CORN
INSECT CONTROL

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PEST	MATERIAL AND FORMULATION	AMOUNT PER ACRE or PER 1000 FT OF ROW	LB. ACTIVE INGREDIENT PER ACRE	REMARKS AND PRECAUTIONS
Preplant treatment for soil insects	chlorpyrifos Lorsban, Chlorpyrifos, Chlorfos, others 4E	4 pt.	2.0	Use chlorpyrifos for grubs, wireworms, seed corn maggot, and S. corn rootworm. Broadcast using 20 gpa before planting and immediately incorporate into top 2 - 4 inches of soil. Plant crop as soon as possible after treatment.
	bifenthrin Brigade, Capture, Discipline, Fanfare, others (2EC)	3 - 4 fl. oz.	0.047 - 0.062	Use bifenthrin for grubs, wireworms, seedcorn maggot, and cutworms. Broadcast using 20 gpa before planting and immediately incorporate into top 3 inches of soil. Plant crop as soon as possible after treatment. May be tank mixed with preplant herbicides.
Soil Insects; At-planting: wireworm, grubs, S. corn rootworm, seed corn maggot, fire ants (Also see sections for billbugs, cutworms, lesser cornstalk borer, and mid-season root-worms for these pests)	**At-Planting** bifenthrin Brigade, Capture, Fanfare, Discipline, others 2EC, Capture LFR	0.15 - 0.3 fl. oz./ 1000 ft of row	0.0023-0.0046 / 1000 ft	All these materials at the listed rates provide helpful control, but may not provide complete protection if population pressure is great. Risk of severe infestation is greater in reduced/no tillage, fallow land, following sob, poor soil conditions for seedling growth, and late-planted corn.
	Capture 1.15G, similar products	6.4 - 8.0 oz /1000 ft	Varies with row spacing	**NOTE**: Rates are for 1000 ft of row in 30-40 inch rows. Per acre rates vary with row spacing; See labels for per acre rates for specific row spacing and for row spacings less than 30 inches apart.
	chlorpyrifos Lorsban, Chlorpyrifos, Chlorfos, others 4E	2.4 fl. oz./1000 ft or 2 pt / acre	Varies 1.0	**NOTE**: Apply Counter 15G or Counter 20G as a T-band or in-furrow. Counter will interact with ALS inhibiting herbicides like Accent, Beacon, Option to cause severe plant injury. See corn weed section of this handbook and product labels for specific herbicide interactions and precautions.
	Lorsban 15G, similar products	8 oz / 1000 ft	Varies	
	Counter 15G Counter 20G	6 - 8 oz./1000 ft 4.5 - 6.0 oz / 1000 ft	Varies	**NOTE**: Phorate / Thimet (phorate) 20G also are labeled but not listed. Apply as a band application only; in-furrow applications may cause plant injury and stand loss. Due to the risk of plant injury, Counter 15G is a better choice. Phorate / Thimet will interact with ALS inhibiting herbicides as noted for Counter.
	Force 3G	4 - 5 oz / 1000 ft of row	Varies	**NOTE**: Apply Lorsban 15G at planting as a T-band or in- furrow. For wireworms apply in-furrow or use an insecticide seed treatment with T-band applications. Lorsban 15G is compatible with ALS inhibitor herbicides. See corn weed section of this handbook and product labels for specific herbicide interactions and precautions.
	Regent 4SC	0.17 fl. oz.	Varies	**NOTE**: Apply Force 3G and bifenthrin products as a T-band or in-furrow. Force and bifenthrin do not interact with ALS herbicides.
	Seed Treatments Cruiser 250 (5FS) Cruiser 1250 (5FS) Cruiser 500 (5FS)	0.25 mg (ai)/seed 1.25 mg (ai)/seed 0.5 mg (ai)/seed 0.25 mg (ai)/seed	- - -	**NOTE**: Regent 4SC must be applied in-furrow using a liquid-injection system or sprayed in-furrow with flat-fan nozzles oriented with the row furrow. Supplemental label for control of wireworms and seed corn maggot only.
	Poncho 250 Poncho 500 Poncho 1250	0.5 mg (ai)/seed 1.25 mg (ai)/seed	- -	**NOTE**: Poncho and Cruiser are commercially applied seed treatments. The low rate may not provide good protection under severe infestations. These products also suppress aphids and chinch bugs on seedlings. Both insecticides available in combination with various fungicides under several brand names. Avicta Complete Corn contains Cruiser 500. Acceleron for corn contains Poncho 250 and Acceleron with VITiVO contains Poncho 500. **NOTE**: EPA has revoked all crop tolerances of all formulations of Furadan. Any crop receiving an application of Furadan after January 1, 2010 cannot be legally sold.

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Soil Insect Mid-season: Western corn rootworm	**At-Planting Treatment**			Western corn rootworm can be a problem in non-rotated corn in northern and central Georgia.
	Counter 15G	6 - 8 oz./1000 ft	varies	
	Counter 20G	4.5 - 6.0 oz / 1000 ft		At-Planting Treatments: Apply at-planting in a 6 to 7 inch band or T-band (if label permits) over the open seed furrow in front of the planter press wheel. **Counter** and **Force** can be applied in furrow. For no-till where no incorporation is obtained with the press wheel, use **Lorsban**, or **Counter** in-furrow at indicated rates.
	Force 3G	5 oz / 1000 ft of row	varies	
	Lorsban 15G	8 oz./1000 ft	varies	**NOTE: Counter** may interact with ALS herbicides like Accent and Beacon to cause plant injury. See corn weed control section of this handbook and product labels for herbicide interactions and precautions.
	Poncho 1250	1.25 mg (ai)/kernel	varies	
	Bt-corn traits (YieldGard-RW) (Herculex - RW)	Insecticide produced in plant		**NOTE:** Rates are for 30 to 40 inch row. See label for rates for specific row spacing. Most products cannot be used at the listed rate in less than 30 inch rows without exceeding the maximum labeled amount per acre. See label for narrow rows.
	Cultivation Time Treatments			**NOTE: Poncho 1250** available as a commercially applied seed treatment. Provides suppression only of western corn rootworms.
		8 oz./1000 ft		
	Counter 15G	4.5 - 6.0 oz / 1000 ft	varies	Cultivation Time treatments: Apply **Counter** in a 7-inch band over the row of seedling plants and lightly incorporate into soil. Counter can not be used if already applied at planting. See label for detailed instructions. Apply **Force 3G** by placing granules at the base of plants on both sides of the row and cover with 2 to 3 inches of soil. For liquid formulations of **Lorsban**, apply as a directed spray on both sides of base of the plants in front of the cultivator shovels. Proper application is critical for good control. Rates indicated are 40 inch rows.
	Counter 20G	4 - 5 oz./1000 ft.		
	Force 3G		varies	
	Lorsban 4E	3 pt.	1.5	
				NOTE: Hybrids with Bt-rootworm traits are available and are effective against mid-season rootworms but are NOT effective against other soil insects. Bt-rootworm traits have a 20% refuge requirement.
Soil Insects: Billbug, Sugarcane beetle	**At-Planting Treatment**			Beetles feed on seedling plants at or below soil line causing dead or dead-hearted plants. Generally problems worse in reduced tillage, when a winter cover crop is use. Billbugs are often associated with nutgrass infestation and sugarcane beetle is often associated with bahiagrass infestation.
	Counter 15G	8 oz./1000 ft	varies with row spacing	
	Counter 20G	4.5 - 6.0 oz / 1000 ft		
			-	
	Poncho 500 (sugarcane beetle only)	0.50 mg (ai)/seed	-	At-Planting treatments: Apply **Counter** as a T-band application. **Poncho 1250 and Cruiser 1250** are available only as a commercial seed treatment. Poncho 500 may also provide suppression of billbug. Poncho 250 also provides fair-good control of sugarcane beetle.
	Poncho 1250	1.25 mg (ai)/seed		
	Cruiser 1250	1.25 mg (ai)/seed	-	
	Post-emergence treatments			**NOTE: Counter** may interact with ALS herbicides like Accent and Beacon to ca use plant injury. See corn weed control section of this handbook and product labels for herbicide interactions and precautions.
	lambda cyhalothrin			
	Karate Z (2.08)	1.92 fl. oz	0.03	
	Warrior, Lambda T, Silencer, others (1CS)	3.84 fl. oz.	0.03	Post-emergence control: Stand loss of 5 to 10% justifies control. Direct liquid sprays at base of plant using at least 25 gal/acre of spray. Generally rescue treatments for sugarcane beetle are not effective.
	gamma cyhalothrin			
	Declare (1.25)	1.54 fl. oz.	0.015	
	Proaxis (0.5)	3.84 fl. oz.	0.015	

CORN INSECT CONTROL (continued)

PEST	MATERIAL AND FORMULATION	AMOUNT PER ACRE or PER 1000 FT OF ROW	LB. ACTIVE INGREDIENT PER ACRE	REMARKS AND PRECAUTIONS
Soil Insects Lesser cornstalk borer	**Preplant** chlorpyrifos Lorsban 4E, Chlorpyrifos, Chlorfos, others 4E **At-planting** Poncho 250 Poncho 500 chlorpyrifos Lorsban 15G, similar products Lorsban 4E, Chlorpyrifos, Chlorfos, others 4E **Post-emergence** chlorpyrifos Lorsban 4E, similar products lambda cyhalothrin Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) gamma cyhalothrin Declare (1.25) Proaxis (0.5)	 6 pt. 0.25 mg (a.i.)/seed 0.5 mg (a.i.)/seed 8 oz / 1000 ft 2.4 fl. oz. / 1000 ft or 2 pt / acre 2 pt 1.92 fl. oz. 3.84 fl. oz. 1.54 fl. oz. 3.84 fl. oz.	 3.0 - - Varies with row spacing 1.0 1.0 0.03 0.03 0.015 0.015	Lesser cornstalk borer larvae tunnel into the seedling plant below the soil line causing dead or dead-hearted plants Larvae spin silken tube at plant base. Hot, dry conditions, clean tillage, and late planting favor infestations. **Difficult to control after planting**; at-planting treatments are most effective. Pre-plant: broadcast before planting and immediately incorporate into top 4-6 inches of soil. Plant crop as soon as possible after treatment. Do not graze for forage within 14 days of application. At-Planting: Apply as a T-band and incorporate around seed. Post-emergence: Direct spray at full rate in a band around base of plants and lightly incorporate. Apply before larvae enter plants. A rescue treatment once larvae tunnel into plants is rarely effective. **NOTE**: Systemic seed treatments and Bt traits also may provide useful control.
Aphids (foliar treatments)	esfenvalerate Asana XL, Adjourn (0.66EC) bifenthrin Brigade, Capture, Fanfare, Discipline, others 2EC Dimethoate 2.67EC Dimethoate 4E, 400 methyl parathion Methyl 4EC Penncap-M 2FM	 5.8 - 9.6 fl. oz. 2.1 - 6 .4 fl. oz. 1 to 1.5 pt. 0.67 to 1 pt. 0.5 pt 2 to 3 pt.	 0.03 - 0.05 0.033 - 0.01 0.33 - 0.5 0.33 - 0.5 0.25 0.5 - 0.75	Aphids seldom require control on field corn in Georgia. Natural enemies, mainly lady beetles, usually move in and rapidly control aphid infestations. During silking and tasseling, treat if aphids are so abundant they appear likely to interfere with pollination. **NOTE: Poncho and Cruiser** seed treatments as applied at planting for soil insect control will control aphids on seedling corn for up to 30 days after planting.

CORN INSECT CONTROL (continued)

Armyworm - True (See fall armyworm in whorl)	Baythroid XL (1.0EC)	1.6 - 2 .8 fl. oz	0.013 - 0.022	Reduced tillage and grassy weeds favor infestations.
	Belt (4.0)	2 – 3 fl. oz.	0.063 - 0.094	Seedling plants, treat if 25% of plants show defoliation including window-panning type defoliation and larvae are present. Treat within 48 hours.
	bifenthrin			
	Brigade, Capture, Fanfare, Discipline, others 2EC	2.1 - 6 .4 fl. oz.	0.033 - 0.01	Whorl stage plants, treat when 30% of the plants are infested. Use ground equipment and apply at least 20 gallons of finished spray per acre directed down into the whorls. Nozzles with large droplet size will aid in control.
	Bt-trait corn (Herculex-I)	Insecticide produced in plant		
	Delta Gold 1.5EC	1.5 - 1 .9 fl. oz.	0.012 - 0.018	**NOTE**: Bt- corn, especially YieldGard-CB, generally not effective against true armyworm. See seed dealer for refuge requirements of Bt corn hybrids.
	Intrepid 2F	4 - 16 fl. oz.	0.06 - 0.25	
	Lannate 2.4 LV Lannate 90SP	0.75 - 1.5 pt. 0.25 - 0.5 lb.	0.445 0.445	
	chlorpyrifos			
	Lorsban, Chlorpyrifos, other brands 4E	2 pt.	1.0	
	methyl parathion			
	Methyl 4EC	0.5 pt.	0.25	
	Penncap-M 2FM	2 - 3 pt.	0.5 - 0.75	
	Tracer 4SC	2 - 3 pt.	0.062 - 0.093	
	Tombstone (2.0)	2.8 fl. oz.	0.044	
	lambda cyhalothrin			
	Karate Z (2.08)	1.28 - 1.92 fl. oz.	0.02 - 0.03	
	Warrior, Lambda T, Silencer, others (1CS)	2.56 - 3.84 fl. oz.	0.02 - 0.03	
	gamma cyhalothrin			
	Declare (1.25)	1.02 - 1.54 fl. oz.	0.01 - 0.015	
	Proaxis (0.5)	2.56 - 3.84 fl. oz	0.01 - 0.015	

