Phillip Roberts, Extension Entomologist
Mike Toews, Research Entomologist
David Buntin, Research Entomologist

SOYBEAN INSECT CONTROL

PEST	INSECTICIDE	MOA	FORMULATION PER ACRE	LBS. ACTIVE PER ACRE	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Bean Leaf Beetles	*alpha-cypermethrin* Fastac CS	3A	2.8–3.8 oz	0.018–0.025	12 H/ 21 D	Bean leaf beetles are foliage feeders and damage the plant by chewing holes in the leaves and occasionally feeding on stems and pods. Defoliation Threshold: Treat when 30 percent foliage loss has occurred and beetles are present prior to bloom or when 15 percent foliage loss has occurred and beetles are present after bloom. Pod Feeding Threshold: Treat if 50 percent of the plants have pod feeding prior to R6.
	bifenthrin Brigade 2EC Discipline 2EC	3A	2.1–6.4 oz 2.1–6.4 oz	0.033–0.1	12 H/ 18 D	
	beta-cyfluthrin Baythroid XL 1	3A	1.6–2.8 oz	0.0125–0.022	12 H/ 21 D	
	gamma-cyhalothrin Declare 1.25	3A	0.77–1.28 oz	0.0075–0.0125	24 H/ 45 D	
	lambda-cyhalothrin Warrior II Zeon 2.08 Silencer 1	3A	0.96–1.6 oz 1.92–3.2 oz	0.015–0.025	24 H/ 30 D	
	zeta-cypermethrin Mustang Maxx .8EC	3A	2.8–4 oz	0.0175–0.025	12 H/ 21 D	
Beet Armyworms	*chlorantraniliprole* Vantacor 5SC	28	1.2–2.5 oz	0.047–0.098	4 H/ 1 day	Defoliation Threshold: Treat when 30 percent foliage loss has occurred and larvae 1/2" or longer are present prior to bloom or when 15% foliage loss has occurred and larvae 1/2" or longer are present after bloom. Beet armyworm infestations sometimes occur on seedling soybeans, especially on ultra-late planted soybeans. Performance of Group 28 insecticides used for beet armyworm management may vary due to insecticide resistance.
	indoxacarb Steward 1.25 EC	22	5.6–11.3 oz	0.055–0.1	12 H/ 21 D	
	methoxyfenozide Intrepid 2F	18	4–8 oz	0.06–0.12	4 H/ 14 D	
	novaluron Diamond 0.83 EC	15	6–12 oz	0.039–0.077	12 H/ 28 D	
	spinetoram Radiant 1SC	5	2–4 oz	0.0156–0.0313	4 H/ 28 D	
	spinosad Blackhawk	5	1.7–2.2 oz	0.038–0.049	4 H/ 28 D	
Blister Beetles	*alpha-cypermethrin* Fastac CS	3A	2.8–3.8 oz	0.018–0.025	12 H/ 21 D	Blister beetles are rarely a problem in soybeans. However, large numbers can cause extensive defoliation. Blister beetles may congregate in isolated areas of fields. Defoliation Threshold: Treat when 30% foliage loss has occurred and beetles are present prior to bloom or when 15% foliage loss has occurred and beetles are present after bloom.
	beta-cyfluthrin Baythroid XL 1	3A	1.6–2.8 oz	0.0125–0.022	12 H/ 21 D	
	gamma-cyhalothrin Declare 1.25	3A	1.28–1.54 oz	0.0125–0.015	24 H/ 45 D	

PEST	INSECTICIDE	MOA	FORMULATION PER ACRE	LBS. ACTIVE PER ACRE	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Blister Beetles (*continued*)	*lambda-cyhalothrin* Warrior II Zeon 2.08 Silencer 1	3A	 1.6–1.92 oz 3.2–3.84 oz	0.025–0.03	24 H/ 30 D	
	zeta-cypermethrin Mustang Maxx .8EC	3A	 2.8–4oz	0.0175–0.025	12 H/ 21 D	
Corn Earworms	*alpha-cypermethrin* Fastac CS	3A	 2.8–3.8 oz	0.018–0.025	12 H/ 21 D	Corn earworm infestations are rare in Georgia soybeans and typically occur in more northern areas of the state. Corn earworms may feed on the foliage or more importantly may damage developing pods. Performance of pyrethroids used for corn earworm management may vary due to insecticide resistance. Defoliation Threshold: Treat when 30% foliage loss has occurred and larvae ½" or longer are present prior to bloom or when 15% foliage loss has occurred and larvae ½" or longer are present after bloom. Sweep Net Threshold: 5 larvae/25 sweeps. Drop Cloth Threshold: 2 larvae/1 ft of row.
	bifenthrin Brigade 2EC Discipline 2EC	3A	 2.1–6.4 oz 2.1–6.4 oz	0.033–0.10	12 H/ 18 D	
	beta-cyfluthrin Baythroid XL 1	3A	 1.6–2.8 oz	0.0125–0.022	12 H/ 21 D	
	chlorantraniliprole Vantacor 5SC	28	 1.2–2.5 oz	0.047–0.098	4 H/ 1 D	
	gamma-cyhalothrin Declare 1.25	3A	 0.77–1.28 oz	0.0075–0.0125	24 H/ 45 D	
	lambda-cyhalothrin Warrior II Zeon 2.08 Silencer 1	3A	 0.96–1.6 oz 1.92–3.2 oz	0.015–0.025	24 H/ 30 D	
	esfenvalerate Asana XL .66EC	3A	 5.8–9.6 oz	0.03–0.05	12 H/ 21 D	
	indoxacarb Steward 1.25 EC	22	 5.6–11.3 oz	0.055–0.1	12 H/ 21 D	
	methomyl Lannate 2.4 LV	1A	 0.75–1.5 pt	0.225–0.45	48 H/ 14 D	
	spinetoram Radiant 1SC	5	 2–4 oz	0.0156–0.0313	4 H/ 28 D	
	spinosad Blackhawk	5	 1.7–2.2 oz	0.038–0.049	4 H/ 28 D	
	zeta-cypermethrin Mustang Maxx .8EC	3A	 2.8–4 oz	0.0175–0.025	12 H/ 21 D	
Cutworms	*alpha-cypermethrin* Fastac CS	3A	 1.3–3.8 oz	0.018–0.025	12 H/ 21 D	Treat when 10% of stand is lost and larvae are present.
	bifenthrin Brigade 2EC Discipline 2EC	3A	 2.1–6.4 oz 2.1–6.4 oz	0.033–0.10	12 H/ 18 D	

