www.gaweed.com for the latest circular on fumigant systems. New labels require buffer restrictions, additional worker protection safety procedures, and a fumigant management plan; study this label closely.	
		MOA Fumigant					
	Contact kill of all green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL	1.3-2.7 pt 2.0-4.0 pt	0.49-1.0	14 hours/ N/A		Apply to emerged weeds before crop emergence. Add 1 qt NIS or 1 gal COC/100 gal spray mix. If applying over plastic, must wash off with 0.5 inch rain or irrigation before transplant.
		MOA 22					
	Broadleaf weeds such as henbit, geranium, primrose and a few grasses	<i>oxyfluorfen</i> Goal 2 XL 2EC Goaltender 4F	up to 2 pt up to 1 pt	up to 0.5 lb	24 hours/ N/A		Plasticulture only. Apply to soil surface of pre-formed beds <u>at least 30 d prior to transplanting</u> . Plastic mulch can be applied anytime after application but do not disturb treated pre-formed bed.
		MOA 14					
	Most emerged weeds except for resistant pigweed	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A		In bareground, apply at least 3 d prior to planting. In plastic, apply at least 7 d prior to planting and mulch must be washed off with 0.5 inch rain/irrigation prior to planting. Adjuvant needs depend on brand used.
MOA 9							
Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.03	12 hours/ N/A	Transplants only. Apply prior to planting to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5 - 2 gal COC/100 gal of spray mix. Likley need to mix with glyphosate. If applied over plastic mulch, a single 0.5 inch irrigation/rain event plus a 7 d waiting period must occur before transplanting.		
	MOA 14						
Morningglory and small pigweed	<i>pyraflufen ethyl</i> ET 0.208L	1.0-2.0 fl oz	0.0016-0.0032	12 hours/ N/A	Bareground: Wait 1 day following preplant burndown application before planting. Mulch Production. May apply over mulch; however, a single 0.5 inch irrigation/rain event plus a 7 d waiting period must occur before transplanting. Apply ET with a crop oil concentrate at 1% v/v to sensitive weeds that are less than 3 inches.		
	MOA 14						

COMMERCIAL VEGETABLES - WEED CONTROL

PEPPERS

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant or Preemergence (PRE)	Annual grasses and small-seeded broadleaf weeds	<i>bensulide</i> Prefar 4E	5-6 qt	5-6	12 hours/ N/A	Apply PPI to a 1 in. depth or apply PRE after planting. With PRE application, irrigate immediately after application. See label for rotational restrictions.
		MOA 8				
		<i>napropamide</i> Devrinol 50 DF Devrinol 2 XT	2-4 lb 2-4 qt	1-2	24 hours/ N/A	Bareground: Apply preplant and incorporate into the soil 1 to 2 inches as soon as possible after application. Shallow cultivation or irrigation will improve control. Can be used on direct-seeded and transplanted peppers. Plasticulture: Apply to the soil surface of pre-formed beds immediately prior to laying plastic. Insure the plastic laying process does not incorporate or disturb the treated bed. Soil must be moist for activity. May also be used as a row middle application, see label. Plantback 60 d to leafy vegetables and 180 d for grains.
		MOA 15				
		<i>trifluralin</i> Treflan 4 EC Trifluralin 4 L	≤ 1 pt	≤ 0.5	12 hours/ N/A	Transplants only. Apply pre-transplant and incorporate to a depth of 2 to 3 in. within 8 hr. Use of high rates and/or deep incorporation WILL result in crop injury. <u>Lower than labeled rates may be needed on some GA soils. Any tillage practice that concentrates trifluralin in the root zone WILL cause significant injury.</u> NOT SUGGESTED FOR USE IN MULCHED SYSTEMS.
		MOA 3				
	Annual grasses and small-seeded broadleaf weeds, morningglory suppression, poor pigweed control	<i>clomazone</i> Command 3 ME	0.7-2.67 pt	0.25-1.0	12 hours/ N/A	Not labeled for use on banana pepper. Apply to the soil surface of pre-formed beds immediately prior to laying plastic. Insure the plastic laying process does not incorporate or disturb the treated bed. Pepper has excellent tolerance but one should consult the label for rotational crop intervals and buffer zone requirements.
		MOA 13				
Preplant or Postemergence (POST)	Residual control of pigweed, purslane, spiderwort, and grasses; suppresses Texas millet	<i>S-metolachlor</i> Dual Magnum 7.62EC	8-16 oz	0.47-0.94	24 hours/ 60 days	Bell Pepper Transplants Only. A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use. Mulch Production: Option 1: Preferred application is to apply 10 to 12 oz/A Dual Magnum otop of bell pepper between 1 and 2 weeks after transplanting. Option 2: Apply 8 to 12 oz/A to the soil surface of pre-formed beds prior to laying plastic; make sure the plastic laying process does not disturb the treated bed. Option 3: A split application (preplant under mulch followed by POST) is also labeled; rates must be reduced to not exceed a total of 16 oz/A. Option 4: Row middle application at 1 pt/A. Bareground Production: Apply conservative rate otop of transplants 2 d after both transplanting and sealing soil around root ball. Dual also may be applied pre-transplant without disturbance but some stunting is expected.
		MOA 15				