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Chinch bug	**At-planting**			**At-planting treatments:** Low (250) rates of **Poncho and Cruiser** seed treatments as applied at planting for soil insect control may suppress chinch bugs for up to 25 days after planting. **Poncho 500, 1250 and Cruiser 1250** may control chinch bugs for several weeks after planting.
	Poncho 250	0.25 mg (a.i.)/seed	-	
	Poncho 500	0.5 mg (a.i.)/seed	-	
	Poncho 1250	1.25 mg (a.i.)/seed	-	
	Cruiser 250	0.25 mg (a.i.)/seed	-	
	Cruiser 1250	1.25 mg (a.i.)/seed	-	Counter 15G for suppression of light to moderate infestations.
	Counter 15G	6 - 8 oz/1000 ft	varies within row width	**Post-emergence treatments:** Treat if bugs become numerous and wilting leaves are noticed. Usually not important after seedling stage. Chinch bug infestations are difficult to control. Treatment after boot stage is rarely effective.
	Post-emergence			
	deltamethrin			
	Delta Gold 1.5EC	1.9 fl. oz.	0.022	
	chlorpyrifos			
	Lorsban, Chlorpyrifos, other brands 4E	2 pt.	1.0	
	lambda cyhalothrin			
	Karate Z (2.08)	1.92 fl. oz.	0.03	
	Warrior, Lambda T, Silencer, others (1CS)	3.84 fl. oz.	0.03	
	gamma cyhalothrin			
	Declare (1.25)	1.54 fl. oz.	0.015	
	Proaxis (0.5)	3.84 fl. oz.	0.015	
Cutworms	esfenvalerate			Several species including black, dingy and variegated cutworms. Reduced tillage conditions, plant residue, winter cover crops and winter grassy weeds favor infestation.
	Asana XL, Adjourn (0.66EC)	5.8 - 9.6 fl. oz.	0.03 - 0.05	
	Baythroid XL (1.0EC)	0.8 - 1 .6 fl. oz.	0.0065- 0.0125	**Pre-plant** broadcast application within 2 weeks of planting may provide helpful control of large cutworms. Use intermediate to highest rate listed. Most products can be tank mixed with a pre-plant herbicide.
	bifenthrin			
	Bifenthrin, Capture, Discipline, Fanfare 2EC	3.2 - 6 .4 fl. oz.	0.05 - 0.10	**At planting** apply insecticide as a band or T-band over the row. Check label for specific banding directions. Poncho 1250 as applied at planting for soil insect control also will reduce cutworm damage.
	Delta Gold 1.5EC	1.0 - 1.5 fl. oz.	0.012 - 0.018	
	chlorpyrifos			
	Lorsban, Chlorpyrifos, other brands 4E	2 pt.	1.0	**After emergence** treat if 5% of seedling show feeding or cutting damage. Apply as band over the row. For broadcast sprays, use ground equipment with at least 20 gal per ac re finished spray for thorough coverage.
	Mustang MAX, Respect (0.8EC)	2.8 - 4.0 fl. oz. per acre or 0. 16 fl. oz. per 1000 ft	0.014 - 0.025 -	**Bt-corn**: Herculex Bt corn may provide suppression of cutworm damage in seedling corn. YieldGard - CB corn is generally not effective against cutworms.
	Permethrin, others 3.2EC	4 to 8 fl. oz.	0.1 - 0.2	
	lambda cyhalothrin			
	Karate Z (2.08)	1.28 - 1.92 fl. oz.	0.02 - 0.03	
	Warrior, Lambda T, Silencer, others (1CS)	2.56 - 3.84 fl. oz.	0.02 - 0.03	
	gamma cyhalothrin			
	Declare (1.25)	1.02 – 1.54 fl. oz.	0.01 - 0.015	
	Proaxis (0.5)	2.56 - 3.84 fl. oz.	0.01 - 0.015	
	Tombstone (2.0)	1.6 – 2.8 fl. oz.	0.025 - 0.044	

CORN INSECT CONTROL (continued)

PEST	MATERIAL AND FORMULATION	AMOUNT PER ACRE or PER 1000 FT OF ROW	LB. ACTIVE INGREDIENT PER ACRE	REMARKS AND PRECAUTIONS
Fall armyworm, Corn earworm, other armyworms **(In whorls)**	esfenvalerate Asana XL, Adjourn (0.66EC)	9.6 fl. oz.	0.05	"BUDWORMS" IN WHORL: Most infestations are fall armyworms. Small larvae feed on leaves before moving to the whorl. Most difficult to control in the whorl. Do not base treatment solely on defoliation, verify that larvae are present.
	Baythroid XL (1.0EC)	2.8 fl. oz.	0.022	
	Belt (4.0)	3.0 fl. oz.	0.094	**NOTE**: For large infestations in whorl, tank mix an OP (Lannate, chlorpyrifos) and a pyrethroid (esfenvalerate, Baythroid, lambda or gamma cyhalothrin) insecticides for best results.
	Bt-trait corn (YieldGard-Corn borer) (Herculex-CB)	Insecticide produced in plant		**Seedling plants**, treat if 25% of plants show defoliation including window-panning type defoliation and larvae are present. Treat within 48 hours.
	Coragen (1.67SC) Prevathon (0.43)	3.5 - 5.0 14 - 20 fl. oz.	0.045 - 0.065 0.047 - 0.067	**Whorl-stage plants**, treat when 30% of the plants in the field are infested. Use ground equipment and apply at least 20 gallons of finished spray per acre directed down into the whorls. Nozzles with large droplet size will aid in control.
	chlorpyrifos Lorsban, Chlorpyrifos, other brands (4E)	2 pt.	1.0	**NOTE**: Bt corn borer traits, especially YieldGard-CB, may not prevent whorl damage by fall armyworms, armyworms and corn earworms under high pressure.
	Lannate 2.4 LV Lannate 90SP	1.5 pt. 0.5 lb.	0.445 0.445	**NOTE**: **Tracer** is most effective against small larvae.
	Tracer 4SC	2 - 3 pt.	0.062 - 0.093	
	lambda cyhalothrin Karate Z (2.08) Warrior, Lambda T, Silencer, others (1CS)	1.6 - 1 .92 fl. oz. 3.2 - 3 .84 fl. oz.	0.02 - 0.03 0.02 - 0.03	
	gamma cyhalothrin Declare (1.25) Proaxis (0.5)	1.54 3.84 fl. oz.	0.015 0.015	
Corn earworms, Fall armyworms **(In ears)**	Do not treat			Corn earworm and fall armyworm in ears are difficult to control. Usually not economical to keep these insects out of the ears using insecticides. Bt-trait in Genuity, VT Triple PRO, Agrisure Viptera, and SmartStax will reduce infestation and ear/kernel damage by corn earworm and fall armyworm. Other single Bt traits usually are not effective in preventing ear damage.
	Bt-trait corn Genuity VT Triple PRO Agrisure Viptera	Insecticide produced in plant		
European corn borer, Southwestern corn borer	esfenvalerate Asana XL, Adjourn (0.66EC)	7.8 - 9.6 fl. oz.	0.04 -0.05	EUROPEAN CORN BORER: Insecticides must be applied before larvae bore into stalks. Whorl stage (1st generation), treat if numerous egg masses are found in the field (treat just as eggs hatch) or when 50% of the plants have leaf feeding and live, small larvae are found. Tasseling stage (2nd generation), treat with when the corn is in the early-tasseling stage and moths are active in the field.
	Belt (4.0)	2 – 3 fl. oz.	0.063 - 0.094	
	bifenthrin Bifenthrin, Capture, Disipline, Fanfare, others 2EC	3.2 - 6 .4 fl. oz.	0.033 - 0.01	SOUTHWESTERN CORN BORER: Currently restricted to northwestern Georgia. Infestations usually worse in late-planted fields. Comments on European corn borer also apply to southwestern corn borer.
	Bt-trait corn (YieldGard-CB) (Herculex-I)	Insecticide produced in plant	-	**NOTE**: Bt-corn borer traits are very effective against 1st and 2nd generations of both borer species. See seed dealer for refuge requirements of Bt corn hybrids.
	Coragen (1.67SC) Prevathon (0.43)	3.5 - 5.0 14 - 20 fl. oz.	0.045 - 0.065 0.047 - 0.067	
	Intrepid 2F	4 - 16 fl. oz.	0.06 - 0.25	
	chlorpyrifos Lorsban, Chlorpyrifos, other brands 4E	2 pt.	1.0	
	lambda cyhalothrin Karate Z (2.08) Warrior, Lambda T, Silencer, others (1CS)	1.6 - 1 .92 fl. oz. 3.2 - 3 .84 fl. oz.	0.025 - 0.03 0.025 - 0.03	

CORN INSECT CONTROL (continued)

PEST	MATERIAL AND FORMULATION	AMOUNT PER ACRE or PER 1000 FT OF ROW	LB. ACTIVE INGREDIENT PER ACRE	REMARKS AND PRECAUTIONS
European corn borer, Southwestern corn borer (cont)	gamma cyhalothrin Declare (1.25) Proaxis (0.5)	 1.02 - 1.54 fl. oz. 3.2 - 3.84 fl. oz.	 0.0125 - 0.015 0.0125 - 0.015	
Grasshoppers	esfenvalerate Asana XL, Adjourn (0.66EC) Baythroid XL (1.0EC) Delta Gold 1.5EC chlorpyrifos Lorsban, Chlorpyrifos, other brands 4EC zeta-cypermethrin Mustang MAX, Respect (0.8EC) lambda cyhalothrin Karate Z (2.08) Warrior, Lambda T, Silencer, others (1CS) gamma cyhalothrin Declare (1.25) Proaxis (0.5)	 5.8 - 9 .6 fl. oz. 2.1 - 2 .8 fl. oz. 1.5 fl. oz. 0.5 - 1 pt. 2.72 - 4.0 fl. oz. 1.28 - 1.92 fl. oz. 2.56 - 3.84 fl. oz. 1.02 - 1.54 fl. oz. 2.56 - 3.84 fl. oz.	 0.03 - 0.05 0.0165 - 0.022 0.018 0.25 - 0.5 0.017 - 0.025 0.02 - 0.03 0.02 - 0.03 0.01 - 0.015 0.01 - 0.015	Generally a problem in reduced tillage and along field margin. Products listed are most effective against small to medium sized nymphs. Adults are difficult to control.
Beetle Adults: Cereal Leaf beetles, Flea beetles, Japanese beetle, Corn rootworm adults	Baythroid XL (1.0EC) bifenthrin Bifenthrin, Capture, Fanfare, others 2.0 Delta Gold 1.5EC Mustang MAX, Respect (0.8EC) Permethrin, others 3.2EC Sevin 80S Sevin XLR Plus, 4F lambda cyhalothrin Karate Z (2.08) Warrior, Lambda T, Silencer, others (1CS) gamma cyhalothrin Declare (1.25) Proaxis (0.5) Tombstone (2.0)	1.6 - 2 .8 fl. oz. 3.2 - 3.8 fl. oz. 1.5 - 1 .9 fl. oz. 2.72 - 4.0 fl. oz. 0.4 - 0 .8 fl. oz. 1.25 - 2.5 lb. 1 - 2 qt. 1.28 - 1.92 fl. oz. 2.56 - 3.84 fl. oz. 1.02 – 1.54 fl. oz. 2.56 - 3.84 fl. oz. 1.6 – 2.8 fl. oz.	0.0125 - 0.022 0.05 - 0.06 0.018 - 0.022 0.017 - 0.025 0.1 - 0.2 1.0 - 2.0 1.0 - 2.0 0.02 - 0.03 0.02 -0.03 0.01 - 0.015 0.01 - 0.015 0.025-0.044	LEAF FEEDING by CEREAL LEAF BEETLES, FLEA BEETLES, JAPANESE BEETLES: Leaf feeding on whorl stage plants usually in late spring. Cereal leaf beetles move out of maturing small grain fields and infest nearby corn fields. Usually only border rows are damaged and may need control. Treat if beetles become numerous and their feeding damage exceeds 25% leaf area loss. SILK FEEDING by JAPANESE BEETLE, CORN ROOTWORM ADULTS: Feeding on silks by beetles during pollination. Treat if 2 or more Japanese beetles or 5 or more rootworm beetles are present AND most silks are being clipped to within ½ inch of the ear tip.
Mites	bifenthrin Bifenthrin, Capture, Fanfare, others 2EC Comite II Dimethoate 2.67EC Dimethoate 4E, 400 Oberon 2SC	5.12 - 6.4 fl. oz. 2.5 - 3 3/8 pt. Tank mix with bifenthrin at 0.5 lb (AI) per acre 5.7 - 8.5 fl. oz.	0.08 - 0.10 1.875 - 2.53 0.087 - 0.13	MITES: Treat if infestations become widespread, leaf discoloration is evident, and 1 to 2 lower leaves are dying. Bifenthrin products: use 6.4 fl. oz. rate alone OR use 5.1 fl. oz. rate tank mixed with dimethoate at 0.5 lb (AI) per acre. Comite II: Only apply to dry foliage. Do not tank mix; do not use an oil-based surfactant. See table for additional restrictions. Oberon: Use 8.5 fl. oz. rate for large infestations. A NIS adjuvant is beneficial.

PEST	MATERIAL AND FORMULATION	AMOUNT PER ACRE or PER 1000 FT OF ROW	LB. ACTIVE INGREDIENT PER ACRE	REMARKS AND PRECAUTIONS
Stink bugs	**Brown Stink Bugs** methyl parathion Methyl 4EC Penncap-M 2FM bifenthrin Bifenthrin, Capture, Discipline, Fanfare, others 2EC **Green / S. Green Stink Bugs** Baythroid XL (1.0EC) bifenthrin Bifenthrin, Capture, Discipline, Fanfare 2EC Delta Gold 1.5EC methyl parathion Methyl 4EC Penncap-M 2FM Mustang MAX, Respect (0.8EC) lambda cyhalothrin Karate Z (2.08) Warrior, Lambda T, Silencer, others (1CS) gamma cyhalothrin Declare (1.25) Proaxis (0.5) Tombstone (2.0)	 1 pt. 2 - 3 pt. 6.4 fl. oz. 2.0 - 2 .8 fl. oz. 3.2 - 3 .8 fl. oz. 1.5 - 1 .9 fl. oz. 1 pt. 2 - 3 pt. 3.2 - 4 .0 fl oz. 1.6 - 1 .92 fl. oz. 3.2 - 3 .84 fl. oz. 1.28 - 1.54 fl. oz. 3.2 - 3.84 fl. oz. 2.0 - 2.8 fl. oz.	 0.5 0.5 - 0.75 0.1 0.015-0.022 0.05 - 0.06 0.018 - 0.022 0.5 0.5 - 0.75 0.02 - 0.025 0.025 - 0.03 0.025 - 0.03 0.0125 - 0.015 0.0125 - 0.015 0.031 - 0.044	SEEDLING STAGE: Treat if 5% of seedling plants have damage and stink bugs are present. Poncho 250, 500 and 1250 will suppress stink bug damage to seedlings for a few weeks after planting. EAR STAGE: Corn is most sensitive to stink bug injury during ear formation before silking. Treat if 25% (1/4) of plants in the ear zone are infested with stink bugs. KERNEL FILL: During kernel filling bugs feed through the husk damaging individual kernels. Treat if 50% (1/2) of ears are infested. **NOTE**: Use pyrethroids (Baythroid, Capture, Delta Gold, Mustang, Karate, Warrior, Declare, Proaxis, Tombstone) if southern green stink bug is present. These products are less effective against brown stink bug. **NOTE**: Do not apply **methyl parathion** during pollen shed. **NOTE**: Bidrin as used on cotton is not registered for use on corn.
Thrips	**Seedling Control** Cruiser Extreme 1250 Poncho 500 Poncho 1250 **Foliar Treatment** Lorsban, Chlorpyrifos, other brands (4E)	 1.25 mg (a.i.)/seed 0.50 mg (a.i.)/seed 1.25 mg (a.i.)/seed 1 - 2 pt.	 - - - 0.5 - 1.0	Treat if field is heavily infested and new leaves show excessive damage. Rarely causes yield loss on field corn. **Seed treatments provide suppression only; low (250) rate usually not effective.** **NOTE:** Tracer 4SC as applied for fall armyworm may provide helpful control.