SOYBEAN INSECT CONTROL

PEST	INSECTICIDE	MOA	FORMULATION PER ACRE	LBS. ACTIVE PER ACRE	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Cutworms (*continued*)	*beta-cyfluthrin* Baythroid XL 1	3A	0.8–1.6 oz	0.0065–0.0125	12 H/ 21 D	
	chlorantraniliprole Vantacor 5SC	28	1.25–2.5 oz	0.047–0.098	4 H/ 1 D	
	gamma-cyhalothrin Declare 1.25	3A	0.77–1.28 oz	0.0075–0.0125	24 H/ 45 D	
	lambda-cyhalothrin Warrior II Zeon 2.08 Silencer 1	3A	0.96–1.6 oz 1.92–3.2 oz	0.015–0.025	24 H/ 30 D	
	zeta-cypermethrin Mustang Maxx .8EC	3A	1.28–4 oz	0.008–0.025	12 H/ 21 D	
Fall Armyworms	*chlorantraniliprole* Vantacor 5SC	28	1.25–2.5 oz	0.047–0.098	4 H/ 1 D	Defoliation Threshold: Treat when 30% foliage loss has occurred and larvae 1/2" or longer are present prior to bloom or when 15% foliage loss has occurred and larvae 1/2" or longer are present after bloom. Fall armyworm may sometimes feed on pods. If pod feeding is observed treat when populations reach 2 larvae/1 ft of row.
	indoxacarb Steward 1.25EC	22	5.6–11.3 oz	0.055–0.1	12 H/ 21 D	
	methomyl Lannate 2.4LV	1A	1.5 pt	0.45	48 H/ 14 D	
	novaluron Diamond 0.83 EC	15	6–12 oz	0.039–0.077	12 H/ 28 D	
	spinetoram Radiant 1SC	5	2–4 oz	0.0156–0.0313	4 H/ 28 D	
	spinosad Blackhawk	5	1.7–2.2 oz	0.039–0.049	4 H/ 28 D	
Grasshoppers	*alpha-cypermethrin* Fastac CS	3A	3.2–3.8 oz	0.02–0.025	12 H/ 21 D	Grasshoppers are primarily foliage feeders but may also feed on pods. In reduced tillage fields, immature grasshoppers may emerge from egg pods oviposited in the soil the previous fall. Adult grasshoppers migrating into soybeans initially build on field edges. Immature (wingless) grasshoppers are easier to control than adults. Defoliation Threshold: Treat when 30% foliage loss has occurred and grasshoppers are present prior to bloom, or when 15% foliage loss has occurred and grasshoppers are present after bloom.
	bifenthrin Brigade 2EC Discipline 2EC	3A	2.1–6.4 oz 2.1–6.4 oz	0.033–0.1	12 H/ 18 D	
	acephate Orthene 97	1B	0.5 lb	0.48	24 H/ 14 D	
	beta-cyfluthrin Baythroid XL 1	3A	2–2.8 oz	0.0155–0.022	12 H/ 21 D	
	gamma-cyhalothrin Declare 1.25	3A	1.28–1.54 oz	0.0125–0.015	24 H/ 45 D	
	lambda-cyhalothrin Warrior II Zeon 2.08 Silencer 1	3A	1.6–1.92 oz 3.2–3.84 oz	0.025–0.03	24 H/ 30 D	
	zeta-cypermethrin Mustang Maxx .8EC	3A	3.2–4 oz	0.02–0.025	12 H/ 21 D	