COMMERCIAL VEGETABLES - WEED CONTROL

PEPPERS

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant and/or Row Middle	Yellow nutsedge, pigweeds, eclipta, purslane suppression	<i>fomesafen</i> Reflex 2L	12-16 oz	0.19-0.25	24 hours/ N/A	<p>Transplants Only. A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use.</p> <p>Plasticulture First Crop: Apply on soil surface of preformed bed after laying drip BUT before laying mulch. Make sure plastic laying process does not disturb treated area. Soil must be moist for activity.</p> <p>Plasticulture Second Crop: May be applied otop of mulch prior to transplanting but only if 1) bed formation allows the herbicide to be washed from the mulch, 2) a single rainfall or irrigation event of at least 0.5 inch occurs after applying Reflex and prior to transplanting, and 3) transplant holes are not punched until after the herbicide is washed from the mulch. Suggest no more than 12 oz/A for this use.</p> <p>Bareground: Prepare land for planting, apply Reflex at no more than 12 oz/A non- incorporated preplant up to 7 days prior to transplanting, irrigate lightly, and then transplant. Do not concentrate the treated soil around the plant with the transplanting process. Use lower rates in cool, wet conditions and on sands.</p> <p>Row Middle: Apply 1.0 to 1.5 pt/A prior to transplanting; do not contact mulch top.</p> <p>Carryover is a Concern.</p>
		MOA 14				
Postemergence (POST)	Actively growing annual and perennial grasses	<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC	6-8 fl oz 9-16 fl oz 9-16 fl oz	0.09-0.12 0.07-0.12 0.07-0.12	24 hours/ 20 days	<p>A section 24(c) state local need label allows an application of SelectMax without the addition of an adjuvant; applying Select Max at 9 oz/A when grasses are less than 3 inches is the best option for control without injury. The addition of NIS at 1 qt/100 gal spray mix is recommended for large grasses and goosegrass for SelectMax. For Select, a crop oil at 1 gal/100 gal spray mix is required for control. Controls annual bluegrass. Do not mix with other pesticides. Do not apply a broadleaf grass herbicide within 5 d of clethodim as reduced grass control may occur.</p> <p>Add 1 qt COC/A. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 4.5 pt/A/season. Do not mix with other pesticides.</p>
		MOA 1				
		<i>sethoxydim</i> Poast 1.53 EC	1-1.5 pt	0.19-0.3	12 hours/ 7 days	
MOA 1						
ROW MIDDLES ONLY	Nutsedge, wild radish, non-ALS resistant 1" pigweed, ragweed	<i>halosulfuron</i> Sanda 75DG	0.5-1.0 oz	0.024-0.048	12 hours/ 30 days	Apply to row middles as a preemergence or postemergence spray. Do not allow spray to contact the crop or the plastic mulch. Add a NIS at 1 qt/100 gal spray solution. Rotational restrictions are a concern, see label.
Shielded spray		MOA 2				
ROW MIDDLES ONLY	Contact kill of succulent weeds less than 3 inches	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL	1.3 pt 2 pt	0.47	24 hours/ --	Use hooded sprays adjusted to prevent spray contact with crop. Add a NIS at a rate 2 pt/100 gal of spray mix. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause drift. Do not make more than 3 applications/season.
Hooded spray		MOA 22				

COMMERCIAL VEGETABLES - WEED CONTROL

PEPPERS

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
ROW MIDDLES ONLY Hooded spray (continued)	Most emerged weeds except resistant pigweed, spiderwort, or primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Labeled as a hooded spray or wiper application in row middle; UGA does not recommend hooded sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant depends on brand used.
		MOA 9				
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.031	12 hours/ 0 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 in. Add 1.5-2 gal COC/100 gal of spray mix. Expect some leaf speckling from drift.
	Excellent residual control for pigweeds, purslane, beggarweed, and other broadleaf weeds	<i>flumioxazin</i> Chateau 51WDG	up to 4 oz	up to 0.127	12 hours/ N/A	For row middle applications in RAISED BED (at least 24 in. wide) plasticulture. Third Party Indemnification Label available ONLY through the Georgia Fruit and Vegetable Growers Association. Growers must obtain label to receive the appropriate application procedures (and to be legal); failure to follow these procedures will likely result in crop death. 1. Do allow spray to come into contact with mulch. 2. Must apply before transplanting. 3. Hooded sprayer. 4. Rainfall required after application but before transplanting.

POTATO (Irish)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant or Preemergence (PRE)	Contact kill of all green foliage; stale seedbed application	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL	1.3 pt 2 pt	0.49	24 hours/ N/A	Apply to emerged weeds up before crop emergence. May be used instead of the drag-off operation to kill emerged weeds before the application of PRE herbicides. Add 1 qt NIS or 1 gal COC/100 gal spray mix.
		MOA 22				
	Most emerged weeds except for resistant pigweed, primrose, and spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds before crop emergence. Do not feed crop residue to livestock for 8 weeks following treatment. Perennial weeds may require higher rates. The need for an adjuvant depends on brand used.
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.03	12 hours/ N/A	Apply prior to planting up to 1 d after planting to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Likley need to mix with glyphosate. Do not contact any portion of the crop or severe injury will occur.

COMMERCIAL VEGETABLES - WEED CONTROL

POTATO (Irish)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant or Preemergence (PRE) (continued)	Annual grasses and small-seeded broadleaves	<i>pendimethalin</i> Prowl 3.3EC Prowl H20 3.8AS	1.8-2.4 pt 1.5-2.0 pt	0.75-1 0.72-0.95	24 hours/ N/A	Apply just after planting or drag-off to weed-free soil before crop emerges. Incorporate into the top 1-2 in without damaging sprouts or seed pieces. Can also be applied early POST from crop emergence to the 6-inch stage of growth. Only one application can be made per season.
		MOA 3				
		<i>trifluralin</i> Treflan 4EC Trifluralin 4L	1.0-1.5 pt	0.5-75		
	Annual grasses (suppresses Texas millet), small-seeded broadleaf weeds such as pigweeds, and suppression of yellow nutsedge	<i>S-metolachlor</i> Dual Magnum 7.62EC	1-1.66 pt	0.95-1.58	24 hours/ 60 days	Apply immediately after drag-off to weed-free soil before crop emerges. Can also be applied at layby for residual control of late season weeds. Consult label for tank mixtures with metribuzin, linuron, pendimethalin, and EPTC. Consult label for proper rates on your soil type and other instructions. Injury can result with cool/wet soil conditions especially for early maturing cultivars such as "Superior." If applied at layby do not harvest within 40 d of application. Irrigate within 48 hr of application.
		MOA 15				
	Annual grasses, most broadleaf weeds, plus nutsedge suppression	<i>EPTC</i> Eptam 7E	3.5 pt	3.1	12 hours/ 30 days	Apply preplant and incorporate 2 to 3 in deep. The variety "Superior" has been shown to be sensitive to Eptam.
		MOA 8				
	Annual broadleaf weeds including pigweeds, purslane, Florida pusley	<i>flumioxazin</i> Chateau 51WDG	1.5 oz	0.048	12 hours/ N/A	Apply after drag-off or hilling but before potatoes and weeds emerge. A minimum of 2 in of soil must cover the potatoes or injury may occur. <u>Check label for proper sprayer clean out instructions.</u> <u>Limited research has been conducted;</u> try on a small acreage first.
	Pigweeds, yellow nutsedge, eclipta, and wild poinsettia	<i>fomesafen</i> Reflex 2L	12-16 fl oz	0.019-0.25	24 hours/ 70 days	Apply after planting but before potato emergence. May mix with other registered herbicides. Do not preplant incorporate. Do not apply to emerged potato. Do not apply on yams. Do not harvest potato within 70 days of application. Limited research, try on few acres only at the 12 oz/A or lower rate.
MOA 14						
Most annual broadleaf weeds and some annual grasses	<i>linuron</i> Lorox DF 50WDG	1.5-2.5 lb	0.75-1.25	24 hours/ N/A	Apply just after planting or drag-off or hilling but before crop emerges. If emerged weeds are present, add 1 pt NIS for each 25 gal spray mixture. Do not use on sand or loamy sand soils. Repeat applications may be made, but do not exceed 3 lb/A/yr. Weeds should be less than 3 in. when treated.	
	MOA 7					
Most annual broadleaf weeds and some annual grasses	<i>metribuzin</i> Dimetric Metribuzin Metri 75 DF Metri 4 F	0.3-1.3 lb 0.5-2 pt	0.25-1	12 hours/ 60 days	Apply just after planting or drag-off, but before crop emerges. Refer to label for specific cultivar tolerances. <u>Not recommended for use on sand or sandy loam soils; do not apply more than 0.5 lb ai/A on sandy soils.</u> Refer to product label for specific rates and cultivar tolerances. See label for rotational restrictions.	
	MOA 5					