Premixed or Co-Packed Insecticides: Products listed are available as premixes or co-packages of two insecticide active ingredients. User should check mixture labels for active ingredient, specific use rates, target pests, and precautions.

Brand name (active ingredients)	**Range of formulation rates**
Cobalt (chlorpyrifos, gamma-cyhalothrin)	13 - 42 fl. oz per acre
Consero (spinosad, gamma-cyhalothrin)	2.0 - 3.0 fl. oz per acre
Hero (zeta-cypermithrin, bifenthrin)	2.6 - 10.3 fl. oz per acre
Steed (zeta-cypermithrin, bifenthrin)	2.5 - 4.7 fl. oz. per acre
Besiege; Voliam Xpress (lambda-cyhalothrin, clorantraniliprole)	5.0 - 9.0 fl. oz per acre

Bt-TRAITS FOR CORN: Most corn hybrids now contain one or more Bt traits. Some traits target caterpillar pests including of corn borers, cutworms, fall armyworm and corn earworm in the whorl, and corn earworm and fall armyworm in the ears. Hybrids with two or three stacked traits for caterpillar control will be available for the 2011 season. Hybrids also may contain one or more Bt traits for control of western corn rootworms that attack roots during mid-season. Bt-rootworm traits are effective against mid-season rootworms but are **NOT effective** on seedlings against southern corn rootworm or other soil insects such as wireworms and white grubs. Depending on specific traits, refuge requirements for hybrids with Bt traits are either 20 or 50% of the corn acreage on a farm. Check with seed supplier for a complete list of resistant management restrictions. A table listing various combinations of Bt traits and relative efficacy against pests in Georgia is in the Insect Control section of the 2011 Georgia Corn Production Handbook and on the Georgia Grain web page.

INSECTICIDE USE RESTRICTIONS FOR FIELD CORN

Insecticide	Brand Name	Days to Grain Harvest	Days to Grazing or Silage Harvest	Restricted Entry Interval (REI, hours)	Maximum Amount Allowed Per Acre Per Crop	Remarks
bifenthrin	Brigade, Capture, Bifenthrin, Discipline, Fanfare (2E)	30	30	24	19.2 fl. oz.	
(beta) cyfluthrin	Baythroid XL (1.0EC)	21	0	12	11.2 fl. oz (4 applications)	Only 1 application from early dent to 21 days before harvest
carbaryl	Sevin	48	14	12	8 qt.	
chlorantraniliprole	Coragen (1.67SC) Prevathon (0.43)	14	14	4	15.4 fl. oz.	Do not apply less than 7 days apart.
chlorpyrifos	Lorsban 15G	35	14	12	13.5 lbs.	
chlorpyrifos	Lorsban 4E, generics	35	14	24	15 pt.	
clothianidin	Poncho 600 sold as Poncho 250 and Poncho 1250	-[1]	-[1]	0	seed treatment	Commercially applied; See label for plant back restrictions
cyfluthrin	Tombstone 1.0	21	21	12	11.2 fl. oz.	Only 1 application from early dent to 21 days before harvest.
deltamethrin	Delta Gold 1.5EC	21	12 21 for fodder	12	8.1 fl. oz. (5 applications)	Do not apply less than 21 days apart
dimethoate	Dimethoate	42	14	48	3 applications	Do not apply during pollen shed
esfenvalerate	Asana XL, Adjourn	21	-[1]	12	48 fl. oz.	Do not apply more than 0.25 lb (ai) per acre per season
fipronil	Regent 4SC	90	90	0	1 application at-planting	In-furrow application only; Do not apply through any type of irrigation system.
flubendiamide	Belt (4.0)	28	1	12	12 fl. oz./acre (4 applications)	
gamma cyhalothrin	Declare 1.25, Proaxis 0.5	21	21	24	0.48 pt 0.96 pt.	See label for additional restrictions
lambda cyhalothrin	Warrior, Silencer 1.0 Karate Z (2.08)	21	21	24	0.96 pt. 0.48 pt.	See label for restrictions
methozyfenozide	Intrepid 2F	21	21	4	64 fl. oz.	
methyl parathion	Methyl 4EC	12	12	96	–[1]	Do not apply during pollen shed
methyl parathion microencapsulated	Penncap-M	12	12	31 days	3 applications or 12 pt.	Do not apply during pollen shed if bees are foraging in the area to be treated.
permethrin (foliar)	Permethrin	30	0	12	24 fl. oz.	
methomyl	Lannate 2.4LV, 90SP	21	3	48	2.25 lb ai	
phorate	Phorate, Thimet 20G	30[2]	30	48	1 application; 6.5 lbs/acre	Do not apply in-furrow or after cultivation
propargite	Comite II	30	30	7 days	1 application	Only apply to dry foliage, Do not tank mix, do not use an oil-based surfactant, Use minimum of 20 GPA by ground and 5 GPA for aerial applications.

Insecticide Use Restrictions for Field Corn chart continued on next page.

INSECTICIDE USE RESTRICTIONS FOR FIELD CORN (continued)

Insecticide	Brand Name	Days to Grain Harvest	Days to Grazing or Silage Harvest	Restricted Entry Interval (REI, hours)	Maximum Amount Allowed Per Acre Per Crop	Remarks
spinosad	Tracer 4SC	28	3	4	6 fl oz	
spiromesifen	Oberon 2SC	30	5	12	17.0 fl. oz. and 2 applications	Use at least 10 GPA by ground and 5 GPA by air.
terbufos	Counter 15G	30[2]	30[2]	48	6.5 lbs.	Make only one application
tefluthrin	Force 3G	–[1]	–[1]	0	1 application	Granules must be incorporated into soil
thiamethoxam	Cruiser 5FS	–[1]	--	12	Seed treatment	Commercially applied; see label for plant back restrictions. Some formulations may contain fungicides.
zeta-cypermethrin	Mustang MAX, Respect	30	60	12	16 fl oz	

[1]Not listed.
[2]Not listed for at-planting application.

CORN NEMATODE CONTROL

Bob Kemerait, Extension Plant Pathologist

CHEMICAL	Rate/A	REMARKS AND PRECAUTIONS
AVICTA Duo Corn (seed treatment)		AVICTA Duo Corn is a combination of abamectin and thiamethoxam
Counter 15G	7	*Apply in furrow as row treatment. DO NOT exceed 8.7 pounds per acre regardless of row spacing. ALS-inhibiting herbicides should not be used if Counter 15G has been applied to the corn at planting.
Counter 20G	5.25	Apply in-furrow as row treatment. DO NOT exceed 6.5 pounds per acre regardless of row spacing. ALS-inhibiting herbicides should not be used if Counter 20G has been applied to the corn at planting.
PONCHO VOTiVO (seed treatment)		PONCHO VOTiVO is a systemic insecticide and biological seed treatment for use on corn to control insect pests and plant pathogenic nematodes listed on the label to include lance, root-knot, stubby-root, stunt, and sting nematodes.
Telone II	3 gal	Apply Telone II at least 7 days prior to planting by injecting 12 inches below the soil surface.

*NOTE: Granules should be incorporated for best results.

FIELD CORN DISEASE CONTROL

Bob Kemerait, Extension Plant Pathologist

Pest	Fungicide and Formulation	Amount Per Acre	Remarks and Precautions
Southern Corn Leaf Blight, Northern Corn Leaf Blight			NOTE: Use of fungicides to manage southern corn leaf blight is rarely needed in recent years. However, 2008 and 2009 were severe years for northern corn leaf blight. With the emergence of northern corn leaf blight as an important disease of corn in Georgia beginning in 2008, growers should recognize that fungicides can be an effective tool to minimize losses associated with this disease.
	tebuconazole 3.6F	4.0 - 6.0 fl oz/A	Do not apply tebuconazole within 21 days of harvest for forage or within 36 days of harvest for grain.
	Evito 480 SC	2.0-5.7 fl oz/A	Do not apply Evito after the R4 (early dough) stage or within 30 days of harvest.
	Evito T	4-9 fl oz/A	Do not apply Evito after the R4 (early dough) stage or within 36 days of harvest.
	Domark	4-6 fl oz/A	Do not apply more than 6 fl oz/A in order to reduce the potential for resistance. Do not apply Domark after corn growth stage "3" (milk). Do not use adjuvants in sprays made between V-8 and VT growth stage"
	Headline	9.0 - 12.0 fl oz/A	Do not apply Headline within 7 days of harvest.
	Headline AMP	10 fl oz/A	Headline AMP is a premix of the strobilurin fungicide Headline and the triazole fungicide Carumba
	Quadris	9.2 - 15.4 fl oz/A	Do not apply Quadris within 7 days of harvest.
	Quilt	7.0 - 14.0 fl oz/A	Do not apply Quilt within 30 days of harvest.
	Quilt Xcel	10.5 - 14.0 fl oz/A	Do not apply Quilt Xcel within 30 days of harvest.
	Stratego	10.0 - 12.0 fl oz/A	Do not apply Stratego within 30 days of harvest.
	Stretego YLD	4-5 fl oz/A	Stratego YLD is a combination of trifloxystrobin and prothioconazole. Stratego YLD should not be applied to field corn within 14 days of harvest.
	Tilt	2.0 - 4.0 fl oz/A	Do not apply Tilt within 30 days of harvest.
Southern Rust, Common Rust			Note: Growers do not need to apply fungicides to control common rust as this disease causes little damage. However, southern rust, especially in severe years, can cause heavy yield losses. For best results, fungicide applications should be initiated before disease enters the field or as soon as southern rust is detected after careful scouting..
	Evito 480 SC	2.0-5.7 fl oz/A	Do not apply Evito after the R4 (early dough) stage or within 30 days of harvest.
	Evito T	4-9 fl oz/A	Do not apply Evito after the R4 (early dough) stage or within 36 days of harvest.
	tebuconazole 3.6F	4.0 - 6.0 fl oz/A	Do not apply Folicur within 21 days of harvest for forage or within 36 days of harvest for grain. NOTE: Please see individual labels for tebuconazole products for specific information on use on field corn.
	Domark	6 fl oz/A	Do not apply more than 6 fl oz/A in order to reduce the potential for resistance. Do not apply Domark after corn growth stage "3" (milk). Do not use adjuvants in sprays made between V-8 and VT growth stage"
	Headline	6.0 - 9.0 fl oz/A	Do not apply Headline within 7 days of harvest.
	Headline AMP	10 fl oz/A	Headline AMP is a premix of the strobilurin fungicide Headline and the triazole fungicide Carumba
	Quadris	6.2 - 9.2 fl oz/A	Do not apply Quadris within 7 days of harvest.
	Quilt Xcel	10.5 - 14.0 fl oz/A	Do not apply Quilt Xcel within 30 days of harvest.
	Quilt	10.5 - 14 fl oz/A	Do not apply Quilt within 30 days of harvest.
	Stratego	7.0 - 10.0 fl oz/A	Do not apply Stratego within 30 days of harvest.
	Stretego YLD	4-5 fl oz/A	Stratego YLD is a combination of trifloxystrobin and prothioconazole. Stratego YLD should not be applied to field corn within 14 days of harvest.
	Tilt	4 fl oz/A	Do not apply Tilt within 30 days of harvest.

FIELD CORN WEED CONTROL

Eric P. Prostko, Extension Agronomist - Weed Science

USE STAGE/ HERBICIDE	BROADCAST RATE/ACRE AMOUNT OF FORMULATION	BROADCAST RATE/ACRE LBS ACTIVE INGREDIENT/A	REMARKS AND PRECAUTIONS
PRE-PLANT SOIL INCORPORATED			
butylate + safener (Sutan+) 6.7 E or	4.75 - 7.33 pts	3.97 - 6.14	Incorporate these herbicides 2 to 3" deep into the soil immediately after application. Use higher rate (7.33 pts/A) for suppression of bermudagrass and johnsongrass. Cultivation and/or postemergence herbicide treatments will be required to control escaped weeds. Can be tank-mixed with atrazine for additional broadleaf weed control. **NOTE: Repeated use of these herbicides can increase levels of herbicide degrading soil microorganisms. This can result in short-term or reduced weed control.** MOA = 8.
EPTC + safener (Eradicane) 6.7E	4.75 - 7.33 pts	3.97 - 6.14	
PREEMERGENCE			
acetochlor + safener			Controls most annual grasses (except Texas panicum) and certain small- seeded broadleaf weeds. Acetochlor can be tank-mixed with other broadleaf materials (atrazine) for improved weed spectrum. Only rotate to small grains, soybeans, or corn - 12 month restriction for other crops for Harness, 18 month restriction for Surpass. **Acetochlor is restricted for use in the Piedmont regions only.** Available in several pre-mixes with atrazine (Harness Extra, FulTime, Degree Xtra, Keystone, BreakfFree ATZ). Can be applied up to 11" tall corn. MOA = 15.
(Harness) 7EC	1.5 - 3.0 pts	1.3 - 2.6	
(Surpass) 6.4EC	2.0 pts	1.6	
(Harness) 20G	6.0 - 10.0 lbs	1.2 - 2.0	
(TopNotch) 3.2ME	2-3 qts	1.6-2.4	
(Degree) 3.8ME	2.25-4.25 pts	1.06-2.02	
(Breakfree) EC	1.5 - 2.5 pts		
alachlor + safener (Micro-Tech 4ME)	2.0 -2.75 qts	2.0 - 2.75	Controls most annual grasses (except Texas panicum) and certain broadleaf weeds. Under cool, wet weather conditions, stunting or crop injury expressed as malformed, knotted, twisted top growth may occur. Corn normally outgrows early season injury. Alachlor may be tank-mixed with atrazine or simazine. Alachlor can be applied up to 5" tall corn. Available in several pre-mixes with atrazine (Bullet, Lariat). MOA = 15.
metolachlor (Stalwart C, Parallel, Me-Too-Lachlor-II)	1.0 -1.33 pts	1.0 - 1.33	Controls most annual grasses (except Texas panicum) and certain broadleaf weeds. Fair to good control of yellow nutsedge. Under cool, wet weather conditions, stunting or crop injury expressed as malformed, knotted, twisted top growth may occur. Corn normally outgrows early season injury. Metolachlor may be tank-mixed with atrazine or simazine. Metolachlor can be applied up to 40" tall corn. Available in several premixes with atrazine (Bicep II Magnum, Cinch ATZ, Lexar, Lumax, Parallel Plus, Stalwart Xtra). The generic formulations of metolachlor (**Parallel, Stalwart, Me-Too- Lachlor**) have not provided the same length of residual control of certain weeds as similar rates of Dual Magnum formulations in some UGA field trials. MOA = 15.
S-metolachlor		0.96 - 1.27	
(Dual Magnum) 7.62E	1.0 - 1.33 pts		
(Dual II Magnum) 7.64E	1.0 - 1.33 pts		
(Cinch 7.64E)	1.0 - 1.33 pts		
dimethenamid-p (Outlook/Propel) 6L	10 -16 ozs	0.47 - 0.75	Rate is dependent on soil texture, organic matter, and CEC. Controls most annual grasses (except Texas panicum) and certain broadleaf weeds. Under cool, wet conditions, stunting or crop injury expressed as malformed, knotted, twisted top growth may occur. Dimethenamid may be tank-mixed with atrazine or simazine. Dimethenamid can be applied up to 12" tall corn. Available in several premixes with atrazine (Guardsman, Guardsman Max). MOA = 15.
flufenacet + metribuzin (Axiom) 68DF	13-22 ozs	0.44-0.75 +0.11- 0.19 0.55-0.94	Provides annual grass and small-seeded broadleaf control similar to acetochlor, alachlor, and metolachlor. Specific use rate dependent upon soil texture and organic matter. Corn should be planted 1-1.5" deep. Can be tank-mixed with atrazine for improved control of broadleaf weeds. Corn and soybeans can be planted anytime after an application of Axiom. A 12-month rotation restriction exists for the following crops: rye, sorghum, wheat, cotton, peanuts, and tobacco. Rotational restriction for onions is 18 months. Refer to metribuzin (Sencor) label for additional rotational information. Available in premix with atrazine (Axiom AT). MOA = 15 + 5.