PEST	INSECTICIDE	MOA	FORMULATION PER ACRE	LBS. ACTIVE PER ACRE	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Green Cloverworms	*alpha-cypermethrin* Fastac CS	3A	2.8–3.8 oz	0.018–0.025	12 H/ 21 D	Green cloverworms are foliage feeders that have 3 pairs of abdominal prolegs; larvae become very active when prodded. Green cloverworms are attacked by numerous beneficial organisms and rarely requires insecticidal control. Defoliation Threshold: Treat when 30% foliage loss has occurred and larvae ½" or longer are present prior to bloom or when 15% foliage loss has occurred and larvae ½" or longer are present after bloom. Sweep Net Threshold: 38 larvae/25 sweeps. Drop Cloth Threshold: 8 larvae/1 ft of row.
	beta-cyfluthrin Baythroid XL 1	3A	0.8–1.6 oz	0.0065–0.0125	12 H/ 21 D	
	chlorantraniliprole Vantacor 5SC	28	1.2–2.5 oz	0.047–0.098	4 H/ 1 D	
	gamma-cyhalothrin Declare 1.25	3A	0.77–1.28 oz	0.0075–0.0125	24 H/ 45 D	
	lambda-cyhalothrin Warrior II Zeon 2.08 Silencer 1	3A	0.96–1.6 oz 1.92–3.2 oz	0.015–0.025	24 H/ 30 D	
	diflubenzuron Dimilin 2L	15	2–4 oz	0.03–0.06	12 H/ 21 D	
	esfenvalerate Asana XL .66EC	3A	2.9–5.8 oz	0.015–0.03	12 H/ 21 D	
	indoxacarb Steward 1.25EC	22	5.6–11.3 oz	0.055–0.1	12 H/ 21 D	
	methomyl Lannate 2.4 LV	1A	0.75–1.5 pt	0.225–0.45	48 H/ 14 D	
	methoxyfenozide Intrepid 2F	18	4–8 oz	0.06–0.12	4 H/ 14 D	
	novaluron Diamond 0.83 EC	15	6–10 oz	0.039–0.064	12 H/ 28 D	
	spinetoram Radiant 1SC	5	2–4 oz	0.0156–0.0313	4 H/ 28 D	
	spinosad Blackhawk	5	1.1–2.2 oz	0.025–0.049	4 H/ 28 D	
	zeta-cypermethrin Mustang Maxx .8EC	3A	2.8–4 oz	0.0175–0.025	12 H/ 21 D	
Japanese Beetles	*alpha-cypermethrin* Fastac CS	3A	2.8–3.8 oz	0.018–0.025	12 H/ 21 D	Japanese beetles are foliage feeders and are most often observed infesting soybean in northern areas of Georgia. Defoliation Threshold: Treat when 30% foliage loss has occurred and beetles are present prior to bloom, or when 15% foliage loss has occurred and beetles are present after bloom.
	beta-cyfluthrin Baythroid XL 1	3A	1.6–2.8 oz	0.0125–0.022	12 H/ 21 D	
	gamma-cyhalothrin Declare 1.25	3A	1.28–1.54 oz	0.0125–0.015	24 H/ 45 D	

SOYBEAN INSECT CONTROL

PEST	INSECTICIDE	MOA	FORMULATION PER ACRE	LBS. ACTIVE PER ACRE	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Japanese Beetles (*continued*)	*lambda-cyhalothrin* Warrior II Zeon 2.08 Silencer 1	3A	 1.6–1.92 oz 3.2–3.84 oz	0.025–0.03	24 H/ 30 D	Japanese beetles are foliage feeders and are most often observed infesting soybean in northern areas of Georgia. Defoliation Threshold: Treat when 30% foliage loss has occurred and beetles are present prior to bloom, or when 15% foliage loss has occurred and beetles are present after bloom.
	zeta-cypermethrin Mustang Maxx .8EC	3A	2.8–4 oz	0.0175–0.025	12 H/ 21 D	
Kudzu Bugs	*acephate* Orthene 97	1B	0.75–1 lb	0.5–0.97	24 H/ 14 D	Kudzu bugs have sucking mouthparts and feed on the main stem and petioles. Current recommendations include interrupting the development of each generation of kudzu bug by applying an insecticide to target the immature stage of the insect. Kudzu bug infestations are generally higher on early planted soybeans. Sweep Net Threshold: 1 immature kudzu bug/sweep. Samples should be taken from all areas of the field, including edges and the middle, taking care not to bias sampling along border rows where populations build initially. Visual Inspection Threshold: As an alternative to sweep-net sampling, visual inspections of insect density lower in the canopy will suffice. If immature kudzu bugs are easily and repeatedly found on leaf petioles and/or main stems, treatment is likely warranted.
	alpha-cypermethrin Fastac CS	3A	3.2–3.8 oz	0.02–0.025	12 H/ 21 D	
	bifenthrin Brigade 2EC Discipline 2EC	3A	5.12–6.4 oz 6.4 oz	0.08–0.1	12 H/ 18 D	
	gamma-cyhalothrin Declare 1.25	3A	1.28–1.54 oz	0.0125–0.015	24 H/ 45 D	
	lambda-cyhalothrin Warrior II Zeon 2.08	3A	1.92 oz	0.03	24 H/ 30 D	
	zeta-cypermethrin Mustang Maxx .8 EC	3A	4 oz	0.025	12 H/ 21 D	
Lesser Cornstalk Borers	*chlorantraniliprole* Vantacor 5SC	28	1.2–2.5 oz	0.047–0.098	4 H/ 1 D	Treat when 10 percent of seedlings are infested with larvae. The risk of lesser cornstalk borer is greatest during hot dry periods. Infestations are more common in conventionally tilled sandy soils. The risk of lesser cornstalk borer is also high when previous crop residues are burned prior to planting.
Loopers, Soybean	*chlorantraniliprole* Vantacor 5SC	28	1.2–2.5 oz	0.047–0.098	4 H/ 1 D	Soybean looper is a foliage feeder that has 2 pairs of abdominal prolegs. Soybean loopers are highly resistant to pyrethroid insecticides and should not be used for control. Defoliation Threshold: Treat when 30% foliage loss has occurred and larvae ½" or longer are present prior to bloom or when 15% foliage loss has occurred and larvae ½" or longer are present after bloom. Sweep Net Threshold: 19 larvae/25 sweeps. Drop Cloth Threshold: 8 larvae/1 ft of row.
	indoxacarb Steward 1.25 EC	22	5.6–11.3 oz	0.055–0.1	12 H/ 21 D	
	methoxyfenozide Intrepid 2F	18	4–8 oz	0.06–0.12	4 H/ 14 D	
	spinetoram Radiant 1SC	5	2–4 oz	0.0156–0.0313	4 H/ 28 D	
	spinosad Blackhawk	5	1.1–2.2 oz	0.025–0.049	4 H/ 28 D	
Spider Mites	*abamectin* Agri-Mek 0.7SC	6	1.75–3.5 oz	0.009-0.018	12 H/ 28 D	Mites are an occasional problem in Georgia soybeans. The presence of mites should be confirmed with a hand lens on damaged leaves prior to treating. Treat if infestations become general over the entire field and leaf discoloration is becoming evident. Spot treatment of infested areas is also an option.