COMMERCIAL VEGETABLES - WEED CONTROL

POTATO (Irish)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant or Preemergence (PRE) (continued)	Most annual broadleaf weeds and some annual grasses (continued)	<i>rimsulfuron</i> Matrix 25DF MOA 2	1-1.5 oz	0.016-0.02	4 hours/ 60 days	Apply after drag-off or hilling but before potatoes and weeds emerge. If emerged weeds are present, add 1 qt NIS per 100 gal of water. Limited research has been conducted!
Postemergence (POST)	Many annual broadleaf weeds and some annual grasses	<i>metribuzin</i> Dimetric Metribuzin Metri 75DF Metri 4F MOA 5	0.3-0.67 lb 0.5-1 pt	0.25-0.5	12 hours/ 60 days	Can be used on russet or white-skinned varieties that are not early maturing. Apply only if there have been at least three successive d of sunny weather before application. Treat before weeds are 1 in. tall. Treatment may cause some chlorosis or minor necrosis. <u>Do not apply more than 0.5 lb ai/A</u> . See rotational restrictions.
		<i>rimsulfuron</i> Matrix 25DF MOA 2	1-1.5 oz	0.016-0.02	4 hours/ 60 days	Apply to young actively growing weeds after crop emergence but before the crop exceeds 14 in. tall. Add 1 qt NIS/100 gal of water. Limited research has been conducted! Do not exceed 2.5 oz/A/yr.
	Actively growing annual and perennial grasses	<i>sethoxydim</i> Poast 1.53EC MOA 1	1-1.5 pt	0.19-0.3	12 hours/ 30 days	Add 1 qt COC/A. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 5 pt/A/season. Do not mix with other pesticides.
		<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC MOA 1	6-16 fl oz 9-32 fl oz 9-32 fl oz	0.09-0.25 0.07-0.25 0.07-0.25	24 hours/ 30 days	For Select add 1 gal COC/100 gal spray mix. Adding crop oil may increase crop injury at high temperatures. For SelectMax add 1qt NIS/100 gal spray mix. Effective on annual bluegrass. Do not mix with other pesticides. Do not apply a broadleaf grass herbicide within 3 d of clethodim as reduced grass control may occur.
ROW MIDDLES ONLY Hooded spray	Most emerged weeds except resistant pigweed, primrose, and spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae) MOA 9	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant depends on brand used.
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC MOA 14	0.8-2 fl oz	0.013-0.03	12 hours/ 7 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 in. Add 1.5-2 gal COC/100 gal of spray mix. Ground speed should not exceed 3.5 mph.

COMMERCIAL VEGETABLES - WEED CONTROL

POTATO (Sweet)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4 SL (3 lb ae) 5.5 SL (4.5 lb ae) MOA 9	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds before transplanting. Do not feed crop residue to livestock for 8 weeks following treatment. Perennial weeds may require higher rates. The need for an adjuvant depends on brand used.
		<i>flumioxazin</i> Valor SX 51 WDG Chateau 51 WDG MOA 14	2.5 oz 2.5 oz	0.08	12 hours/ N/A	Apply 2 to 5 d prior to transplanting to the pre-formed row. Do not incorporate and minimize movement of soil during transplanting. Do not apply after transplanting or severe injury and crop death will occur. Do not use greenhouse grown transplants. If using a variety other than Beauregard, test a small area first before use. See label for other precautions including tank clean out concerns.
Post-transplant Preemergence	Annual grass and broadleaf weeds, morningglory suppression, weak on pigweed	<i>clomazone</i> Command 3ME MOA 13	1.5 pt	0.56	12 hours/ 95 days	Post-transplant. Apply within 5 d of transplanting for preemergence control of annual grasses and broadleaf weeds. Place roots below soil surface where treatment will occur. See label regarding buffers and rotation restrictions.
		<i>napropamide</i> Devrinol 50DF Devrinol 2-XT MOA 15	2-4 lb 2-4 qt	1-2	24 hours/ N/A	Plant beds: Apply to soil surface after sweet potato roots are covered with soil but prior to soil cracking and sweet potato plant emergence. Does not control emerged weeds. Production fields: Apply to soil surface immediately after transplanting. If rainfall does not occur within 24 hr, shallow incorporation or irrigate with sufficient water to wet the soil to a depth of 2 to 4 in.
	Residual control of pigweeds, purslane, spiderwort, and grasses	<i>S-metolachlor</i> Dual Magnum 7.62 EC MOA 15	8-12 oz	0.47-0.7	24 hours/ 40 days	A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use. New label, experiment on few acres first. After transplant, irrigate to seal soil around transplant root ball, apply Dual Magnum, and then lightly irrigate within 48 hr. A second application at 8 oz/A may be made 14 to 21 d later. Use conservative rates on light soils and in cool/wet conditions. Do not preform tillage operation that concentrates Dual around the crop root ball.
Postemergence (POST)	Actively growing annual and perennial grasses	<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC MOA 1	6-16 fl oz 9-32 fl oz 9-32 fl oz	0.09-0.25 0.07-0.25 0.07-0.25	24 hours/ 30 days	For Select add 1 gal COC/100 gal spray mix. Adding crop oil may increase crop injury at high temperatures. For SelectMax add 1qt NIS/100 gal spray mix. Effective on annual bluegrass. Do not apply a broadleaf grass herbicide within 5 d of clethodim as reduced grass control may occur.
		<i>sethoxydim</i> Poast 1.53EC MOA 1	1-1.5 pt	0.19-0.3	12 hours/ 30 days	With sethoxydim, add 1 qt COC/A. With fluzifop, add 1 gal of COC or 1 qt NIS/100 gal spray mix. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 48 oz/A fluzifop/season. Do not apply more than 5 pt/A/season sethoxydim. Do not mix with other pesticides.
		<i>fluzifop-P-butyl</i> Fusilade DX 2EC MOA 1	6-16 fl oz	0.1-0.25	12 hours/ 55 days	

COMMERCIAL VEGETABLES - WEED CONTROL

POTATO (Sweet)

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
ROW MIDDLES ONLY Hooded spray	Most emerged weeds except for resistant pigweed, spiderwort, and primrose	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant depends on brand used.
		MOA 9				
	Morningglory, spiderwort, and very small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.031	12 hours/ 7 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 inch: pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix.
		MOA 14				