USE STAGE/ HERBICIDE	BROADCAST RATE/ACRE AMOUNT OF FORMULATION	BROADCAST RATE/ACRE LBS. ACTIVE INGREDIENT/A	REMARKS AND PRECAUTIONS
PREEMERGENCE (cont'd)			
atrazine (numerous trade names) 80W 90DG 4L	 2.5 - 3.0 lbs. 2.25 - 2.66 lbs. 2.0 - 2.5 qts.	 2.0 - 2.4 2.0 - 2.4 2.0 - 2.5	Refer to herbicide table and label for specific product. Good to excellent control of most annual broadleaf weeds. Does not usually provide adequate control of Texas panicum or fall panicum. Atrazine will often fail to provide extended control of crabgrass and late season control of sicklepod and morningglories. Atrazine may be tank-mixed with metolachlor, alachlor, simazine. **Do not use more than 2.5 lbs ai/A/year of atrazine. MOA = 5.**
simazine (numerous trade names) 80W 90DG 4L	 2.5 - 3.0 lbs 2.2 - 2.6 lbs. 2.0 - 2.5 qts.	 2.0 - 2.4 2.0 - 2.3 2.0 - 2.5	Refer to herbicide table and label for specific product. Similar to atrazine but requires more rainfall for activation and is generally less effective in control of certain broadleaf weeds. Good control of crabgrass and fall panicum. Simazine may be tank-mixed with atrazine, alachlor or metolachlor. MOA = 5.
flumetsulam (Python) 80 WDG	0.80 - 0.89 oz.	0.04 - 0.045	Python may be used preplant, preemergence or at the spike stage of corn for broadleaf weed control. Can be mixed with atrazine and other materials labeled for use on field corn to increase weed control spectrum. May be followed with corn, soybeans or wheat. Rotational restrictions for the following year include peanuts and small grains - 4 months, canola - 26 months, cotton - 18 months, tobacco - 9 months. Refer to label for additional rotation restrictions. Due to possible crop injury, flumetsulam cannot be used when Counter (terbufos) or Thimet (phorate) insecticides are applied. All other soil insecticides should be applied in a T-band or band to avoid potential crop injury. This precaution applies to all prepackaged tank mixtures that contain flumetsulam (Hornet) **Use on soils with less than 1.5% OM may result in crop injury.** MOA = 2.
CHEMIGATION			
alachlor (Micro-Tech 4ME) metolachlor (Stalwart C, Parallel, Me-Too-Lachlor-II) s-metolachlor (Dual Magnum, Dual II Magnum, Cinch) butylate + safener (Sutan+ 6.7E) pendimethalin (Prowl 3.3 EC) EPTC + safener (Eradicane 6.7E)			May be applied by injection through center pivot irrigation systems. Use at normal rates recommended for conventional methods of application. Apply after planting but before crop emergence. Requires proper system calibration and safety devices (check valves, cutoff switches, etc.) to provide effective weed control and prevent environmental contamination. The generic formulations of metolachlor (**Parallel, Stalwart, Me-Too-Lachlor**) have not provided the same length of residual control of certain weeds as similar rates of Dual Magnum formulations in some UGA field trials.
POSTEMERGENCE: OVER-THE-TOP			
atrazine (numerous trade names) 80W 90DG 4L	 1.88 - 2.5 lbs. 1.67 - 2.22 lbs. 1.5 - 2.0 qts.	1.5 - 2.0	Refer to herbicide table and label for specific information. Use low rate for broadleaf weeds. Use high rate for mixed infestations of grasses and broadleaf weeds. Application with crop oil or crop oil concentrate (1 qt/A) will improve control. Can be applied up to 12" tall corn. Poor control may result on sicklepod more than 2 in. tall and on grasses beyond the 2-leaf stage. Do not apply with fluid fertilizer. If no atrazine was applied preemergence, apply no more than 2.0 lb/ai/A. If a preemergence treatment was used, do not exceed a total of 2.5 lbs/ai/A calendar year. MOA = 5.
pendimethalin (Prowl/Pendimax 3.3EC) (Prowl H_20 3.8 ACS) + atrazine (numerous trade names) 4L*	1.8 - 2.4 pts. 2 pts. + 1.5 - 2.0 qts.	0.75 - 1.0 0.95 + 1.5 - 2.0	Refer to herbicide table and label for specific product. Apply over-the-top after corn emergence but when weeds are less than 1 in. tall. For control of seedling grasses apply when no more than 1/2 in. tall. Consistency of control is contingent on timing of rainfall or irrigation after application. Do not use with fluid fertilizers after crop emergence. Pendimethalin or tank mixtures including pendimethalin may cause crop injury expressed as restricted root growth and crop stunting. Potential for injury is greatest on sand or loamy sand soils under cool, wet conditions. Plant corn at least 1.5 in. deep when using pendimethalin. Can be applied up to 12" tall corn. MOA = 3 + 5.

USE STAGE/ HERBICIDE	BROADCAST RATE/ACRE: AMOUNT OF FORMULATION	BROADCAST RATE/ACRE: LBS. ACTIVE INGREDIENT/A	REMARKS AND PRECAUTIONS
POSTEMERGENCE: OVER-THE-TOP (cont.)			
bentazon (Basagran) 4SC	1.5 - 2.0 pts	0.75 - 1.0	Controls yellow nutsedge, cocklebur, bristly starbur, and certain other broadleaf weeds. Adjust rate according to weed size as noted on the label. A second application within 7 to 10 days will often be required for yellow nutsedge control. Add a crop oil concentrate at 1 qt/A. Rain-free period is 4 hours. MOA = 6.
bromoxynil (Buctril) 2EC	1.0 - 1.5 pts	0.25 - 0.38	Can be applied in corn from the 4th leaf stage until tassel emergence. Controls cocklebur, bristly starbur, morningglories, and certain other broadleaf weeds when less than 3 in. tall. Adjust rate according to weed size and species as noted on label. Temporary corn leaf scorch may occur. Spray additives can cause increased leaf burn. Available in premix with atrazine (Buctril + Atrazine). Rain-free period is 1 hour. MOA = 6.
carfentrazone (Aim 2EC)	0.50 - 1.0 ozs.	0.008 - 0.016	For the control of pigweed, annual morningglory species (except smallflower), and tropical spiderwort. Can be applied over the top of corn until the V8 stage of growth. Aim will cause crop injury in the form of leaf speckling and necrosis but this injury will not affect yield. Use in combination with a crop oil concentrate @ 1% v/v (1 gal/100 gals). Aim can be tank-mixed with glyphosate (**GR corn hybrids only**), 2,4-D, atrazine, and Accent. Refer to label for a more complete list of approved tank-mixes. **Rain-free period is 6 to 8 hours.** MOA = 14.
2,4-D (numerous trade names) 3.8 lb/gal	0.5 - 1.0 pt	0.24 - 0.48	Refer to herbicide table and label for specific product . May be applied over-the-top of the crop and weeds until corn is 5 to 8 in. tall. Use only as a directed spray after corn is 8 in. tall. Do not apply after tassels appear. No spray additive is required. Corn is most subject to injury if it is rapidly growing and if soil moisture and temperature conditions are high or from over-the-top applications. If soil moisture levels and temperatures are high, use no more than 0.25 lb/ ai/A. To minimize drift hazards where 2,4-D sensitive crops are present, use amine formulations and observe drift control precautions noted on label. MOA = 4.
pendimethalin (Prowl/Pendimax 3.3EC) (Prowl H_20 3.8 ACS) trifluralin (numerous trade names) 4 lb/gal	1.2 - 1.8 pts 1.5 pts 1.0 - 1.5 pts	0.5 - 0.75 0.71 0.5 - 0.75	**CULTI-SPRAY TECHNIQUE (Postemergence Incorporated)** These treatments will provide residual control of annual grasses, including Texas panicum. They will not control existing grasses. They should be used to augment other weed control tactics. When using either of the treatments, the following steps must be followed. 1. The herbicides must be applied to weed-free soil. 2. Corn brace roots must be protected by soil thrown to the base of the stalk with a sweep or rolling cultivator prior to application. 3. The herbicides can be applied over-the-top or post-directed, depending on corn size. 4. A shallow, follow-up cultivation is required after application to minimize herbicide loss. Rainfall or irrigation amounts of 0.5-1.0" can be used instead of mechanical cultivation. 5. Apply pendimethalin when the corn is at least 4" tall until layby. Apply trifluralin when the corn is in the 2 true leaf stage until it reaches 30" in height. MOA = 3.
dicamba (Banvel, Clarity, Sterling, Vision, etc.) 4 lb/gal	8 ozs	0.25	May be applied either over-the-top up to 8 in. corn then as a directed spray. Directed sprays are less likely to result in crop injury or drift hazards and will improve weed coverage in larger corn. Refer to label. Do not use crop or petroleum oils. **DO NOT** apply after corn is 36 in. tall or within 15 days of tassel emergence, whichever occurs first. Where dicamba-sensitive crops such as cotton, soybeans, tobacco and vegetables are near treatment area, observe the following precautions to minimize drift hazards. 1. Use coarse sprays and spray pressure of less 20 psi. 2. Apply **only** as a directed spray. 3. DO NOT apply if maximum daily temperature is expected to exceed 85°F. 4. DO NOT apply if winds exceed 5 mph and are blowing in the direction of the sensitive crop. **Rain-free period is 4 hours.** MOA = 4.

USE STAGE/ HERBICIDE	BROADCAST RATE/ACRE AMOUNT OF FORMULATION	BROADCAST RATE/ACRE LBS ACTIVE INGREDIENT/A	REMARKS AND PRECAUTIONS
POSTEMERGENCE: OVER-THE-TOP (cont.)			
dicamba + diflufenzopyr + isoxadifen (Status) 56WDG	5 - 10 ozs	0.125-0.25 + 0.05-0.10 0.175-0.350	Will control many annual broadleaf weeds. Include a NIS @ 0.25% v/v and AMS @ 5-17 lbs/100 gals. Can be applied from 4" tall corn (V2) to 36" tall corn (V10). Status can also be tank-mixed with Roundup or Liberty when used on RR or LL corn hybrids only. The normal use rate when tank-mixed with these herbicides is 5 oz/A. **Status should not be tank-mixed with Dual Magnum, Harness, Outlook, Surpass, Lorsban, 2,4-D, Stinger.** Rotational crops can be planted 120 days after application with the following exception: When Status is applied at 5 oz/A or less and field receives at least 1" of rainfall or irrigation, the following crops can be planted 30 days after application: alfalfa, cereal grain crops, cotton, grain sorghum, soybeans. Field corn can be re- planted 7 days after application. **Rain-free period is 4 hours.** MOA = 4 + 19.
clopyralid (Stinger/Spur) 3.0 lb/gal	4 - 8 oz	0.094 - 0.19	Controls many annual broadleaf weeds including ragweed, sicklepod, cocklebur, and pigweeds. Can be used from emergence through 24 inch tall corn. May cause severe injury to in-bred lines or breeding stock. Rotational restrictions include: soybeans, canola, grain sorghum, sweet corn - 10.5 months, cotton and all other crops - 18 months. MOA = 4.
halosulfuron (Profine, Sandea) 75 DF	0.67 - 1.33 oz	0.032 - 0.063	Controls many annual broadleaf weeds and nutsedge. Can be applied over-the-t op from spike stage through layby stage of corn. Use higher rates for nutsedge control and larger weeds. Can be tank-mixed with Banvel, Accent, 2,4-D, Buctril, Beacon and atrazine. The use of a non- ionic surfactant or crop oil is recommended. May be applied in a split application but do not exceed 2.67 oz/ acre/year. Rotational restrictions include the following: barley, oats, rye, wheat - 2 months; cotton - 4 months; peanuts - 6 months; soybeans - 9 months; onions - 18 months. Refer to product label for additional crop rotation information. **Rain-free period is 4 hours.** MOA = 2.
primisulfuron + prosulfuron (Exceed) 57 DF	1.0 oz.	0.018 + 0.018 0.036	Provides postemergence and residual control of many annual broadleaf weeds and certain grasses. Apply after corn reaches 4 inches in height and before 48 inches. Refer to label for specific weed sizes but as a general rule apply before weeds reach greater than 4-6 inches high. The use of a non-ionic surfactant or crop oil is recommended. May be tank- mixed with Banvel, 2,4-D, Beacon. atrazine, Buctril, or Accent. **DO NOT** apply to corn treated with Counter insecticide due to severe crop injury or mortality. Do not apply Exceed within 7 days to corn treated with foliar applied organophosphate insecticides. Do not plant cereal grains within 3 months; soybeans, canola, cotton, or tobacco within 10 months after application. **DO NOT USE EXCEED ON PIONEER 3085, 30F33 and 30F34**. MOA = 2.
nicosulfuron (Accent) 75DF (Accent Q) 54.5 WDG (includes crop safener) (Nic-It) 2SC	0.67 oz 0.9 oz 2.0 oz	0.031	Controls many annual and perennial grasses, including johnsongrass. **DO NOT** apply to corn treated with Counter insecti¬cide due to severe crop injury or mortality. Can be applied over-the-top of corn up to 20 inches tall or before the V6 stage (*whichever is more restrictive*) and post-dire¬cted up to 36 inches tall. A nonionic surfactant (0.¬25% v/v) or crop oil concentrate (1% v/v) is required. Do not apply Accent within 7 days to corn treated with foliar applied organophosphate insecticides or with herbicides con¬taining bentazon or 2,4-D. **DO NOT** apply organophosphate insecticides within 3 days after applying Accent. Refer to manufacturer's label for sprayer cleanup. **DO NOT** apply within 30 days of harvest. **Accent Q** formulation contains a crop safener (isoxadifen). Rotational restrictions include the following: soybeans - 0.5 months; winter wheat, barley, rye - 4 months; oats - 8 months; cotton, sorghum, peanuts, tobacco - 10 months. **Rain-free period is 4 hours.** MOA = 2.
primisulfuron (Beacon) 75WG	0.76 oz	0.035	**Single Application** Controls many annual and perennial grasses, including johnsongrass. **DO NOT** apply to corn treated with Counter insecticide due to severe crop injury or mortality. Apply over-the-top to 4 to 20 inch corn. A nonionic surfactant (0.25% v/v) or crop oil concentrate (1 qt/A) is required. Do not use liquid fertilizer as the spray carrier. Do not apply Beacon within 10 days to corn treated with foliarly applied organophosphate insecticides or with herbicides containing bentazon or 2,4 -D. Some corn varieties may be sensitive to Beacon. Refer to manufacturer's label for a complete listing. Do not apply within 60 days of harvest for grain, 30 days for forage. **Split Application** For hard to control weeds, applications of 0.38 oz/A can be made one time prior to the corn reaching 20 in. in height and a second time prior to tassel emergence. Follow all precautions listed for single application. **DO NOT** exceed 0.76 oz/A/yr. **Rain-free period is 4 hours.** MOA = 2.