PEST	INSECTICIDE	MOA	FORMULATION PER ACRE	LBS. ACTIVE PER ACRE	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Silverleaf Whiteflies	*pyriproxyfen* Knack 0.86	7C	8–10 oz	0.0537–0.0671	12 H/ 7 D	Silverleaf whitefly is difficult to control with insecticides. Early detection and conservation of natural controls are important. Apply when 50 percent of fully expanded trifoliates are infested with immatures. Late and ultra late planted soybeans are at greatest risk of whitefly infestations. Immatures typically infest the lower trifoliates and move up the plant as the season progresses.
	flupyradifurone Sivanto Prime 1.67	4D	10.5–14 oz	0.1369–0.1826	4 H/ 21 D	
	bifenthrin + *acetamiprid* Argyle OD	3A + 4A	9 oz	1.07 + 0.07	12 H/30 D	
Stink Bugs	*acephate* Orthene 97	1B	0.5–1 lb	0.5– 0.97	24 H/ 14 D	Stink bugs damage developing seeds with their sucking mouthparts. Southern green, green, and brown stink bugs are the most common species observed in soybean. Bloom to Mid Pod-Fill (R1–R4): Sweep Net Threshold: 3 stink bugs/25 sweeps. Drop Cloth Threshold: 0.33 stink bugs/1 ft of row. After Mid Pod-Fill (R5–R6.5 + 7 days): Sweep Net Threshold: 9 stink bugs/25 sweeps. Drop Cloth Threshold: 1 stink bug/1 ft of row. *If soybeans are being grown for seed, 1 stink bug/6 ft of row will justify control measures.
	alpha-cypermethrin Fastac CS	3A	3.2–3.8 oz	0.02–0.025	12 H/ 21 D	
	beta-cyfluthrin Baythroid XL 1	3A	1.6–2.8 oz	0.0125–0.022	12 H/ 21 D	
	bifenthrin Brigade 2EC Discipline 2EC	3A	2.1–6.4 oz 2.1–6.4 oz	0.033–0.1	12 H/ 18 D	
	clothianidin Belay 2.13	4A	3–6 oz	0.05–0.1	12 H/ 21 D	
	gamma-cyhalothrin Declare 1.25	3A	1.28–1.54 oz	0.0125–0.015	24 H/ 45 D	
	lambda-cyhalothrin Warrior II Zeon 2.08 Silencer 1	3A	1.6–1.92 oz 3.2–3.84 oz	0.025–0.03	24 H/ 30 D	
	novaluron Diamond 0.83 EC	15	6–12 oz	0.039–0.077	12 H/ 28 D	Diamond is an insect-growth regulator and will not control adults.
	zeta-cypermethrin Mustang Maxx .8EC	3A	3.2–4 oz	0.02–0.025	12 H/ 21 D	
Sugarcane Beetles	The treatments for lesser cornstalk borer give helpful control.					Sugarcane beetles are a rare and sporadic pest of soybeans in Georgia.
Three-cornered Alfalfa Hoppers	*acephate* Orthene 97	1B	0.75–1 lb	0.73–0.97	24 H/ 14 D	Three-cornered alfalfa hoppers feed on the main stem above the soil surface in seedling soybeans. Soybeans are most susceptible to main stem girdling when plants are less than 12" in height. Girdling of the main stem may cause plants to lodge. Damaged plants may also lodge in the future as a result of damage during the seedling stage. Threshold (seedling soybeans): treat soybeans less than 12" in height when 10% of the plants are infested with nymphs and/or adults or stand is being reduced below recommended plant population and bugs are present. Both adults and nymphs may also feed on the petioles of leaves, blooms, and pods of reproductive soybeans. Threshold (reproductive soybeans): Sweep Net Threshold: 50 bugs/25 sweeps. Drop Cloth Threshold: 6 bugs/1 ft of row.
	alpha-cypermethrin Fastac CS	3A	2.8–3.8 oz	0.018–0.025	12 H/ 21 D	
	beta-cyfluthrin Baythroid XL 1	3A	1.6–2.8 oz	0.0125–0.022	12 H/ 21 D	
	gamma-cyhalothrin Declare 1.25	3A	0.77–1.28 oz	0.0075–0.0125	24 H/ 45 D	
	lambda-cyhalothrin Warrior II Zeon 2.08 Silencer 1	3A	0.96–1.6 oz 1.92–3.2 oz	0.015–0.025	24 H/ 30 D	
	zeta-cypermethrin Mustang Maxx .8E	3A	2.8–4 oz	0.0175–0.025	12 H/ 21 D	