SPINACH

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Most emerged weeds except for resistant pigweed, primrose, and spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	Apply to emerged weeds before seeding. Do not feed crop residue to livestock for 8 weeks following treatment. Perennial weeds may require higher rates. The need for an adjuvant depends on brand used.
		MOA 9				
Postemergence (POST)	Broadleaf weeds including clover, sowthistle, cocklebur, jimsonweed, ragweed	<i>clpyralid</i> Stinger 3EC	0.25-0.33 pt	0.1-0.13	12 hours/ 21 days	Apply to spinach in the 2- to 5-leaf stage when weeds are small and actively growing. Will control most legumes. See label for rotational concerns. Do not exceed 0.5 pt/A/yr.
		MOA 4				
	Broadleaf weeds	<i>phenmedipham</i> Spin-aid 1.3EC	3-6 pt	0.5-1	12 hours/ 21 days	Processing spinach only. Do not use when expected high temperatures will be above 75° F. For best results, spray when weeds are in the two-leaf stage and crop has at least six true leaves. Use the 6 pt rate ONLY on well established crops that are not under stress. The application may be split, see label. Additives are not required.
		MOA 5				
Actively growing annual and perennial grasses		<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.3	12 hours/ 15 days	Add 1 qt COC/A. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 3 pt/A/season sethoxydim. Do not mix with other pesticides.
		MOA 1				
		<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC	6-8 fl oz 9-16 fl oz 9-16 fl oz	0.09-0.12 0.07-0.12 0.07-0.12	24 hours/ 14 days	For Select, add 1 gal COC/100 gal spray mix. Adding crop oil may increase crop injury at high temperatures. For SelectMax, add 1qt NIS/100 gal spray mix. Effective on annual bluegrass. Do not mix with other pesticides. Do not apply a broadleaf grass herbicide within 5 d of clethodim as reduced grass control may occur.
		MOA 1				

COMMERCIAL VEGETABLES - WEED CONTROL

SPINACH

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
ROW MIDDLES ONLY Hooded spray	Most emerged weeds except for resistant pigweed, primrose, and spiderwort	<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	16-30 fl oz 11-22 fl oz	0.4-0.75 lb ae	4 hours/ 14 days	Apply as a hooded spray or as a wiper application in row middles; UGA recommends against row middle sprays. To avoid severe injury, do not allow herbicide to contact any part of the crop including exposed roots. The need for an adjuvant varies by brand.
		MOA 9				
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 inch: pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Expect some leaf speckling from drift.
		MOA 14				

TOMATO

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant	Suppression or control of most annual grasses and broadleaf weeds, full rates required for nutsedge control	<i>metam sodium</i> Vapam HL 42%	45-75 gal	19-31.5	5 hours/ N/A	Rates are dependent on soil type and weeds present. Apply when soil moisture is near field capacity (60 to 80%) through soil injection preferably shanking the product to a depth of 4 inches deep using knives spaced 4 inches apart; follow immediately with a bed shaper, roller, or other method to smooth and compact the soil surface. If irrigation is available, irrigate with at least 0.25" and/or cover with tarp immediately. May apply through drip irrigation prior to planting a second, third, or fourth crop on mulch. Plant back interval is often 14-21 d and can be 30 d in some environments. See label for all restrictions and additional information. Chloropicirn (150 lb/A broadcast) will also be needed to control nutsedge when laying first crop mulch. Visit www.gaweed.com for the latest fumigant system circular. New labels require buffer restrictions, additional worker protection safety procedures, and a fumigant management plan; study this label closely.
		MOA Fumigant				
		<i>glyphosate</i> 4SL (3 lb ae) 5.5SL (4.5 lb ae)	32-64 oz 22-44 oz	0.75-1.5 lb ae	4 hours/ N/A	
	MOA 9					
	Contact kill of green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2SL	1.3-2.7 pt 2.0-4.0 pt	0.49-1.0	24 hours/ N/A	Apply to emerged weeds before transplanting. Add 1 qt NIS or 1 gal COC/100 gal spray mix. If applying over plastic, must wash off with 0.5 inch of rain or irrigation before transplanting or seeding.
		MOA 22				

TOMATO

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant (continued)	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0EC MOA 14	0.8-2 fl oz	0.013-0.03	12 hours/ N/A	Transplants only. Apply prior to planting to weeds less than 3 inch; pigweed less than 1 inch. Add 1.5-2 gal COC/100 gal of spray mix. Likley need to mix with glyphosate. If applied over plastic mulch, a single 0.5 in. irrigation/rain event plus a 7 d waiting period must occur before transplanting.
	Annual broadleaf weeds including morningglory and small pigweeds	<i>pyraflufen ethyl</i> ET 0.208L MOA 14	1.0-2.0 fl oz	0.0016-0.0032	12 hours/ N/A	Bareground: Wait 1 day following preplant burndown application before planting. Mulch Production: May apply over mulch; however, a single 0.5 inch irrigation/rain event plus a 7 d waiting period must occur before transplanting. Apply ET with a crop oil concentrate at 1% v/v to sensitive weeds less than 3 inches.
	Broadleaf weeds and a few grasses including geranium and primrose	<i>oxyfluorfen</i> Goaltender 4F Goal 2 XL 2EC MOA 14	up to 1 pt up to 2 pt	up to 0.5 lb	24 hours/ N/A	Plasticulture only. Apply to soil surface of pre-formed beds <u>at least 30 d prior to transplanting crop</u> . Plastic mulch can be applied anytime after application but do not disturb treated pre-formed bed when laying plastic.
	Yellow nutsedge suppression and broadleaf weeds including pigweed and purslane	<i>S-metolachlor</i> Dual Magnum 7.62EC MOA 15	12-16 fl oz	0.7-0.95	24 hours/ 30 days	Can be applied preplant to pre-formed beds just prior to laying plastic. Do not disturb treated bed when laying plastic. Can be applied post-directed to transplants after the first settling rain or irrigation. Can be applied post-directed to seeded tomatoes >4 inches tall. Also can use in row middles.
Preplant and/or Row Middle	Annual grasses and broadleaf weeds	<i>napropamide</i> Devrinol 50DF Devrinol 2XT MOA 15	2-4 lb 2-4 qt	1-2	24 hours/ N/A	Bareground: Apply preplant and incorporate into the soil 1 to 2 in. as soon as possible after application. Shallow cultivation or irrigation will improve control. Can be used on direct-seeded and transplanted tomatoes. Plasticulture: Apply to the soil surface of pre-formed beds immediately prior to laying plastic. Make sure the plastic laying process does not incorporate or disturb the treated bed. Soil must be moist for activity.
		<i>trifluralin</i> Treflan 4EC Trifluralin 4L MOA 3	≤ 1 pt	≤ 0.5	12 hours/ N/A	Apply pre-transplant and incorporate to a depth of 2 to 3 in. within 8 hr. Use of high rates and/or deep incorporation WILL result in crop injury. <u>Lower than labeled rates may be needed in some Georgia fields. Cultural practices that concentrate trifluralin in the root zone WILL cause tomato injury.</u> NOT SUGGESTED FOR MULCH SYSTEMS.
	Nutsedge suppression; non -ALS resistant 1" pigweed, ragweed, and radish control	<i>halosulfuron</i> Sanda 75DG MOA 2	0.5-1.0 oz	0.024-0.048	12 hours/ N/A	Transplants only: Apply after final bed forming and just prior to laying plastic mulch, do not disturb bed when laying mulch. May transplant into treated area 7 d after application. Do not exceed a total of 2 oz/A/yr. Rotational restrictions may be a concern, see label. Use conservative rate if in bareground production.