USE STAGE/ HERBICIDE	BROADCAST RATE/ACRE AMOUNT OF FORMULATION	BROADCAST RATE/ACRE LBS ACTIVE INGREDIENT/A	REMARKS AND PRECAUTIONS
POSTEMERGENCE OVER-THE-TOP (cont'd)			
nicosulfuron + rimsulfuron + crop safener (Steadfast Q) 37.7WDG	1.5 oz	0.024 + 0.012	Can be applied over-the-top of corn up to 20" tall and exhibiting up to and including 6 leaf-collars. When tank-mixed with atrazine, can only be applied to corn that is 12" tall or less. Use in combination with a NIS @ 0.25% v/v or COC @ 1% v/v + ammonium-nitrogen fertilizer (2 qt/A UAN or 2 lb/A AMS). **Do not tank-mix with Basagran, 2,4-D, Lorsban, parathion, and malathion. Do not use on corn that was previously treated with Counter, Lorsban, and Thimet.** Rotational Restrictions: field corn = 0 months; soybeans = 15 days; small grains = 4 months; cotton = 10 months; sorghum/peanut = 10 months (soil pH < 6.5). **Steadfast Q** contains a crop safener (isoxadifen). **Rain-free period = 4 hours**. MOA = 2 + 2.
rimsulfuron + thifensulfuron + crop safener (Resolve Q) 22.4DG	1.25 oz	0.014 + 0.0003	Apply postemergence to corn that is up to 20" tall for the control of many annual grasses and broadleaf weeds. Will also provide some residual control. Do not apply to corn taller than 20" or exhibiting 7 or more leaf collars. Use in combination with a NIS @ 0.25% v/v or COC @ 1% v/v + ammonium-nitrogen fertilizer (2 qt/A UAN or 2 lb/A AMS). Can be tank-mixed with atrazine, glyphosate (RR corn) or Ignite (LL corn). **Do not apply Resolve Q to corn that has been previously treated with an OP insecticide such as Counter, Lorsban, or Thimet**. Rotation restrictions: field corn = 0 months; STS soybeans = 1 month; soybeans = 10 months; cotton = 1 month; wheat = 3 months; sorghum = 10 months; peanuts = 18 months. **Resolve Q** contains a crop safener (isoxadifen). *In some UGA field trials, Resolve Q has not been as effective as Accent (nicosulfuron) in controlling Texas panicum.* **Rain-free period = 4 hours.** MOA = 2 + 2.
foramsulfuron + crop safener (Option) 35WDG	1.5-1.75 ozs	0.033-0.038	Can be applied broadcast in corn from 0 to 16" or when corn is in the emergence to V5 stage of growth. Use drop nozzles when the corn is 16- 36' tall. Option will provide good to excellent control of many annual grasses and johnsongrass. Must be applied with a methylated or ethylated seed oil (1.5 pts/A) and nitrogen fertilizer (28 or 32% UAN at 1.5-2 qts/A or AMS at 1.5-3.0 lbs/A). Sequential applications can be made but the total rate cannot exceed 3.5 ozs/A/season. Option can be tank-mixed with certain herbicides (atrazine, Permit, others) and insecticides (Ambush, Asana, Pounce, Warrior) but should not be applied in a nitrogen solution. Refer to label for specific tank-mix directions. **Option** contains a crop safener (isoxadifen). **DO NOT USE OPTION IF THE FOLLOWING SOIL INSECTICIDES WERE USED: COUNTER, DYFONATE, AND THIMET.** Crop rotation restrictions: corn - 7 days; soybeans - 14 days; all other crops - 60 days. Option is rainfast 2 hours after application. *In some UGA field trials, Option has not been as consistent as Accent for the control of Texas panicum. However, corn yields have been equivalent.* MOA = 2.
mesotrione (Callisto 4SC)	3 ozs	0.094	May be useful for the postemergence control of escaped Palmer amaranth (pigweed) in situations were 2,4-D use would be undesirable or glyphosate, ALS, or triazine-resistance is suspected. Callisto will also provide residual control. Apply before Palmer amaranth exceeds 5" in height. **Do not use if the corn has been treated with a soil application of Counter or Lorsban**. Corn may be treated up to 30" tall or the 8-leaf stage of growth. Use in combination with a COC (1% v/v) and UAN (2.5% v/v) or AMS (8.5 lbs/100 gals). Callisto can be tank mixed with Accent, atrazine, Liberty, Lightning, Basagran, Buctril, Dual Magnum, Bicep II Magnum, Steadfast, or Warrior. Crop injury is increased when tank-mixed with EC formulations of grass herbicides such as Dual Magnum. Do not tank-mix with carbamate or organophosphate insecticides. Rotational restrictions: field corn, grain sorghum = 0 months; small grains and sugarcane = 4 months; soybeans, cotton, peanuts, sunflowers, canola, tobacco = 10 months; other crops = 18 months. Temporary bleaching may occur under extreme weather conditions or when the crop is suffering from stress. Sold in various pre-mixes with atrazine + Dual Magnum (Lexar, Lumax). Rain-free period is 1 hour. Callisto does **not** provide effective control of Texas panicum or sicklepod. **Callisto Xtra** is a premix formulation of Callisto (0.5 lb/gal) + atrazine (3.2 lb/gal) MOA = 28.

USE STAGE/ HERBICIDE	BROADCAST RATE/ACRE AMOUNT OF FORMULATION	BROADCAST RATE/ACRE LBS ACTIVE INGREDIENT/A	REMARKS AND PRECAUTIONS
POSTEMERGENCE OVER-THE-TOP (cont'd)			
tembotrione + crop safener (Laudis 3.5SC)	3 ozs	0.082	May be useful for the postemergence control of escaped Palmer amaranth (pigweed) in situations were 2,4-D use would be undesirable or glyphosate, ALS, or triazine-resistance is suspected. Apply postemergence to field corn from emergence to V8 stage of growth. Two applications can be made if needed (14 days apart). Can be tank-mixed with the following herbicides: atrazine, Liberty, Define, glyphosate, Accent, Option, Steadfast, Buctril. Use a methylated seed oil (MSO) at 1% v/v and nitrogen (1.5 qt/A UAN or 1.5 lb/A AMS). **Rain-free period is 1 hour.** Crop rotation restrictions: small grains = 4 months; soybeans = 8 months; cotton and sorghum = 10 months; peanut = 12 months. *In some UGA field trials, Laudis has not been as effective as Accent (nicosulfuron) in controlling Texas panicum.* MOA = 28.
topramezone (Impact) 2.8SC	0.75-1.0 oz	0.016-0.022	May be most useful in areas where atrazine-resistant Palmer amaranth is a problem. Can be applied postemergence up until 45 days before harvest. Tank- mix with atrazine, glyphosate (RR corn), or Ignite (LL corn). Use in combination with MSO or COC @ 1% v/v and 1.25% v/v UAN or AMS (8.5-17 lbs/100 gallons water). Rotation restrictions: wheat = 3 months; canola, cotton, peanut, soybean, sorghum = 9 months; tobacco = 18 months. **Rain-free period = 1 hour:** MOA = 27.
thiencarbazone + tembotrione + crop safener (Capreno) 3.45SC	3 oz/A	0.013 + 0.0675	Contains same active ingredient as Laudis. Apply postemergence for the control of Palmer amaranth and certain annual grasses such as crabgrass and Texas panicum. Capreno can be applied over-the-top from V1 until V6 stage of growth and post-directed from V6-V7 stage of growth. Can be tank-mixed with atrazine, glyphosate (RR corn), or Ignite (LL corn). Use in combination with a COC @ 1% v/v and 1.5 qt/A UAN or 1.5 lb/A AMS. **Do not use on field corn treated with OP soil insecticides.** Crop rotation restrictions: wheat = 4 months; cotton, soybean, sorghum = 10 months; peanut = 12 months; canola, tobacco = 18 months. **Rain-free period = 1 hour.** Capreno contains a crop safener (isoxadifen). MOA = 2 + 27.
rimsulfuron + mesotrione + crop safener (Realm Q) 38.75DG	4 oz/A	0.019 + 0.078	May be most useful in areas where atrazine-resistant Palmer amaranth is a problem. Realm Q can be applied postemergence to corn that is up to 20" or V7, whichever is more restrictive. Use in combination with a COC @ 1% v/v or NIS @ 0.25% v/v and 2 qt/A UAN or 2 lb/A AMS. Can be applied in combination with atrazine, glyphosate (RR corn), or Ignite (LL corn). **Do not use on field corn treated with OP soil insecticides.** Crop rotation restrictions: wheat = 4 months; cotton, canola, sorghum, soybeans, sunflower = 10 months; peanut and tobacco = 18 months. Rain-free period = 4 hours. **Realm Q** contains a crop safener (isoxadifen). MOA = 2 + 27.
acetochlor (Warrant) 3ME	1.25-1.5 qt	0.94 - 1.13	Apply over-the-top from emergence up to 30" tall field corn for residual control of tropical spiderwort, crabgrass, and Palmer amaranth. Can be tank-mixed with glyphosate for use in RR corn systems. Warrant does not control emerged weeds. MOA = 15.
pyraflufen (ET) 0.208 lb/gal	0.5-1.0 oz	0.0008-0.0016	Can be applied over-the-top of field corn up to V4 stage of growth. Can be tank-mixed with glyphosate for use in RR corn to improve the control of annual morningglories. ET can also be applied post-directed or with drop nozzles up until the V8 stage of growth. **Rain-free period = 1 hour. Do not use a COC adjuvant.** MOA = 14.
POSTEMERGENCE - HERBICIDE TOLERANT HYBRIDS: PLEASE NOTE = Herbicide selection should not be the dominant factor in determining varietal selection. Consult your local extension personnel or seed dealer when choosing a hybrid(s) that is best adapted for your area and farming operation.			
imazethapyr (Pursuit) 2AS 70DG	4 fl oz 1.44 oz	0.063	**USE ONLY ON CLEARFIELD CORN HYBRIDS (IR/IT). APPLICATIONS OF PURSUIT TO NON-TOLERANT HYBRIDS WILL RESULT IN SEVERE CROP INJURY AND/OR CROP DEATH!!** Can be applied pre-plant incorporated, preemergence or postemergence for the control of many annual broadleaf and grass weeds. Provides good control of wild poinsettia, morningglories, and pigweeds. **DO NOT** tank-mix with Accent or Beacon. Do not apply within 45 days of grain or silage harvest. DO NOT apply to "IT-Corn" varieties treated with Counter or Thimet insecticides due to severe crop injury or mortality. Rotation restrictions include: 4 months - wheat; 8.5 months - field corn (other than Clearfield corn); 9.5 month - tobacco; 18 months - cotton , sorghum, sunflower, sweet corn. Consult label for further rotation restrictions. Rain-free period is 1 hour. MOA = 2.

USE STAGE/ HERBICIDE	BROADCAST RATE/ACRE AMOUNT OF FORMULATION	BROADCAST RATE/ACRE LBS ACTIVE INGREDIENT/A	REMARKS AND PRECAUTIONS
POSTEMERGENCE - HERBICIDE TOLERANT HYBRIDS: PLEASE NOTE = Herbicide selection should not be the dominant factor in determining varietal selection. Consult your local extension personnel or seed dealer when choosing a hybrid(s) that is best adapted for your area and farming operation. (cont.)			
imazethapyr + imazapyr (Lightning) 70DG	1.28 ozs	0.042 + 0.014 0.056	**USE ONLY ON CLEARFIELD CORN HYBRIDS (IR/IT). APPLICATIONS OF LIGH TNING TO NON-TOLERANT HYBRIDS WILL RESULT IN SEVERE CROP INJURY AND/OR CROP DEATH.** Can be applied early-postemergence from spike to 20". Provides broad-spectrum control of many annual broadleaf and grass weeds when applied at the appropriate stage of growth (*weeds less than 3-4" tall*). Must be used in combination with a non-ionic surfactant (1qt/100 gal) and a nitrogen-based fertilizer such as liquid 2 8% N (1-2 qts/A). Can only be applied once per growing season. Any soil insecticide can be used with IR hybrids but only Counter CR or Thimet in a banded application can be used on IT hybrids. Rotational restrictions include: 4 months - wheat , rye; 8.5 months - field corn (other than Clearfield corn); 9 months - soybeans; 9.5 months - peanuts, tobacco. **Cotton can be planted 9.5 months after application only if greater than 16" of rainfall and/or irrigation occurs after application through October . If the above criteria are not met, the cotton rotation interval is 18 months.** Consult label for further rotation restrictions. Rain-free period is 1 hour. MOA = 2.
glufosinate (Ignite 280) 2.34SL	22-29 oz	0.40-0.53	**USE ONLY ON "LIBERTY-LINK" CORN HYBRIDS. APPLICATIONS OF IGNITE TO NON-TOLERANT HYBRIDS WILL RESULT IN SEVERE CROP INJURY AND/OR CROP DEATH!!** Can be applied postemergence from crop emergence until the corn is 24" tall or in the V7 stage of growth. For corn 24"-36" tall, only apply Ignite with drop nozzles and avoid spraying directly into the whorl or leaf axils. Broad-spectrum material with limited systemic activity. Possesses no soil residual activity. Effective on a number of grassy weeds including Texas panicum and several broadleaf species including sicklepod and morningglories. **Thorough coverage is essential - use with at least 15-20 gallons water/ acre.** Should be tank-mixed with atrazine for broader spectrum and more consistent control. No major rotation restrictions exist with Ignite. Do not apply within 70 days of grain harvest or 60 days for silage. Requires the use of spray grade ammonium sulfate at 3 lbs/A or 17 lbs/100 gallons. Weak on arrowleaf sida. Do not apply more than 2 applications of Ignite (10-14 day interval). Do not apply more than 44 oz/A of Ignite on corn per growing season. **Applications of Ignite should be made between dawn and 2 hours before sunset for optimum weed control. Rain-free period is 4 hours.** MOA = 10.
glyphosate + *S*-metolachlor (Sequence) 5.25 lbs/gal	2-2.5 pts	0.56-0.70 + 0.75-0.94	**FOR USE ONLY ON ROUNDUP READY CORN HYBRIDS APPLICATIONS OF GLYP HOSATE TO NON-TOLE RANT HYBRIDS WILL RESULT IN SEVERE CROP INJURY AND/OR CROP DEATH!!** Can be applied from corn emergence until the corn plants reach 30 " in height. Do not exceed 2.5 pts/A in a single application or 5.0 pts total/A/year. Very effective for the control of tropical spiderwort if applied before the weed exceeds 1". Can be tank- mixed with atrazine for improved broadleaf weed control. MOA = 9 + 15.
glyphosate + *S*-metolachlor + atrazine (Expert) 4.88 lbs/gal	2.5 - 3.75 qts	0.63 - 0.94 + 1.09 -1.63 + 1.34 -2.00	**FOR USE ONLY ON ROUNDUP READY CORN HYBRIDS APPLICATIONS OF GLYP HOSATE TO NON-TOLE RANT HYBRIDS WILL RESULT IN SEVERE CROP INJURY AND/OR CROP DEATH!!** Expert can be applied over-the-top of RR corn up until a maximum corn height of 12". MOA = 9 + 15 + 5.
glyphosate + *S*-metolachlor + mesotrione (Halex GT) 4.389 lbs/gal	3.6 - 4.0 pts	0.941- 1.568 + 0.941 - 1.568 + 0.094 - 0.105	**FOR USE ONLY ON ROUNDUP READY CORN HYBRIDS.** Can be applied from corn emergence up until 30" or 8 leaf stage of growth. Atrazine can be tank-mixed with Halex if desired. Add a NIS @ 0.25% v/v + AMS @ 8.5-17 lbs/100 gallons of water. **Do not use Halex GT if OP insecticides have been used at planting.** Rotation restrictions: corn = 0 months; grain sorghum (Concep treated) = 0 months; barley, wheat, rye = 4 months; cotton, peanuts, soybeans, sunflowers, tobacco = 10 months; MOA = 9 + 15 + 28.