SOYBEAN INSECT CONTROL

PEST	INSECTICIDE	MOA	FORMULATION PER ACRE	LBS. ACTIVE PER ACRE	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Velvetbean Caterpillars	*alpha-cypermethrin* Fastac CS	3A	2.8–3.8 oz	0.018–0.025	12 H/ 21 D	Velvetbean caterpillars are foliage feeders that have 4 pairs of abdominal prolegs; larvae become very active when prodded. Velvetbean caterpillars are voracious feeders and generally occurs during late season. Defoliation Threshold: Treat when 30% foliage loss has occurred and larvae ½" or longer are present prior to bloom or when 15% foliage loss has occurred and larvae ½" or longer are present after bloom. Sweep Net Threshold: 38 larvae/25 sweeps. Drop Cloth Threshold: 8 larvae/1 ft of row. Preventive applications of Dimilin should be made at the late R2 or R3 growth stage. R3 is defined as beginning pod, 3⁄16" pod at 1 of the 4 uppermost nodes on the main stem with a fully developed trifoliate.
	beta-cyfluthrin Baythroid XL 1	3A	1.6–2.8 oz	0.0125–0.022	12 H/ 21 D	
	chlorantraniliprole Vantacor 5SC	28	1.2–2.5 oz	0.047–0.098	4 H/ 1 D	
	gamma-cyhalothrin Declare 1.25	3A	0.77–1.28 oz	0.0075–0.0125	24 H/ 45 D	
	lambda-cyhalothrin Warrior II Zeon 2.08 Silencer 1	3A	0.96–1.6 oz 1.92–3.2 oz	0.015–0.025	24 H/ 30 D	
	diflubenzuron Dimilin 2L	15	2–4 oz	0.03–0.06	12 H/ 21 D	
	esfenvalerate Asana XL .66EC	3A	2.9–5.8 oz	0.015–0.03	12 H/ 21 D	
	methomyl Lannate 2.4 LV	1A	0.75–1.5 pt	0.225–0.45	48 H/ 14 D	
	methoxyfenozide Intrepid 2F	18	4–8 oz	0.06–0.12	4 H/ 14 D	
	novaluron Diamond 0.83 EC	15	6–10 oz	0.039–0.064	12 H/ 28 D	
	spinetoram Radiant 1SC	5	2–4 oz	0.0156–0.0313	4 H/ 28 D	
	spinosad Blackhawk	5	1.1–2.2 oz	0.025–0.049	4 H/ 28 D	
	zeta-cypermethrin Mustang Maxx .8EC	3A	2.8–4 oz	0.0175–0.025	12 H/ 21 D	

PREMIXED OR CO-PACKAGED INSECTICIDE PRODUCTS:

Products listed below are available as premixes or co-packages of 2 insecticidal active ingredients. When using premixed or co-packaged products, be sure the use of all active ingredients is necessary. Unnecessary applications or use of reduced rates of an active ingredient may lead to or intensify insecticide resistance. Labeled rates are listed with product names. However, see label for specific rates for target pests.

bifenthrin, acetamiprid (Argyle OD: 9 oz)

bifenthrin, *imidacloprid* (Brigadier: 3.8–6.1 oz)

chlorantriniliprole, *lambda-cyhalothrin* (Besiege: 5–10 oz)

chlorantraniliprole, bifenthrin (Elevest: 5.6–9.6 oz)

imidacloprid, *cyfluthrin* (Leverage: 2.8–3.2 oz)

lambda-cyhalothrin, *thiamethoxam* (Endigo: 3.5–4.5 oz)

methoxyfenozide, *spinetoram* (Intrepid Edge: 4–6.4 oz)

spinosad, *gamma-cyhalothrin* (Consero: See label)

zeta-cypermethrin, *bifenthrin* (Hero: 2.6–10.3 oz)

CONSERVE NATURAL ENEMIES: Reserve broad spectrum insecticides for late season use. Broad spectrum insecticides disrupt beneficial insects and spiders which suppress insect pest populations.

INSECT CONTROL TERMINATION: Generally, insect control can be terminated for foliage-feeding caterpillars, kudzu bugs, and stink bugs at R6 + 7 days (R6.5). The R6 growth stage is defined as: full seed, pod contains a green seed that fills the pod cavity at one of the four uppermost nodes on the main stem with a fully developed trifoliate leaf. R7 is defined as beginning maturity, one normal pod on the main stem that has reached mature pod color, normally brown or tan depending on variety. When terminating insect controls, insect populations should be below threshold levels.