COMMERCIAL VEGETABLES - WEED CONTROL

TOMATO

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Preplant and/or Row Middle (continued)	Yellow nutsedge, pigweeds, eclipta, purslane suppression	<i>fomesafen</i> Reflex 2L	12-16 oz	0.19-0.25	24 hours/ N/A	<p>Transplants Only. A Section 24(c) Local Need Label must be obtained at www.farmassist.com prior to this use.</p> <p>Plasticulture First Crop: Apply on soil surface of preformed bed after laying drip BUT before laying mulch. Make sure plastic laying process does not disturb treated area. Soil must be moist for activity.</p> <p>Plasticulture Second Crop: May be applied ovetop of mulch prior to transplanting but only if 1) bed formation allows the herbicide to be washed from the mulch, 2) a single rainfall or irrigation event of at least 0.5 inch occurs after applying Reflex and prior to transplanting, and 3) transplant holes are not punched until after the herbicide is washed from the mulch. Suggest applying no more than 12 oz/A.</p> <p>Bareground: Prepare land for planting, apply Reflex non-incorporated preemergence up to 7 days prior to transplanting, irrigate, and then transplant. Suggest applying no more than 12 oz/A. Do not concentrate the treated soil around the plant with the transplanting process. Use conservative rate if cool and wet or on sands.</p> <p>Row Middle: Apply 1.0 to 1.5 pt/A prior to transplanting; do not contact mulch.</p> <p>Carryover is a large concern.</p>
		MOA 14				
	Annual grasses and broadleaf weeds including cocklebur, ragweed, smartweed, and velvetleaf	<i>metribuzin</i> Dimetric Metribuzin Metri 75DF Metri 4F	0.3-0.67 lb 0.5-1 pt	0.25-0.5	12 hours/ N/A	<p>Transplants only: Apply after final bed forming and just prior to laying plastic mulch, do not disturb bed when laying mulch. Place tomato transplant roots below herbicide layers to avoid injury. Use conservative rates when on sands or if it is cool/wet. See label for other instructions.</p> <p>See rotational restrictions on label for all crops, a second crop of cucumber may be damaged.</p>
		MOA 5				
Postemergence (POST)	Annual grasses and broadleaf weeds including cocklebur, ragweed, smartweed, velvetleaf, and morningglory	<i>metribuzin</i> Dimetric Metribuzin Metri 75DF Metri 4F	0.3-0.5 lb 0.5-0.75 pt	0.25-0.37	12 hours/ 7 days	<p>Seeded tomato must have at least five to six true leaves. For transplanted tomatoes, do not apply within 14 d of transplanting and until recovery from transplant shock and new growth is evident. Multiple treatments should be separated by at least 14 d. Apply only if there have been at least 3 successive d of sunny weather prior to application. Do not exceed 1 lb ai/yr. <u>Do not apply within 24 hours of application of other pesticides. Do not tank mix with other pesticides.</u></p> <p>See rotational restrictions on label for all crops, a second crop of cucumber will likely be damaged.</p>
	MOA 5					

COMMERCIAL VEGETABLES - WEED CONTROL

TOMATO

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS	
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT			
Postemergence (POST) (continued)	Nutsedge, non ALS-resistant pigweed, ragweed, radish, and cocklebur control	<i>halosulfuron</i> Sanda 75DG	0.5-0.75 oz	0.024-0.036	12 hours/ N/A	Apply postemergence 14 d after transplanting but before first bloom. May apply over plastic mulch. Add NIS at 1qt/100 gal of spray mix. If a PRE under plastic application of halosulfuron was made, use halosulfuron as a POST spot treatment only. Do not exceed a total of 2 oz/A/yr. Review rotational restrictions.	
		MOA 2					
	Broadleaf weeds including wild radish, common purslane, non-ALS resistant 1" pigweeds and some annual grasses	<i>rimsulfuron</i> Matrix DF 25WDG	1-2 oz	0.015-0.03	4 hours/ 45 days		Apply in tomatoes after the crop has at least two true leaves and weeds are small (1 in or less) and actively growing. Add nonionic surfactant at 1 qt/100 gal of spray solution. See label for rotational restrictions.
		MOA 2					
Residual control of pigweeds, purslane, spiderwort, and grasses	<i>S-metolachlor</i> Dual Magnum 7.62 EC	8-12 oz	0.47-0.7	24 hours/ 30 days	<p>A Section 24(c) Local Need Label must be obtained at www.farmassists.com prior to this use. New label, experiment on few acres first. <u>Do Not</u> exceed 1.33 pt/A for season.</p> <p>Post-transplant Mulch: Apply topically or directed 7 to 14 d after transplant.</p> <p>Post-transplant Bareground: Transplant, irrigate to seal soil around root ball, apply topically or directed 7 to 14 d after transplanting and irrigating.</p> <p>Topical applications may cause minor leaf speckling; use 8 oz/A in hot humid conditions. No injury expected with directed applications to base of plant.</p>		
	MOA 15						
Actively growing annual and perennial grasses	<i>clethodim</i> Select, others 2EC SelectMax 0.97EC TapOut 0.97EC	6-16 fl oz 9-32 fl oz 9-32 fl oz	0.09-0.25 0.07-0.25 0.07-0.25	24 hours/ 20 days		A section 24(c) state local need label allows an application of SelectMax without the addition of an adjuvant; applying Select Max at 9 oz/A when grasses are less than 3 inches is the best option for control without injury. The addition of NIS at 1 qt/100 gal spray mix is recommended for large grasses and goosegrass for Select Max. For Select, a crop oil at 1 gal/100 gal spray mix is required for control. Do not mix with other pesticides. Do not apply a broadleaf grass herbicide within 5 d of clethodim as reduced grass control may occur.	
	MOA 1						
	<i>sethoxydim</i> Poast 1.53EC	1-1.5 pt	0.19-0.3		12 hours/ 20 days		
	MOA 1				Add 1 qt/A of COC. Apply after transplants have recovered from shock (label specifies 14 d) or after seeded tomatoes have 5-6 leaves. Adding crop oil may increase crop injury at high temperatures. Do not apply more than 4.5 pt/A/season sethoxydim. Do not mix with other pesticides.		