USE STAGE/ HERBICIDE	BROADCAST RATE/ACRE: AMOUNT OF FORMULATION	BROADCAST RATE/ACRE: LBS. ACTIVE INGREDIENT/A	REMARKS AND PRECAUTIONS
POSTEMERGENCE - HERBICIDE TOLERANT HYBRIDS: PLEASE NOTE = Herbicide selection should not be the dominant factor in determining varietal selection. Consult your local extension personnel or seed dealer when choosing a hybrid(s) that is best adapted for your area and farming operation. (cont.)			
glyphosate (numerous trade names) 3.00 lb ae/gal 3.73 lb ae/gal 4.00 lb ae/gal 4.17 lb ae/gal 4.50 lb ae/gal 5.00 lb ae/gal	 32 oz. 26 oz. 24 oz. 23 oz. 22 oz. 19 oz.	0.75 ae	**FOR USE ONLY ON ROUNDUP READY CORN HYBRIDS APPLICATIONS OF GLYPHOSATE TO NON-TOLERANT HYBRIDS WILL RESULT IN SEVERE CROP INJURY AND/OR CROP DEATH!!** Can be tank-mixed with atrazine, Dual, Harness, Harness Xtra, Micro-Tech, Bullet, Partner, or Permit herbicides. Various formulations of glyphosate are available. Not all formulations of glyphosate are labeled for use on RR corn hybrids. Please refer to specific product label. Sequence is a pre-mix of glyphosate + S- metolachlor. Expert is a pre-mix of glyphosate + S-metolachlor + atrazine. **Halex GT** is a pre-mixture of glyphosate + S-metolachlor + mesotrione. MOA = 9. USE RATE TABLE (lb ae/A): RR-Corn 2 / RR-Corn Normal Application Rate 0.75 / 0.75 Maximum Application Rate 1.12 / 0.75 Maximum Total In-Crop Rate 2.25* / 1.50* Application Timing Up to V8 or 30" / Up to V8 30-48" (drops) / or 30" *1.50 lb ae/A = 64 oz/A of 4 lb ai/gal or 43 oz/A of 5.5 lb ai/gal *2.25 lb ae/A = 96 oz/A of 4 lb ai/gal or 64 oz/A of 5.5 lb ai/gal
POSTEMERGENCE-DIRECTED			
ametryn (Evik) 80W	1.25 - 2.0 lbs	1.0 - 1.6	Apply only as a directed spray to corn. Minimum corn height: ametryn-12 in., linuron- 15 in., paraquat-10 in. Spray to cover weeds no more than 3 to 4 in. tall. Where rate range is given, use lower rate when weeds are no taller than 2 in. and higher rate for weeds up to 4 in. tall. Use a nonionic surfactant to improve spray coverage of weeds (ametryn and linuron - 0.5% v/v; paraquat - 0.25% v/v). **DO NOT** apply ametryn within 3 weeks of tasseling. With paraquat arrange nozzles to spray no higher than lower 3 in. of stalks. Ametryn MOA = 6 Linuron MOA = 7 Paraquat MOA =22 Carfentrazone MOA = 14 Use Aim for the control of annual morningglory, pigweed, and tropical spiderwort. Add a COC at 1% v/v (1 gal/100 gals). Avoid directing the spray in the whorl of the plant. Aim provides no residual control.
linuron (numerous trade names) 50DF 4L	 1.25 - 1.5 lbs 1.25 - 1.50 pts	0.63 - 0.75	
paraquat (Gramoxone Inteon /Gramoxone SL) 2.0 lb./gal (Firestorm/Parazone) 3.0 lb/gal	16 - 32 ozs 11 - 21 ozs	0.25 - 0.50	
carfentrazone (Aim 2EC)	0.5 - 1.9 ozs.	0.08 - 0.031	
MINIMUM TILLAGE			
paraquat (Gramoxone Inteon /Gramoxone SL) 2.0 lb/gal (Firestorm/Parazone) 3.0 lb/gal	1.88 - 3.76 pts 1.25 -2.5 pts	0.47 - 0.94	Use with a nonionic surfactant (0.25% v/v for contact kill of emerged annual weeds. **Paraquat will not adequately control horseweed, swinecress, purslane speedwell, or curly dock**. Apply prior to, during, or after planting, but prior to crop emergence. Use 20 to 60 gallons of spray solution to assure good spray coverage. Use high spray gallonage for heavier weed infestations and where crop residue or stubble is dense. Paraquat does not provide residual control. Paraquat is registered for application as a tank-mixture with the following residual herbicides and herbicide combinations: AAtrex, Atrazine, Dual + Aatrex, AAtrex + Lasso, Harness Xtra, Aatrex + Princep, Surpass. Can be tank-mixed with atrazine, 2,4-D or Aim to improve burndown weed control. However, if 2,4-D is used, corn planting must be delayed for 7-14 days. MO A = 22.
glyphosate (numerous trade names) 3.00 lb ae/gal 3.73 lb ae/gal 4.00 lb ae/gal 4.17 lb ae/gal 4.50 lb ae/gal 5.00 lb ae/gal	 16 - 128 ozs 13 - 103 ozs 12 - 96 ozs 11.7 - 92 ozs 11 - 85 ozs 10 - 77 ozs	0.38 - 3.0 ae	Use 0.38-1.13 lbs ae/A for control of most emerged annual grasses and broadleaf weeds. Use 1.5 -3.0 lbs ae/A for control of perennial grasses and broad leaf weeds. Apply with 10 to 40 gallons of water/A immediately before, during, or after planting, but before crop emergence. As stubble, crop residue or weed density increases, spray gallonage and glyphosate rate should be increased (refer to label). Glyphosate tank mixtures are not recommended for bermudagrass or johnsongrass control in minimum tillage systems. Weed kill from glyphosate treatments applied as a tank mixture with residual herbicides has not been as consistent as when glyphosate and preemergence herbicides are applied separately. Glyphosate is registered for use as a tank-mixture with the following herbicide combinations: Lasso, Dual + atrazine, Lasso + atrazine, Harness Plus, Surpass, Lasso + simazine, Dual + simazine atrazine + simazine, Dual + atrazine + simazine. Can be tank-mixed with atrazine, 2,4-D or Aim to improve burndown weed control. However, if 2,4-D is used, corn planting must be delayed for 7-14 days. MOA = 9.

USE STAGE/ HERBICIDE	BROADCAST RATE/ACRE AMOUNT OF FORMULATION	BROADCAST RATE/ACRE LBS ACTIVE INGREDIENT/A	REMARKS AND PRECAUTIONS
MINIMUM TILLAGE			
glufosinate (Ignite 280 SL) 2.34 lb/gal	22-29 ozs	0.40 - 0.53	Apply during or after planting, but before crop emerges to kill emerged annual grasses and weeds. Ignite will not provided adequate burndown control of small grains. **Very effective for burndown control of volunteer peanuts.** Can be tank-mixed with glyphosate or 2,4-D. MOA = 10.
carfentrazone (Aim) 2EC	0.5 - 1.0 ozs.	0.008- 0.016	Tank-mix with glyphosate or glufosinate for the improved control of large morningglories. Corn can be planted immediately. MOA = 14.
pyraflufen (ET) 0.208 lb/gal	0.5 - 2.0 ozs.	0.001 - 0.003	Tank-mix with glyphosate or glufosinate for the improved control of large morningglories. Corn can be planted immediately. MOA = 14.
2,4-D (various trade names) 3.8 lb/gal	1.0 pt	0.475	Very effective for cutleaf evening primrose control. Can be tank-mixed with other burndown herbicides. Corn can be planted in 7- 14 days after application. MOA = 4.
flumioxazin (Valor SX 51WG)	2 oz	0.064	Tank-mix with glyphosate to improve burndown control of certain weeds. Will also provide residual control of many broadleaf weeds including pigweed and Florida beggarweed. No-till or minimum tillage corn can be planted 14 days after application in fields where last year's crop residue has not been incorporated into the soil. Do not irrigate from emergence to 2-leaf stage. Corn planted in other tillage systems should not be planted for at least 30 days after application. MOA = 14.
thifensulfuron + tribenuron (FirstShot SG) 50SG	0.5 – 0.8 oz	0.008 – 0.013 + 0.008 – 0.013	Tank-mix with glyphosate, paraquat, or Ignite for improved control of broadleaf weeds. Corn can be planted in **14-21** days depending upon soil type. MOA = 2 + 2.
dicamba (Banvel, Clarity, Diablo, Rifle, Sterling, etc.) 4SL	8 oz	0.25	Apply in combination with either Ignite, glyphosate, or paraquat in fields where marestail or horseweed is a problem. Wait 7 days before planting corn. Corn must be planted at least 1.5" deep. MOA = 4.
BURNDOWN CONTROL OF RR FIELD CORN (REPLANTING)			
clethodim (SelectMax / TapOut) 0.97EC	6 oz	0.045	For the control of an existing stand of RR field corn or volunteer RR field corn prior to replanting field corn. Use a NIS (0.25% v/v) + AMS (2.5 lbs/A). Corn can be replanted in 6 days. MOA = 1.
HARVEST AID			
2,4-D (numerous trade names) 3.8 lb/gal	1- 2 pt	0.48 - 0.96	Apply by air or high clearance equipment when corn reaches the hard dough stage to suppress, control or decrease seed production of cocklebur, jimsonweed, ragweed, or vines which interfere with harvesting. Observe drift control precautions noted for postemergence use of 2,4- D. No adjuvant is recommended. Wait 5-7 days after application before harvesting. MOA = 4.
sodium chlorate 3 lb/gal 5 lb/gal 6 lb/gal 7.5 lb/gal	 2 gals 1.2 gals 1 gal 0.8 gals	6.0	Apply 14 days prior to harvest by aerial or ground equipment. Apply on warm, sunny day with high temperatures (>70° F) and humidity. Do not apply if rainfall is expected within 24 hours. More effective on grass weeds than broadleaf weeds. Desiccation of morningglory and other vines may be erratic. MOA = NC.
glyphosate (numerous trade names) 3.00 lb ae/gal 3.73 lb ae/gal 4.00 lb ae/gal 4.17 lb ae/gal 4.50 lb ae/gal 5.00 lb ae/gal	 32 oz 26 oz 24 oz 23 oz 22 oz 19 oz	0.75 ae	Apply 7 days before harvest when kernel moisture is less than 35% and after black layer formation. Avoid drift onto sensitive crops. **Do not use on corn grown for seed if hybrid is not RR Corn 2**. Not all formulations of glyphosate may be labeled for use as a harvest aid. Please refer to the specific product label. MOA = 9.
carfentrazone (Aim 2EC)	1.6-1 .9 ozs	0.025-0.030	Apply for the defoliation/desiccation of annual morningglories and pigweed. Use a COC @ 1% v/v. Can be applied aerially or by ground. Do not apply within 3 days of harvest. Do not graze corn stover until 14 days after application. MOA = 14.
paraquat (Firestorm/ Parazone) 3 lb/gal (Gramoxone Inteon / Gramoxone SL) 2 lb/gal	0.8-1.3 pts 1.2-2.0 pts	0.30-0.50	Application must be made at least 7 days before harvest. Apply after the corn is mature and black layer has formed at the base of the kernels. Add a NIS at 0.25% v/v (1 qt/100 gals). Can be applied aerially or by ground. MOA = 22.

*When using atrazine formulations other than 4L, use equivalent rates: 1.0 qt. 4L equal 1.25 lbs. 8 0W or 1.1 lbs. 90 DF.