SWEEP NET: If using a 15" diameter sweep net, take several 25-sweep samples in each field, the following treatment threshold levels can be used:

Pests	Average # Per 25 Sweeps
Kudzu Bugs (immatures)	25
Corn Earworms	5
Green Cloverworms	38
Soybean Loopers	19
Stink Bugs	
(bloom to mid-pod)	3
(mid-pod to maturity)	9
Three-cornered Alfalfa Hoppers	50
Velvetbean Caterpillars	38

GROUND CLOTH: If using a ground cloth, make several 3-ft examinations for each 20 acres being surveyed.

Pests	Average # Per Row Foot
Corn Earworms	2
Green Cloverworms	8
Soybean Loopers	8
Stink Bugs	
(bloom to mid-pod)	0.33
(mid-pod to maturity)	1
Three-cornered Alfalfa Hoppers	6
Velvetbean Caterpillars	8

INSECT PEST RESPONSE TO INSECTICIDES USED IN SOYBEAN

INSECTICIDE	BEAN LEAF BEETLE	BEET ARMYWORM	BLISTER BEETLE	CORN EARWORM	CUTWORM	FALL ARMYWORM	GRASSHOPPER	GREEN CLOVERWORM	JAPANESE BEETLE	KUDZU BUG	LESSER CORNSTALK BORER	SOYBEAN LOOPER	SPIDER MITE	STINK BUG (SOUTHERN GREEN)	STINK BUG (BROWN)	THREE-CORNERED ALFALFA HOPPER	VELVETBEAN CATERPILLAR	PREDATORS	PARASITE	CHEMICAL CLASS (MOA)	REI (Hours)[1]
acephate Orthene 97	3	5	4	4	2	4	2	4	—	2	—	4	5	2	2	2	3	H	H	1B	24
alpha-cypermethrin Fastac CS	2	4	2	3	2	3	2	1	2	2	—	4	5	1	3	2	1	H	M	3A	12
beta-cyfluthrin Baythroid XL 1	2	4	2	3	2	3	2	1	2	3	—	4	5	1	3	2	1	H	M	3A	12
bifenthrin Brigade 2, Discipline 2, Fanfare 2	2	4	2	3	2	3	2	1	2	1	—	4	2	1	2	2	1	H	M	3A	12
chlorantraniliprole Vantacor 5SC	5	3	5	1	3	1	3	1	—	5	—	1	5	5	5	5	1	E	E	28	4
clothianidin Belay 2.13	2	5	3	5	5	5	5	5	—	2	—	5	5	2	3	3	5	E	E	4A	12
diflubenzuron Dimilin 2L	5	4	5	5	5	4	3	1	—	5	—	4	5	5	5	5	1	E	E	15	12
dimethoate Dimethoate 4	3	5	3	5	5	4	4	4	—	4	—	5	3	4	4	3	4	M	H	1B	48
esfenvalerate Asana XL 0.66	2	4	3	3	2	3	2	1	2	3	—	4	5	2	4	2	1	H	M	3A	12
gamma-cyhalothrin Declare 1.25	2	4	2	3	2	3	2	1	2	2	—	4	5	1	3	2	1	H	M	3A	24
indoxacarb Steward 1.25	5	2	5	1	3	1	5	1	—	5	—	1	5	4	4	5	3	M	E	22	12
lambda-cyhalothrin Warrior II Zeon 2.08, Silencer 1	2	4	2	3	2	3	2	1	2	1	—	4	5	1	3	2	1	H	M	3A	24
methomyl Lannate LV 2.4	3	3	4	2	4	2	4	1	—	—	—	3	5	3	3	3	1	H	M	1A	48
methoxyfenozide Intrepid 2F	5	1	5	5	4	3	5	1	—	5	—	2	5	5	5	5	1	E	E	18	4
novaluron Diamond 0.83EC	—	2	—	4	5	1	3	1	—	—	—	3	5	3	3	—	1	M	E	15	12
spinosad Blackhawk	5	2	5	2	3	2	5	1	—	5	—	2	5	5	5	5	1	E	M	5	4
zeta-cypermethrin Mustang Maxx 0.8	2	4	2	3	2	3	2	1	2	2	—	4	5	1	3	2	1	H	M	3A	12