COMMERCIAL VEGETABLES - WEED CONTROL

TOMATO

CROP / APPLICATION TIMING	WEED	FORMULATION	RATE/A BROADCAST		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	LBS ACTIVE INGREDIENT		
Directed ONLY	Annual grasses and broadleaf weeds including cocklebur, ragweed, smartweed, velvetleaf, and morningglory	<i>metribuzin</i> Dimetric Metribuzin Metri 75DF Metri 4F MOA 5	0.6-1.33 lb 1-2 pt	0.5-1.0	12 hours/ 7 days	Postemergence directed: Seeded tomato must have at least 5 to 6 true leaves. For transplanted tomatoes, do not apply within 14 d of transplanting and until recovery from transplant shock and new growth are evident. Multiple treatments should be separated by at least 14 d. Apply only if there have been at least 3 successive d of sunny weather prior to application. Do not exceed 1 lb ai/yr. <u>Do not apply within 24 hours of application of other pesticides. Do not tank mix with other pesticides. Do not apply within 7 d of harvest.</u>
	Nutsedge and annual broadleaf weed control including <i>Ipomoea</i> morningglory	<i>trifloxysulfuron</i> Envoke 75 WDG MOA 2	0.1-0.2 oz	0.0047-0.0094	12 hours/ 45 days	Apply as a postemergence directed spray adjusted to limit contact with tomato foliage. Add non-ionic surfactant at 1 qt/100 gal of spray mix. See label for rotation restrictions.
ROW MIDDLES ONLY Hooded spray	Contact kill of all green foliage	<i>paraquat</i> Firestorm Parazone 3SL Gramoxone Inteon 2 SL MOA 22	1.3 pt 2 pt	0.5	24 hours/ 30 days	Apply for control of emerged weeds between rows of tomato. Do not exceed 30 PSI. Add 1 qt NIS or 1 gal COC/100 gal spray mix. Do not allow spray to contact crop or injury will occur. Do not make more than 3 applications/season.
	Morningglory, spiderwort, and small pigweed	<i>carfentrazone</i> Aim EC 2.0 EC MOA 14	0.8-2 fl oz	0.013-0.03	12 hours/ 0 days	Apply as a hooded spray in row middles. Do not allow herbicide to contact the crop. Apply to weeds less than 3 in. Add 1.5-2 gal COC/100 gal of spray mix. Expect some leaf speckling from drift.
	Excellent residual control for pigweeds, purslane, beggarweed, and other broadleaf weeds	<i>flumioxazin</i> Chateau 51 WDG MOA 14	up to 4 oz	up to 0.127	12 hours/ N/A	For row middle applications in RAISED BED (at least 24 in. wide) plasticulture. Third Party Indemnification Label available ONLY through the Georgia Fruit and Vegetable Growers Association. Growers must obtain label to receive the appropriate application procedures (and to be legal); failure to follow these procedures will likely result in crop death. 1. Do allow spray to come into contact with mulch. 2. Must apply before transplanting. 3. Hooded sprayer. 4. Rainfall required after application but before transplanting.

WEED RESPONSE TO HERBICIDES USED IN VEGETABLE CROPS

A. Stanley Culpepper, Extension Agronomist-Weed Science

	Prefar	Sutan	Eptam/ Eradicane	Tillam	Ro-Neet	Treflan/ Prowl	Pursuit	Outlook	Lasso	Dual Magnum ¹
TIME OF APPLICATION	PPI	PPI	PPI	PPI	PPI	PPI	PPI/PRE	PPI/PRE	PPI/PRE	PPI/PRE
PERENNIAL WEEDS										
johnsongrass (rhizome)	P	F	F-G		P	P	P-F	P	P	P
purple nutsedge	P	G	G	F-G	P	P	F-G	P	P	P
yellow nutsedge	P	G-E	G-E	F-G	P	P	F	F	P	F
ANNUAL GRASSES										
barnyardgrass	F-G	E	G-E	G-E	G	E	F	G-E	E	E
crabgrass	F-G	E	G-E	G-E	G	E	F	E	E	E
crowfootgrass	F-G	E	G-E	G-E	G	E	P	E	E	E
fall panicum	F-G	G	G	G	G	G	P-F	G-E	G-E	G-E
foxtails	F-G	E	G-E	G-E	G	E	F-G	E	E	E
goosegrass	F-G	G	G	F-G	G	E	F	E	E	E
johnsongrass (seedling)	F-G	G	G	G	G	G-E	G	P-F	P-F	P-F
sandbur	F-G	G-E	G	G	G	E		F-G	F-G	F-G
signalgrass, broadleaf	F-G	G-E	G-E	P	G	E	P-F	F-G	F-G	G
Texas panicum	F	F-G	F-G	P-F	G	G	P	P-F	P-G	P-F
ANNUAL BROADLEAF WEEDS										
bristly starbur			P	G		P	F	P-F	F	P-F
citronmelon	P					P	P	P	P	P
cocklebur	P	P	P	P		P	G-E	P	P	P
crotalaria						P		P	P	P
croton, tropic						P	P	P	P-F	P
cutleaf eveningprimrose	P-F	G	G	G		G	G-E	F-G	G	G
Florida beggarweed	P	P-F	P-F			P	P	F	F	F
Florida pusley	F	G-E	G-E	G		E	G	G	G	G
jimson weed	P	P	P	P	P	P	F-G	P	P	P

PPI=preplant incorporated
PRE=preemergence.

¹ Weed response from Dual Magnum and Dual II Magnum is similar.

E = Excellent control, control above 90%
G = Good control, control above 80%
F = Fair control, control between 60 and 80%
P = Poor control, control less than 60%
If no response symbol is shown control is unknown.

WEED RESPONSE TO HERBICIDES USED IN VEGETABLE CROPS

	Prefar	Sutan	Eptam/ Eradicane	Tillam	Ro-Neet	Treflan/ Prowl	Pursuit	Outlook	Lasso	Dual Magnum ¹
TIME OF APPLICATION	PPI	PPI	PPI	PPI	PPI	PPI	PPI/PRE	PPI/PRE	PPI/PRE	PPI/PRE
ANNUAL BROADLEAF WEEDS (continued)										
lambsquarters	F	G	G	F	F	G-E	F-G	G	F-G	F-G
morningglory	P	P-F	P-F	P		P	F-G	P	P	P
nightshade, East. black					P	G		G	G	
pigweeds	F	G	G	G	G	G-E	G-E	G	G-E	G
prickly sida		P-F	P-F	P-F		P	G	P-F	P-F	P-F
purslane	P-F	G	G	G	G	E	G	G	G	G
ragweed, common	P	P-F	P-F	P-F	P	P	F-G	F	P-F	P
sicklepod	P	P-F	P-F	P		P	P	P	P-F	P
WINTER ANNUALS										
annual ryegrass	P					F-G		F-G	P	F-G
cudweed	P									
shepherdspurse	P-F			P	G	F-G	G		G	
swinecress	P									
wild mustards	P	P				P	E	P-F	P	P
wild radish	P	P				P	E	P	P	P

PPI=preplant incorporated
PRE=preemergence.