Suggested Herbicide Programs for the Post-Harvest Control of Tropical Spiderwort:

OPTION 1: 2,4-D amine 3.8SL @ 1.5 pt/A followed by 2,4-D amine 3.8SL @ 1.5 pt/A or Gramoxone Inteon / Gramoxone SL 2SL @ 32 oz/A or
Firestorm /Parazone 3SL @ 21 oz/A + COC @ 1% v/v or Aim 2EC @ 1.5 oz/A + COC @ 1% v/v 14-21 days later

OPTION 2: Gramoxone Inteon / Gramoxone SL 2SL @ 32 oz/A or Firestorm/Parazone 3SL @ 21 oz/A + COC @ 1% v/v followed by Gramoxone Inteon / Gramoxone SL 2SL @ 32 oz/A or Firestorm/Parazone 3SL @ 21 oz/A + COC @ 1% v/v 14- 21 days later

OPTION 3: Aim 2EC @ 1.5 oz/A + COC @ 1% v/v followed by Aim 2EC @ 1.5 oz/A + COC @ 1% v/v 14-21 days later

Metolachlor and S-Metolachlor Products

Trade Name	Active Ingredient	lbs/gal	Corn Safener	Company
Brawl	S-metolachlor	7.62	none	Tenkoz
Brawl II	S-metolachlor	7.64	benoxacor	Tenkoz
Charger Basic	S-metolachlor	7.62	none	Agriliance
Charger Max	S-metolachlor	7.64	benoxacor	Agriliance
Cinch	S-metolachlor	7.64	benoxacor	DuPont
Dual Magnum	S-metolachlor	7.62	none	Syngenta
Dual II Magnum	S-metolachlor	7.64	benoxacor	Syngenta
Me-Too-Lachlor	metolachlor	8.0	none	Drexel
Me-Too-Lachlor II	metolachlor	7.8	dichlormid	Drexel
Medal	S-metolachlor	7.62	none	Syngenta
Parallel	metolachlor	7.8	benoxacor	Makhteshim-Agan
Parallel PCS	metolachlor	8.0	none	Makhteshim-Agan
Parrlay	metolachlor	8.0	none	Monsanto
Stalwart	metolachlor	8.0	none	SipCam
Stalwart C	metolachlor	7.8	dichlormid	SipCam

PREPACKAGED TANK-MIXES FOR FIELD CORN
[See manufacturer's label for specific rates and application uses]

Product Name	Active Ingredients (lbs ai/gal or % ai)	Product Name	Active Ingredients (lbs ai/gal or % ai)
Accent Gold	nicosulfuron (6.5%) + rimsulfuron (6.5%)+ flumetsulam (19.1%) + clopyralid (51.7%)	Axiom	flufenacet (54.4%) + metribuzin (13.6%)
Accent Gold WDG	nicosulfuron (5.4%) + rimsulfuron (5.4%) + flumetsulam (15.9%) + clopyralid (51.4%)	Axiom AT	flufenacet (19.6%) + metribuzin (4.9%) + atrazine (50.5%)
Balance Flexx	isoxaflutole (2.0) + cyprosulfamide[4]	Basis	rimsulfuron (50%) + thifensulfuron (25%)
Basis Gold	rimsulfuron (1.34%) + nicosulfuron (1.34%) + atrazine (82.44 %)	Bicep	metolachlor (3.33) + atrazine (2.67)
Bicep II	metolachlor (3.23) + atrazine (2.67) + benoxacor[1]	Bicep Lite II	metolachlor (2.3) + atrazine (1.67) + benoxacor
		Bicep Lite II Magnum	*S*-metolachlor (3.33) + atrazine (2.67) + benoxacor
Bicep II Magnum	*S*-metolachlor (2.4) + atrazine (3.1) + benoxacor	Breakfree ATZ	acetoachlor (3.0) + atrazine (2.25) + dichlormid[2]

PREPACKAGED TANK-MIXES FOR FIELD CORN (continued)
[See manufacturer's label for specific rates and application uses]

Product Name	Active Ingredients (lbs ai/gal or % ai)	Product Name	Active Ingredients (lbs ai/gal or % ai)
Breakfree ATZ Lite	acetoachlor (4.0) + atrazine (1.50) + dichlormid[2]	Bullet	alachlor (2.5) + atrazine (1.5)
Callisto Xtra	atrazine (3.2) + mesotrione (0.5)	Camix	mesotrione (0.33) + S-metolachlor (3.34)+ benoxacor
Capreno	thiencarbazone (0.57) + tembotrione (2.88) + isoxadifen[3]	Celebrity Plus	dicamba (46.6%) + diflufenzopyr (18.1%) + nicosulfuron (10.6%)
Charger Max ATZ	*S*-metolachlor (2.4) + atrazine (3.1) + benoxacor	Charger Max ATZ Lite	*S*-metolachlor (3.33) + atrazine (2.67) + benoxacor
Cinch ATZ Cinch ATZ Lite	*S*-metolachlor (2.4) + atrazine (3.1) + benoxacor *S*-metolachlor (3.33) + atrazine (2.67) + benoxacor	Corvus	thiencarbazone (0.75)+ isoxaflutole (1.88) + cyprosulfamide[4]
Degree Xtra	acetochlor (2.7) + atrazine (1.34)	Distinct	diflufenzopyr (20%) + dicamba (50%)
Epic	flufenacet (48%) + isoxaflutole (10%)	Equip	foramsulfuron (30%) + idosulfuron (2%)
Exceed	primisulfuron (28.5%) + prosulfuron (28.5%)	Expert	*S*-metolachlor (1.74) + atrazine (2.14) + glyphosate (1.0)
FieldMaster	acetochlor (2.0) + atrazine (1.5) + glyphosate (0.75)	FulTime	acetochlor (2.4) + atrazine (1.6)
Guardsman	dimethenamid (2.33) + atrazine (2.67)	Guardsman Max	dimethenamid-p (1.7) + atrazine (3.3)
Halex GT	mesotrione (0.209) + *S*-metolachlor (2.09) + glyphosate (2.09)		
Harness Xtra	acetochlor (4.3) + atrazine (1.7)	Harness Extra 5.6L	acetochlor (3.1) + atrazine (2.5)
Hornet	flumetsulam (23%) + clopyralid (62.5%)	Keystone Keystone LA	acetochlor (3.0) + atrazine (2.5) acetochlor (4.0) + atrazine (1.5)
Imperium	EPTC (5.6) + acetochlor (1.4)		
Laddock	bentazon (1.66) + atrazine (1.66)	LandMaster	glyphosate (1.2) + 2,4-D (1.9)
Lariat	alachlor (2.5) + atrazine (1.5)	Lexar	*S*-metolachlor (1.74)+ atrazine (1.74) + mesotrione (0.224) + benoxacor
Lightning	imazethapyr (52.5%) + imazapyr (17.5%)	Liberty ATZ	atrazine (3.3) + glufosinate (1.0)
Lumax	*S*-metolachlor (2.68) + mesotrione (0.268) + atrazine (1.0) + benoxacor	Marksman	dicamba (1.1) + atrazine (2.1)
Parallel Plus	atrazine (2.8) + metolachlor (2.7) + benoxacor	Prequel	rimsulfuron (15%) + isoxaflutole (30%)
Priority	carfentrazone (12.5%) + halosulfuron (50.0%)	Propel ATZ Propel ATZ Lite	dimethenamid-p (1.7) + atrazine (3.3) dimethenamid-p (2.25) + atrazine (2.75)
Radius	flufenacet (3.57) + isoxaflutole (0.43)	Realm Q	rimsulfuron (7.5%) + mesotrione (31.25%) + isoxadifen[3]
Resolve Q	rimsulfuron (18.4%) + thifensulfuron (4.0%) + isoxadifen[3]	Stalwart Xtra	atrazine (3.1) + metolachlor (2.4) + dichlormid[2]
Shotgun	atrazine (2.25) + 2,4-D (1.0)		
Steadfast Steadfast ATZ	nicosulfuron (50%) + rimsulfuron (25%) nicosulfuron (2.7%) + rimsulfulorun (1.3%) + atrazine (85.3%)	Steadfast ATZ	nicosulfuron (2.7%) + rimsulfulorun (1.3%) + atrazine (85.3%)
Steadfast Q	nicosulfuron (25.2%) + rimsulfuron (12.5%) + isoxadifen	Sterling Plus	dicamba (1.1) + atrazine (2.1)
Stout	nicosulfuron (67.5%) + thifensulfuron (5.0%)	SureStart	clopyralid (0.29) + acetochlor (0.38) + flumetsulam (0.12)
TripleFLEX	acetochlor (3.75) + clopyralid (0.38) + flumetsulam (0.12)	Yukon	halosulfuron (12.5%) + dicamba (55%)

[1]Benoxacor - a safener that protects corn from metolachlor injury.
[2]Dichlormid - a safener that protects corn from metolachlor injury.
[3]Isoxadifen - a corn safener
[4]Cyprosulfamide - a corn safener

WEED RESPONSE TO HERBICIDES USED IN FIELD CORN

Eric P. Prostko, Extension Agronomist - Weed Science

	Sutan	Eradicane	Micro-Tech Lasso	Axiom	Frontier Outlook	AAtrex Atrazine	Pursuit[1]	Dual[1] Cinch	Harness Surpass TopNotch Degree	Simazine	Python
	PPI		PRE								
PERENNIAL WEEDS johnsongrass (rhizome)	F	F-G	P		P	P	P	P	P	P	P
nutsedge, purple	G-E	G-E	P	P	P	P	G	P	P	P	P
nutsedge, yellow	G-E	G-E	F	P	F-G	P	F-G	F-G	F	P	P
ANNUAL GRASSES broadleaf signalgrass	G	G	F-G		F-G	P	P	F-G	G	P	P
crabgrass	E	E	E	G-E	E	G	F	E	E	G	P
crowfootgrass	E	E	E	G	E	G	P	E	E	G	P
fall panicum	E	E	E		E	P	P-F	E	E	G	P
goosegrass	E	E	E		E	G	F	E	E	G	P
johnsongrass (seedling)	E	E	P		P	P	G	P	P	P	P
sandbur	E	E	F-G		F-G			F-G	F-G	G	P
Texas panicum	G-E	G-E	P-F	F	F	P	P-F	P	P	P	P
annual ryegrasses						G				E	P
BROADLEAF WEEDS bristly starbur			P		P	G	F	P	P	G	E
burcucumber			P	P	P	P-F		P	P	F	P
citronmelon			P		P	G	G	P	P	F	
cocklebur			P	P	P	G-E	E	P	P	G	E
cowpea			P		P	E	P	P	P	G	
crotalaria			P		P	G-E		P	P	G	
croton, tropic			P		P	G	P	P	P	G	
Florida beggarweed			F		P	E	P	F	F	G	F-G
Florida pusley	G-E	G-E	G-E	G	G-E	E	P	G-E	G-E	G	G
jimsonweed			P		P	E	G	P	P	E	P
lambsquarters, common	G	G	F-G	F-G	F	E	F	F	F	E	E
morningglories			P	P	P	G	G	P	P	G	F-G
pigweeds[3]	G	G	G	F-G[4]	G	E	E	G	G	E	E
ALS-resistant	G	G	G		G	E	P	G	G	E	P
glyphosate-resistant	G	G	G		G	E	E	G	G	E	E
atrazine-resistant	G	G			G	P	E	G	G	P	E
prickly sida	G	G	F-G		F	E	G-E	F	F	E	E
purslane	G	G	G		G	E		G	G	E	
ragweed, common			P	F	P	E	P	P	P	E	G
sesbania, hemp		P	P		P	F-G		P	P		
sicklepod	F	F	P	P	P	G	P	P	P	G	F-G
smartweed	P	P	P	P-F	P	G-E	G-E	P	P	G	G
tropical spiderwort					F	F	F-G	G-E			
volunteer peanuts	P	P	P		P	G	P	P	P	F	
velvetleaf			P	P	P	G	G	P	P		E
wild poinsettia											G
wild radish	P	P	P		P	G	E	P	P	F	

PPI = Preplant soil incorporated **PRE** = Preemergence (surface applied)

[1]Weed response for Pursuit is similar for PPI and PRE applications. **Pursuit can only be used on Clearfield corn hybrids (IR/IT).**

[2]Includes all metolachlor products (Cinch, Dual, Dual II, Dual Magnum, Dual II Magnum). The generic formulations of metolachlor **(Parallel, Stalwart, Me-Too-Lachlor**) have not provided the same length of residual control of certain weeds as similar rates of Dual Magnum formulations in some UGA field trials.

[3]Palmer Amaranth control is poor.

Key to response symbols: E = Excellent control, weed kill 90 percent or above.; G = Good control, weed kill 80 percent or above; F = Fair control, weed kill less than 80%, usually unacceptable unless supplemental chemical or cultivation practices are used; P = Poor control. If no symbol is given, weed response is unknown.

WEED RESPONSE TO HERBICIDES USED IN FIELD CORN (continued)

	Evik	Attrex, Atrazine	Accent	Option	Beacon	Exceed	Basa-gran	Callisto	Laudis	Capreno	Steadfast Q
	Postemergence/Post-Directed)										
PERENNIAL WEEDS johnsongrass (rhizome)	P	P	G-E	G-E	F-G	P-F	P	P			
nutsedge, purple	G	P	P-F			P	P	P-F			
nutsedge, yellow	G	P				P	G	P-F			
ANNUAL GRASSES broadleaf signalgrass	G	P-F	G	G	P		P	F			
crabgrass	E	G	P	P-F	P	P	P	F-G	F-G	G	F
crowfootgrass	E	G	G-E			P	P	P			G-E
fall panicum	E	G	G-E	G-E	F	P	P	P			
goosegrass	E	G	G-E	G-E		P	P	P			
johnsongrass (seedling)	E	F	G-E	G-E	G-E	F-G	P	P			
sandbur	E	F	G-E	G-E		P	P	P			
Texas panicum	G-E	P-F	G-E	G	P	P	P	P	F-G	G	G-E
annual ryegrasses	F-G	F	G				P	P			
BROADLEAF WEEDS bristly starbur	E	E					E				
burcucumber	F	F-G	F-G	F-G	G	G	P	P-F			
citronmelon	G	G				F	P				
cocklebur	F	E	P-F	P-F		G	E	G-E			
cowpea	G	G					P				
crotalaria	E	G					P				
croton, tropic	G	G					P				
Florida beggarweed	E	G	G		G-E		P				
Florida pusley	E	G	P-F		G-E		P				
jimsonweed	E	E	F-G	F-G		G	E	G-E			
lambsquarters, common	E	E	F-G	G		G	P	G-E			
morningglories	G	E	G-E	F-G	F	F-G	F-G	F-G			
pigweeds	E	E	G-E	G	G-E	G	P	G	G	G-E	G-E
ALS-resistant	E	E	P	P	P	P	P	G	G	G	P
glyphosate-resistant	E	E	G-E	G	G-E	G	P	G	G	G-E	G-E
Atrazine-resistant	E	P	G-E	G	G-E	G	P	G	G	G-E	G-E
prickly sida	E	E	P			F-G	G	P			
purslane	E	E					P				
ragweed, common	E	E	P-F	G		G	F	F-G			
sesbania, hemp	P-F	F-G	P-F		P	F-G	P				
sicklepod	E	E	P-F		G	G	P	P	P	P	
smartweed		G-E	G	P	G		G-E	G-E			
tropical spiderwort	G-E	P					F-G				
velvetleaf		E	F	G	F-G		G-E	E			
volunteer peanuts	G-E	F-G	F		F	P	P	P			
wild poinsettia											
wild radish	G-E	F-G	G		G	G	F				

Key to response symbols: E = Excellent control, weed kill 90% or above; G = Good control, weed kill 80% or above; F = Fair control, weed kill less than 80%, usually unacceptable unless supplemental chemical or cultivation practices are used; P = Poor control. If no symbol is given, weed response is unknown.