1—Very Effective; 5—Not Effective; E—Easy; M—Moderate; H—Hard

1. Read and follow label directions.

SOYBEAN DISEASE CONTROL

Bob Kemerait, Extension Plant Pathologist

DISEASE	CHEMICAL	MOA	RATE PER ACRE	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Foliar Diseases	**General remarks for fungicides applied to soybeans:** The presence of Asian soybean rust in Georgia has greatly affected disease control recommendations. Fungicides are now considered an important tool, not only for the management of Asian soybean rust, but also in some instances for diseases such as anthracnose, Phomopis pod, and stem blight. Before deciding to apply a fungicide, growers should consider the current yield potential in the field and the potential for further disease spread. Asian soybean rust can develop very rapidly in a field when enough spores are present and environmental conditions are favorable. Once a soybean crop reaches reproductive growth stages, growers should be prepared to treat with fungicides as soon as the disease is likely to be present in the area.				
	azoxystrobin AzoxyStar Quadris 2.08F	11	 6–15.5 fl oz 6.2–15.4 fl oz	4 H/ 14 D	
	azoxystrobin + *difenoconzole* Quadris Top SBX	11 + 3	 7–7.5 fl oz	12 H/ 14 D	
	azoxystrobin + *propiconazole* Cover XL Quilt	11 + 3	 10.5–21.1 fl oz 14–20 fl oz	12 H/ 21 D	Cover XL: Apply up until the R6 growth stage.
	benzovindiflupyr (*solatenol*) + *azoxystrobin* + *propiconazole* Trivapro	7 + 3 + 11	 13.7–20.7 fl oz	12 H/ 14 D	For management of soybean rust and other foliar diseases. Pre-harvest intervals is 14 days or R6 growth statge, whichever is longer.
	bixafen + *flutriafol* LUCENTO	7 + 3	 3.0–5.5 fl oz	12 H/ 21 D	Do not apply more than 11.0 fl oz per year.
	chlorothalonil Bravo Ultrex Bravo Weather Stik Echo 90DF Echo 720 Equus 720 Equus DF	M5	 0.9–2.2 lb 1–2.25 pt 0.875–2 lb 1–2.25 pt 1–2.25 pts 0.9–2.2 lb	12 H/ 42 D Equus DF: 12 H/ —	For management of foliar diseases of soybean, but not recommended for management of soybean rust.
	cyproconazole Alto	3	 2.75–5.5 fl oz	12 H/ 30 D	For control of soybean rust, use 2.75–4 fl oz/A. For other foliar diseases use 4–5.5 fl oz/A.
	difenoconazole + *pydiflumetofen* Miravis Top	3 + 7	 13.7 fl oz	12H/ 14D	
	fluoxastrobin Evito	11	 2–5.7 fl oz	12 H/ 30 D	For management of soybean rust and other foliar diseases.

SOYBEAN DISEASE CONTROL

DISEASE	CHEMICAL	MOA	RATE PER ACRE	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Foliar Diseases (*continued*)	*fluoxastrobin* + *tebuconazole* Evito T	11 + 3	4–6 fl oz	12 H/ 30 D	For management of soybean rust and other foliar diseases.
	fluoxastrobin + *tetraconazole* Zolera FX	3 + 11	4.4–6.8 fl oz	12H/ 30D	Use no more than once during a season. Do not apply after growth stage R5 (beginning seed development). Do not use where soybeans are grown for consumption of immature pods.
	flutriafol Topguard	3	7–14 fl oz	12 H/ 21 D	For management of soybean rust and other foliar diseases.
	flutriafol + *fluoxastrobin* TopGuard EQ	3 + 11	5–7 fl oz	12 H/ 30 D	Maximum of 2 applications per season no later than growth stage R5 (beginning seed). Do not apply Fortix within 21 days of harvest for dry beans or 30 days before harvest for seed. For management of soybean rust and other foliar diseases and for suppression of southern blight.
	picoxystrobin Aproach	11	6–12 fl oz	12 H/ 14 D	There should be no more than two sequential applications of Aproach before shifting to a fungicide with a different mode of action. The 6–12 fl oz/A rate should initially be applied prior to disease development. Do not apply Aproach within 14 days of grain harvest. For management of soybean rust and other foliar diseases.
	picoxystrobin + *cyproconazole* Aproach Prima	11 + 3	5–6.8 fl oz	12 H/ 30 D	There should be no more than two sequential applications of Aproach Prima before shifting to a fungicide with a different mode of action. The 5–6.8 fl oz/A rate should initially be applied prior to disease development. Do not apply Aproach Prima within 30 days of grain harvest.
	propiconazole Tilt, Bumper	3	4–6 fl oz	12 H/ —	Apply up to R6 growth stage.
	prothioconazole + *trifloxystrobin* + *fluopyram* Delaro Complete	3 + 11 + 7	8–11 fl oz/A	12 H/ 21 D	
	pyraclostrobin Headline	11	6–12 fl oz	12 H/ 21 D	Although "Headline SBR" is no longer available commercially, growers can tank mix 3.1 fl oz *tebuconazole* with 4.7 fl oz Headline to create a similar product. For management of foliar disease including Asian soybean rust.
	pyraclostrobin + *fluxapyroxad* Priaxor	11 + 7	4–8 fl oz	12 H/ 21 D	For management of foliar diseases of soybean; no more than 2 applications in a season.
	pyraclostrobin + *mefentrifluconazole* Veltyma	11 + 3	7–10 fl oz	12H/ 21D	Do not apply more than 20 fl oz/A of Veltyma per year.

DISEASE	CHEMICAL	MOA	RATE PER ACRE	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Foliar Diseases (*continued*)	*pyraclostrobin* + *mefentrifluconazole* + *fluxapyroxad* Revytek	11 + 3 + 7	8–15 fl oz	12H/ 21D	Do not make more than 2 applications per year and do not apply more than 30 fl oz/year.
	tebuconazole Various brands	3	3–4 fl oz	12 H/ 12 D	For management of soybean rust and other foliar diseases.
	tebuconazole + *azoxystrobin* Custodia	3 + 11	8.6 fl oz	12 H/ 21 D	
	tetraconazole Domark 230 ME	3	4–5 fl oz	12 H/ —	Do not apply after R5 growth stage.
	tetraconazole + *azoxystrobin* Affiance	3 + 11	10–14 fl oz	12 H/ 14 D	
	thiophanate methyl Topsin-M 4.5 FL Topsin-M 70WP	1	10–20 fl oz 0.5–1 lb	24 H/ 21 D	Controls frog eye leaf spot and other foliar diseases but NOT soybean rust.
	trifloxystrobin + *propiconazole* Stratego	11 + 3	10 fl oz 4–4.65 fl oz	12 H/ 21 D	For management of soybean rust and other foliar diseases.
	trifloxystrobin + *prothioconazole* Stratego YLD	11 + 3			Do not apply more than three times in a season.