¹ Weed response from Dual Magnum and Dual II Magnum is similar.

E = Excellent control, control above 90%
G = Good control, control above 80%
F = Fair control, control between 60 and 80%
P = Poor control, control less than 60%
If no response symbol is shown control is unknown.

WEED RESPONSE TO HERBICIDES USED IN VEGETABLE CROPS

	atrazine	Curbit /Prowl	Command	Dacthal	Devrinol
TIME OF APPLICATION	PRE	PRE	PRE	PRE	PRE
PERENNIAL WEEDS					
johnsongrass (rhizome)	P	P	P	P	P
johnsongrass (rhizome)	P	P	P	P	P
yellow nutsedge	P	P	P	P	P-F
ANNUAL GRASSES					
barnyardgrass	F	G-E	G-E	F-G	G-E
crabgrass	G	G-E	E	G	G-E
crowfootgrass	G	G-E	E	G	G-E
fall panicum	P	G	G-E	F	G
foxtails	F	G-E	E	F-G	G-E
goosegrass	F-G	G	E	G	G
johnsongrass (seedling)	P	G	F-G	G	G
sandbur	F	G	F-G	F-G	G-E
signalgrass, broadleaf	P	G	E	F-G	G
Texas panicum	P	F-G	F	F	G
ANNUAL BROADLEAF WEEDS					
bristly starbur	G	P	P	P	P
citronmelon	F-G	P	P		P
cocklebur	G-E	P	P-F	P	P
crotalaria	G-E	P		P	P
croton, tropic	G	P	E	P	P
cutleaf eveningprimrose	E	G	F	F	F
Florida beggarweed	E	P	F-G	P	P-F
Florida pusley	E	G-E	F-G	F-G	G
jimsonweed	E	P	F-G	P	P
lambsquarters	E	G	G	G	G
morningglory	G	P	P-F*	P	P
nightshade, east. black	G	P		N	P
pigweeds	E	G-E	P	F-G	F-G

	atrazine	Curbit /Prowl	Command	Dacthal	Devrinol
TIME OF APPLICATION	PRE	PRE	PRE	PRE	PRE
ANNUAL BROADLEAF WEEDS (continued)					
prickly sida	E	P	E	G	F
purslane	E	G-E	G	F-G	G-E
ragweed, common	E	P	F-G		G
sicklepod	G	P	P	P	P
WINTER ANNUALS					
annual ryegrass	G				
cudweed				P-F	
shepherdspurse	G	P	F	P-F	F-G
swinecress	G			P-F	
wild mustards	G	P		P-F	P
wild radish	G	P		P-F	P

PRE = preemergence.

*Command provides fair control of pitted morningglory but poor control of other morningglory species.

E = Excellent control, control above 90%

G = Good control, control above 80%

F = Fair control, control between 60 and 80%

P = Poor control, control less than 60%.

If no response symbol is shown control is unknown.

WEED RESPONSE TO HERBICIDES USED IN VEGETABLE CROPS

	Goal	Pyramin	Reflex	Sandea	Sencor	Valor/ Chateau
TIME OF APPLICATION	PRE	PRE	PRE	PRE	PRE	PRE
PERENNIAL WEEDS						
johnsongrass (rhizome)	P		N	P	P	P
purple nutsedge	P		P-F	F	P	P
yellow nutsedge	P		G-E	F	P	P
ANNUAL GRASSES						
barnyardgrass	P			P	G	P
crabgrass	P		F-G	P	F-G	P
crowfootgrass	P			F	G	P
fall panicum	P			P	P	P
foxtails	P			P	P	P
goosegrass	P			P	F-G	P
johnsongrass (seedling)	P			P	P-F	P
sandbur	P			P	P	P
signalgrass, broadleaf	P		F-G	P	P-F	P
Texas panicum	P		F	P	P	P
ANNUAL BROADLEAF WEEDS						
bristly starbur			G-E	F	G	P-F
citronmelon					P-F	F-G
cocklebur			G	G	F	P
crotalaria					G	
croton, tropic			F-G		G	G
cutleaf eveningprimrose	G-E	G			G-E	E
Florida beggarweed			P	F	G-E	G
Florida pusley			P	F	G-E	G-E
jimsonweed				G	G	G
lambsquarters	F		E	F-G	G	G
morningglory			P-G*	P-F	P-G	F
nightshade, east. black		N		P	G	

PRE = preemergence.

*Reflex provides P – F control on Ipomoea morningglory and G control of smallflower morningglory.

E = Excellent control, control above 90%

G = Good control, control above 80%

F = Fair control, control between 60 and 80%

P = Poor control, control less than 60%.

If no response symbol is shown control is unknown.

WEED RESPONSE TO HERBICIDES USED IN VEGETABLE CROPS

	Goal	Pyramin	Reflex	Sandea	Sencor	Valor/ Chateau
TIME OF APPLICATION	PRE	PRE	PRE	PRE	PRE	PRE
ANNUAL BROADLEAF WEEDS (continued)						
pigweeds	G-E		E	G-E	G-E	E
prickly sida					G	F-G
purslane	G-E		G	F	G-E	E
ragweed, common	F		G	G	G	F-G
sicklepod	P		P	P	F-G	P
WINTER ANNUALS						
annual ryegrass	P	G		P	G	F
cudweed	G-E	G			G	
shepherdspurse	G-E	G			G	
swinecress	G-E	G			G	E
wild mustards	G-E	G	E	G-E	G-E	E
wild radish	G-E	G	E	G-E	G-E	E

PRE = preemergence.

*Reflex provides P – F control on Ipomoea morningglory and G control of smallflower morningglory.

E = Excellent control, control above 90%
 G = Good control, control above 80%
 F = Fair control, control between 60 and 80%
 P = Poor control, control less than 60%.
 If no response symbol is shown control is unknown.