WEED RESPONSE TO HERBICIDES USED IN FIELD CORN (continued)

	Resolve Q	Pursuit[1]	Lightning[1]	Ignite[2]	Glyphosate[3]	Banvel, Clarity	Lorox, Linex
	PO (Postemergence/Postemergence Directed)						
PERENNIAL WEEDS johnsongrass (rhizome)		P	F	P-F	E	P	P
nutsedge, purple		G		P	F-G	P	F
nutsedge, yellow		F	P	P	F	P	F
ANNUAL GRASSES broadleaf signalgrass		P		G	E	P	G
crabgrass		P-F	G	F-G	E	P	G
crowfootgrass		P-F	G	G	E	P	E
fall panicum		P		G	E	P	E
goosegrass		P		P	E	P	E
johnsongrass (seedling)		F		G	E	P	E
sandbur					E	P	E
Texas panicum	F-G	P-F	P-F	G-E	E	P	G-E
annual ryegrass				G	F-G	P	
BROADLEAF WEEDS bristly starbur		P-F		G-E	G	E	G
burcucumber		P	P	G	E	F	F
citronmelon		F		G	G	E	E
cocklebur		E	G	E	G	E	E
cowpea		P		G	G	E	G
crotalaria					G	G	E
croton, tropic		P		G	G	G	G
Florida beggarweed		P		G-E	G-E	G	E
Florida pusley		F-G	F-G	P-F	F	G	G
jimsonweed		F-G		G	G	E	E
lambsquarters, common		P	F	E	G	E	E
morninglories		F-G	G-E	G-E	F-G	E	G
pigweeds	G	G-E	G-E	F-G	G-E	G-E	G
ALS-resistant	P	P	P	F-G	G-E	G-E	G
glyphosate-resistant	G	G-E	G-E	F-G	P	G-E	G
Atrazine-resistant	G	G-E	G-E	F-G	G-E	G-E	G
prickly sida		P-F		P-F	G	E	G
purslane				G	G	E	G
ragweed, common		P	G	G	G	E	E
sesbania, hemp		P		G-E	F	E	G
sicklepod		P	F	G	G-E	E	E
smartweed		E	G-E	G-E	G-E	E	
tropical spiderwort		F	F-G	P-F	F	P	F
velvetleaf		G-E	E	E	G	F-G	
volunteer peanuts		P	P	G-E	F	F-G	G
wild poinsettia					G-E		
wild radish		G-E		F	G	G-E	G

[1]Pursuit and Lightning are **only** for use on Clearfield corn hybrids (IR/IT).
[2] Ignite is **only** for use on Liberty-Link corn hybrids.
[3]Glyphosate is **only** for use on Roundup Ready corn hybrids. Ratings also reflect weed control in minimum tillage applications prior to crop emergence/planting.
Key to response symbols: E = Excellent control, weed kill 90 percent or above; G = Good control, weed kill 80 percent or above; F = Fair control, weed kill less than 80%, usually unacceptable unless supplemental chemical or cultivation practices are used; P = Poor control.
If no symbol is given, weed response is unknown.

	paraquat	Prowl+	Trifluralin+	Stinger	2,4-D	Permit	Buctril	Aim
	PO (Postemergence/Postemergence Directed)							
PERENNIAL WEEDS johnsongrass (rhizomes)	P	P	P	P	P	P	P	P
nutsedge, purple	F	P	P	P	P	G	P	P
nutsedge, yellow	F	P	P	P	P-F	G	P	P
ANNUAL GRASSES broadleaf signalgrass	G	G	G	P	P	P	P	P
crabgrass	G	G-E	G-E	P	P	P	P	P
crowfootgrass	G	G-E	G-E	P	P	P	P	P
fall panicum	G	G-E	G-E	P	P	P	P	P
goosegrass	G	G-E	G-E	P	P	P	P	P
johnsongrass (seedling)	G	G	G	P	P	P	P	P
sandbur	G	G	G	P	P	P	P	P
Texas panicum	E	G	G	P	P	P	P	P
annual ryegrass		F	F	P		P		P
BROADLEAF WEEDS bristly starbur	G	*	*	F-G		G	G	P
burcucumber	G	P	P	P	P	P	F-G	P
citronmelon	F	*	*	F-G	E	P-F		
cocklebur	G	*	*	G-E	E	G	E	G
cowpea	G	*	*	G-E	E			
crotalaria	G	*	*	G-E	G	P		F
croton, tropic	G	*	*	G	G			G
Florida beggarweed	E	*	*	G-E	P	P	G	F
Florida pusley	F-G	G	G	F-G	G		E	F-G
jimsonweed	G	*	*	G	E			G
lambsquarters, common	F-G	G*	G*	P	E	P-F	G	G-E
morningglories	G	*	*	P	G	P-F	G	E**
pigweeds	G	G*	G*	P	G-E	F-G	G	G-E
ALS-resistant	G	G	G	P	G-E	P	G	G-E
glyphosate-resistant	G	G	G	P	G-E	F-G	G	G-E
Atrazine-resistant	G	G	G	P	G-E	F-G	G	G-E
prickly sida	F-G	*	*		G			F
purslane	G	G*	G*		G			G
ragweed, common	G	*	*	G	E	G	G	F
sesbania, hemp	P-F				G	F-G	G	
sicklepod	G	*	*	F-G	E	P	P	P
smartweed				F	P-F	F-G		G
tropical spiderwort	G-E	P	P		G-E	P		G-E
velvetleaf		P	P		G	E	G	E
volunteer peanuts	P	P	P	F-G	P	P	P	P
wild poinsettia	F-G	P	P					
wild radish	G	P	P		G	G-E	G	

Key to response symbols: E = Excellent control, weed kill 90 percent or above; G = Good control, weed kill 80 percent or above; F = Fair control, weed kill less than 80%, usually unacceptable unless supplemental chemical or cultivation practices are used; P = Poor control. If no symbol is given, weed response is unknown.

Ratings are based on average to good soil and weather conditions for herbicide performance.

*Must be tank mixed with atrazine or glyphosate for postemergence control of seedling grasses and broadleaf weeds.

+For control of grasses and selected broadleaf weeds, these herbicides must be applied prior to weed emergence.

**Aim will not effectively control smallflower morningglory.

*** Only for use in no-till or minimum tillage fields with previous crop residue. Rotation restriction for corn in other tillage systems is 30 days (1" rainfall/ irrigation is required between application and planting)

Weed and Cover Crop Response to Burndown Herbicides Used in Conservation Tillage Field Corn Production Systems in Georgia.

Weed	Glyphosate	Glyphosate + 2,4-D	Glyphosate + Atrazine	Glyphosate + Valor***	Paraquat	Paraquat + 2,4-D	Paraquat + Atrazine	glufosinate
Carolina geranium	P	F-G	G-E	G	G-E	G-E	G-E	G-E
chickweed	E	E	G-E	E	E	E	E	G-E
corn spurry	G-E	G-E	G-E		F-G			
crimson clover	P-F	F	F		G	G-E	G-E	
cutleaf evening primrose	P-F	E	G-E	F-G	F	E	G-E	G-E (mature plant)
henbit	F-G	E	G-E	E	G	E	G-E	G-E
horseweed	G	G-E	G-E	G-E	F	G	G-E	G-E
red sorrel	E	E	E	E	E	E	E	P-F
ryegrass**	G	G	G-E	G	P-F	P-F	F	P
small grains	E	E	G-E	E	F-G	F-G	G	P-F
swinecress	F-G	G	G	F-G	P-F	F-G	F-G	G-E
volunteer peanut	F	F	F	F-G	P	P-F	F	G-E
wild radish	F-G	G-E	G-E	E	F	G-E	G-E	G-E (mature plant)
corn plant-back restriction	**0 days**	**7-14 days**	**0 days**	**14 days*** **	**0 days**	**7-14 days**	**0 days**	**0 days**

Burndown rates are the following: Glyphosate at 0.75 lb ae/A (22 oz/A of 4.5 lb ae/gal or 32 oz/A of 3 lb ae/gal); paraquat at 0.75 lb ai/A (3 pt/A of Gramoxone Inteon / Gramoxone SL or 2 pt/A of Firestorm/Parazone); glufosinate at 0.40-0.53 lb ai/A (22-29 oz/A of Ignite 2.34SL); atrazine at 1.0 lb ai/A (1 qt/A of Atrazine 4L), Valor SX 51WG at 2 oz/A; and 2,4-D amine at 0.48 lb ai/A (1 pt/A of 2,4-D Amine 3.8SL).

** Ryegrass can be very difficult to control. The following programs are suggested: **OPTION 1** – Glyphosate at 1.125 lb ae/A (32 oz/A of 4.5 lb ae/gal or 48 oz/A of 3 lb ae/gal) + 32-48 oz/A of Atrazine 4L; **OPTION 2** – Gramoxone Inteon / Gramoxone SL @ 64 oz/A or Firestorm/Parazone @ 43 oz/A + Atrazine 4L @ 32-48 oz/A; **OPTION 3** – Glyphosate at 1.125 lb ae/A (32 oz/A of 4.5 lb ae/gal or 48 oz/A of 3 lb ae/gal) followed by Gramoxone Inteon /Gramoxone SL at 48 oz/A or Firestorm/Parazone at 32 oz/A + Atrazine 4L @ 32-48 oz/A (14-21 days after the glyphosate). **OPTION 4** - Select/Arrow 2EC @ 8 oz/A or SelectMax/TapOut @ 16 oz/A applied at least 30 days before planting followed by Gramoxone Inteon/Gramoxone SL @ 48 oz/A or Firestorm/Parazone @ 32 oz/A + Atrazine 4L @ 32 oz/A at planting.

POST-HARVEST MANAGEMENT OF PALMER AMARANTH

After corn harvest, Palmer amaranth plants that emerge up until 35 days before first frost will have the potential to produce viable seed. Consequently, these post-harvest populations should be managed up until this time using 1 or more of the following strategies:

a) For plants larger than 6" in height:

1) Mowing
2) Tillage

b) For plants less than 6" in height:

1) Tillage

2) Gramoxone Inteon / Gramoxone SL 2SL @ 48 oz/A or Firestorm/Parazone 3SL @ 32 oz/A + 2,4-D **amine** 3.8SC @ 16-24 oz/A + COC (1.0% v/v). If cotton is nearby and drift is a concern, consider using Clarity 4SL @ 8 oz/A instead of 2,4-D.

3) If residual control is desired and a small grain will **not** be planted, Dual Magnum/ Stalwart, etc. @ 1 pt/A can be included with the burndown treatment.

It is important to remember that viable Palmer amaranth seed can be produced within 2 weeks after pollen shed. Thus, control strategies need to be implemented before this time to be effective in reducing weed-seed rain back into a field.

Herbicide Programs for Managing Glyphosate and ALS-Resistant Palmer Amaranth in Field Corn.[1]

Corn hybrid	Preemergence	Postemergence	Layby as needed
Conventional	Atrazine**	Prowl[2] + Atrazine + Crop Oil	2,4-D[5] or Banvel/ Clarity[4,5] or Status[10]
Conventional	Bicep II Magnum[3], or Bullet, or Guardsman, or Lariat, or Lexar	Atrazine or Banvel/Clarity[4,5] or 2,4-D[5] or Aim or Callisto or Laudis or Capreno or Impact or Status[10]	2,4-D[5] or Banvel/ Clarity[4,5] or Status[10]
Liberty Link	Atrazine**	Ignite + atrazine[7]	2,4-D[5] or Banvel/ Clarity[4,5] or Status[10]
Liberty Link	Dual II Magnum[6] or Outlook or Micro-Tech	Ignite + atrazine[7]	2,4-D[5] or Evik or Banvel/Clarity[4,5] or Status[10]
Roundup Ready	Atrazine**	glyphosate + atrazine or glyphosate + Warrant or Banvel/Clarity[4,5] or Status[10]; Expert[8] or Sequence[9] or Halex GT[11]	2,4-D[5] or Banvel/ Clarity[4,5] or Status[10]
Roundup Ready	Bicep II Magnum[3], or Bullet, or Guardsman, or Lariat, or Lexar	glyphosate + atrazine or glyphosate + Warrant or Banvel/Clarity[4,5] or Status[10]; Expert[8] or Sequence[9] or Halex GT[11]	2,4-D[5] or Banvel/ Clarity[4,5] or Status[10]

[1]Glyphosate- and ALS-resistant Palmer amaranth are very serious concerns. An aggressive management program is necessary to slow spread of resistant biotypes and to reduce selection pressure in areas currently not infested with resistant biotypes.

[2]Generic brands of Prowl (pendimethalin) are available and perform similarly.

[3]Bicep II Magnum is a pre-mixture of *S*-metolachlor and atrazine. Less expensive, generic brands containing metolachlor and atrazine are available (Parallel Plus, Stalwart Xtra). These generic brands may not provide the same length of residual control as Bicep II Magnum (which contains *S*-metolachlor).

[4]Generic brands of Banvel (dicamba dimethylamine salt) are available and perform similarly.

[5]Use extreme caution to avoid drift to sensitive crops, such as cotton, tobacco, soybeans, and vegetables. Use only amine formulations of 2,4-D. Follow all label directions for drift management.

[6]Generic brands containing metolachlor are available (Me-Too-Lachlor-II, Parallel, Stalwart-C). However, these generic brands may not provide the same length of residual control as Dual II Magnum (*S*-metolachlor).

[7]Also available in a pre-mixture sold under the trade name of Liberty ATZ.

[8]Expert is a pre-mixture of glyphosate + *S*-metolachlor + atrazine.

[9]Sequence is a pre-mixture of glyphosate + *S*-metolachlor.

[10]Status is a pre-mixture of dicamba + diflufenzopyr + isoxadifen.

[11]Halex GT is a pre-mixture of glyphosate + *S*-metolachlor + mesotrione

**** When atrazine is applied PRE + POST, a total of 2.5 lbs ai/A can be applied per year (2.5 qts/A of 4L or 44 ozs/A of 90DF). When atrazine is applied only POST, then a total of 2.0 lb ai/A can be applied per year (2 qts/A of 4L or 36 ozs/A)**

Herbicides Programs For Managing Glyphosate, ALS, and Atrazine Resistant Palmer Amaranth In Field Corn.

Hybrid	Preemergence	Postemergence[1]
Any	Dual II Magnum or MicroTech	Callisto[2], Capreno, Impact, Laudis, Realm Q, or Status
Liberty-Link	Dual II Magnum or MicroTech	Ignite

[1]Atrazine can be tank-mixed with these herbicides if other weeds are a concern such as sicklepod and morningglory.
[2]Callisto Xtra is a premix formulation of Callisto + Atrazine.