WEED RESPONSE TO HERBICIDES USED IN VEGETABLE CROPS

	Aim	Atrazine	Basagran	Callisto	Goal	Lorox	Matrix	Pursuit	Sandea	Envoke	Laudis	Reflex
TIME OF APPLICATION	POST/ PD	POST	POST	POST	POST	POST/ PD	POST	POST	POST	POST	POST	POST
PERENNIAL WEEDS												
johnsongrass (rhizome)	P	P	P	P	P	P		P	P	P		P
purple nutsedge	P	P	P	P-F	P-F	P		G	E	F-G		P
yellow nutsedge	P	P	G	P-F	P-F	P-F	P-F	F	E	G		P-F
ANNUAL GRASSES												
barnyardgrass	P		P			F-G	G	F-G	P	P		P
crabgrass	P	G	P	F-G	P-F	G	F	P-F	P	P	F-G	P
crowfootgrass	P	G	P	P	P	G		P-F	P	P		P
fall panicum	P	G	P	P	P	G	F-G	P-F	P	P		P
goosegrass	P	F-G	P	P	P	G	P	P	P	P		P
johnsongrass (seedling)	P	F	P	P	P	G		F	P	P-F		P
sandbur	P	F	P	P	P-F	G			P	P		P
signalgrass, broadleaf	P	P-F	P	F	P-F	G		P-F	P	P		P
Texas panicum	P	P-F	P	P-F	P	G		P-F	P	P	G	P
ANNUAL BROADLEAF WEEDS												
bristly starbur	P	E	G-E		F-G	G		P-F	G-E	G-E		
citronmelon		G	P		F-G	G-E		P-F		G-E		
cocklebur	F-G	E	E	G-E	F-G	G-E	P-F	G-E	E	G-E		F-G
crotalaria	F	G	P		F-G	E		P				G-E
croton, tropic	F	G	P		G	G		P		F		
cutleaf eveningprimrose	P-F		F-G		F-G	F-G		F-G	P			P-F
Florida beggarweed	F	G	P		F	G-E		P	P-F	G-E		P
Florida pusley	F	G	P		P-F	G		F	P	P		F-G
jimsonweed	F	E	E	G-E	G	G	F	G	F	P		G
lambsquarters	G	E	P	G-E	P-F	E	F-G	P-F	P	G		P-F
morningglory, Ipomoea	G-E	E	P	F-G	G-E	G	F	F-G	P-F	G-E		G
morningglory, smallflower	F-G	E	G	F-G	G-E	G-E	F	P-F	P-F	P		G

POST = postemergence
 PD = post-directed.

*Will not control ALS-resistant pigweed.

E = Excellent control, control above 90%
 G = Good control, control above 80%
 F = Fair control, control between 60 and 80%
 P = Poor control, control less than 60%

If no response symbol is shown control is unknown.

WEED RESPONSE TO HERBICIDES USED IN VEGETABLE CROPS

	Aim	Atrazine	Basagran	Callisto	Goal	Lorox	Matrix	Pursuit	Sandea	Envoke	Laudis	Reflex
TIME OF APPLICATION	POST/ PD	POST	POST	POST	POST	POST/ PD	POST	POST	POST	POST	POST	POST
ANNUAL BROADLEAF WEEDS												
nightshade, eastern black	G		P			F-G	P		P			
pigweeds	F-G	E	P	G	G-E	G-E	G*	E*	G*	F*	G	G-E
prickly sida	F	E	G	P	F-G	G		P		P		P
purslane	F	E	P		F-G	G	F-G	F	P			
ragweed, common	P	E	F	F-G	G	E	P	P-F	G-E	G		G-E
sicklepod	P	E	P	P	F-G	G-E		P	P	E	P	P
WINTER ANNUALS												
annual ryegrass	P	F	P	P	F-G	F-G			P	P		P
cudweed					E	G						
shepherdspurse					G	G	G	P-F				
swinecress					G	G						
wild mustards	F		P-F		G	G		G-E	E		G	
wild radish	F	F-G	P-F		G	G	G	G-E	E		G	

POST = postemergence
PD = post-directed.

*Will not control ALS-resistant pigweed.

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If no response symbol is shown control is unknown.

WEED RESPONSE TO HERBICIDES USED IN VEGETABLE CROPS

	Sencor	Spin-aid	Stinger	Fusilade	Select	Poast	glyphosate	paraquat
TIME OF APPLICATION	POST	POST	POST	POST	POST	POST	POST/HOOD	POST/HOOD
PERENNIAL WEEDS								
johnsongrass (rhizome)	P	P	P	G-E	G-E	G	G-E	P
purple nutsedge	P	P	P	P	P	P	F-G	P-F
yellow nutsedge	P	P	P	P	P	P	F	P-F
ANNUAL GRASSES								
Barnyardgrass	F	P	P	G-E	E	E	E	G
Crabgrass	F	P	P	G	G-E	G-E	E	F
Crowfootgrass	F-G	P	P	F	G	F-G	E	G
fall panicum	P-F	P	P	G-E	G-E	G-E	E	G
Goosegrass	F	P	P	G	G-E	G-E	E	G
johnsongrass (seedling)	G	P	P	G-E	E	E	E	G
Sandbur	G	P	P	G	G	E	E	G
signalgrass, broadleaf	P	P	P	G-E	E	E	E	G-E
Texas panicum	P	P	P	G-E	E	E	E	G
ANNUAL BROADLEAF WEEDS								
bristly starbur	G		F-G	F	P	P	G-E	E
Citronmelon			F-G	P	P	P	G-E	G
Cocklebur	E		G-E	P	P	P	E	G
Crotalaria	E		G-E	P	P	P	G	G
croton, tropic	G		G	P	P	P	E	F
cutleaf eveningprimrose	G	G		P	P	P	P-F	F
Florida beggarweed	G	E	G	P	P	P	E	E
Florida pusley	F-G	G	F	P	P	P	P-G	P-F
jimsonweed	E	G	G	P	P	P	E	G
Lambsquarters	G-E	F-G	P	P	P	P	G	F
Morningglory	F-G	F-G	P	P	P	P	F-G	F-G**

POST = postemergence
 PD = post-directed.

**Paraquat provides P-F of smallflower morningglory but G control of other morningglories.

E = Excellent control, control above 90%
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 P = Poor control, control less than 60%

If no response symbol is shown control is unknown.

WEED RESPONSE TO HERBICIDES USED IN VEGETABLE CROPS

	Sencor	Spin-aid	Stinger	Fusilade	Select	Poast	glyphosate	paraquat
TIME OF APPLICATION	POST	POST	POST	POST	POST	POST	POST/HOOD	POST/HOOD
ANNUAL BROADLEAF WEEDS (continued)								
nightshade, eastern black	P		P	P	P	P	G	
Pigweeds	E	P-F	P	P	P	P	E	G
prickly sida	E			P	P	P	F-G	P-F
Purslane	G	F-G	P	P	P	P	G	G
ragweed, common	G	F-G	G	P	P	P	E	F
Sicklepod	E		F	P	P	P	E	G-E
WINTER ANNUALS								
annual ryegrass	F-G	F	P	G-E	G-E	E	G	F-G
Cudweed	G	G		P	P	P	G	G
Shepherdspurse	G	G	P	P	P	P	G	F
Swinecress	G	G		P	P	P	G	P
wild mustards	G-E	E		P	P	P	F-G	F-G
wild radish	G-E	E		P	P	P	F-G	F-G

POST = postemergence
 PD = post-directed.

**Paraquat provides P-F of smallflower morningglory but G control of other morningglories.

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