SOYBEAN NEMATODE TREATMENT

Bob Kemerait, Extension Plant Pathologist

CHEMICAL	RATE/ACRE (36" ROW BASIS)		OZ/1000 FT. OF ROW ANY ROW SPACING	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
	AMOUNT OF FORMULATION	ACTIVE INGREDIENT			
Pre-plant Injected: Telone II	3 gal			5 D post application/ —	Inject 12" below the soil surface. Wait 2 weeks between application and planting when using Telone II.
AVICTA Complete Beans				48 H/ —	AVICTA Complete Beans is a new seed-treatment product that includes Avicta 500FS for management of nematodes. See label for further details.
BIOST Nematicide 100	3–4 fl oz/CWT				BIOST Nematicide 100 is nematicide seed treatment derived from the bacterium, *Burkholderia rinojensis*. The active ingredient is 'Heat Killed' *Burkholderia rinojensis* and spent fermentation media that contains enzymes and toxins that have broad spectrum activity on nematodes and activity on soil-dwelling insects.
Vydate C-LV	17–34 fl oz	7.1–14.3 fl oz	1.17–2.34 fl oz	48 H/ —	Apply in furrow in 7–10" band (incorporated 2–4") in 10–20 gal/water/A.
AgLogic 15G	5–7 lb/A				Apply granules in seed furrow and immediately cover with soil by mechanical means. Granules may be applied in seed furrow if rate does not exceed 5.5 oz/1000 feet of row OR if rate exceeds 5.5 oz/1000 feet of row (6 lb/A on 30" rows), apply a 4–6" band over open seed furrow and immediately cover with soil by mechanical means. For a nematode rate at 7 lb/A, apply a 4–6" band (T Band) over open seed furrow and immediately cover with soil by mechanical means.
Velum	3–6 fl oz/A				

Nematode-resistant varieties are available and can usually be grown without a nematicide. Some data suggests that nematicides may increase the yield of resistant varieties when nematode pressure is high.

NEMATICIDE	RELATIVE EFFECTIVENESS RATING
Telone II	excellent
AgLogic 15G	fair–good
Vydate	poor–fair

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
Minimum till, strip-till, and no-till burndown options	*glyphosate* Various trade names 3 lb ae/gal 3.73 lb ae/gal 4 lb ae/gal 4.17 lb ae/gal 4.50 lb ae/gal 4.80 lb ae/gal 5 lb ae/gal	9	 16–128 oz 13–103 oz 12–96 oz 11.7–92 oz 11–85 oz 10–80 oz 10–77 oz	0.38–3.0 ae	4 H/ 7 D	Controls most emerged annual grass and broadleaf weeds. *Glyphosate* rates vary according to weed species, weed size and spray volume. Refer to the individual product labels for additional information. Use of tank-mixes with *glyphosate* for bermudagrass or johnsongrass control in minimum tillage systems is not recommended. The higher rates are suggested for johnsongrass and bermudagrass control. The use of *ammonium sulfate* (AMS) is only recommended where hard water (Ca, Na, Mg, K) is a concern. **Additional spray adjuvants are not required in loaded formulations.**
	paraquat 3 lb/gal	22	20–40 oz	0.47–0.94	48 H/ —	Apply during or after planting, but before crop emerges to kill emerged annual grasses and weeds. Add a nonionic surfactant at 0.25% v/v. (1 qt/100 gal spray). Apply in a minimum of 15 GPA. Refer to label for specific cautions and restrictions. Numerous tank-mixes are allowed. **Rain-free period is 30 minutes.** **Users of *paraquat* must be certified applicators and successfully complete an EPA-approved *paraquat* training**.
	glufosinate Liberty 280 2.34SL Cheetah Kong, Interline	10	32–43 oz/A	0.585–0.77	12 H/ —	Apply during or after planting, but before crop emerges to kill emerged annual grasses and weeds. Liberty will not provide adequate burndown control of small grains. Very effective for burndown control of volunteer peanuts. Can be tank-mixed with *glyphosate* or *2,4-D*. **Rain-free period is 4 hours.**
	glufosinate-P Liberty Ultra 1.76SL	10	19–29 oz	0.261–0.399	12 H/ 70 D - grain	Can be applied as a burndown treatment prior to planting or prior to emergence. Apply in 15 GPA with a medium to coarse spray droplet (226-400 microns VMD). **Rain-free period = 4 hours**. To meet ESA requirements, a minimum downwind buffer of 10' is required and 3 runoff mitigation points. The ground buffer can be reduced to 0' by using an oil-emulsion drift reducing agent @ 2.5% v/v or hooded sprayer.
	carfentrazone Aim 2EC	14	0.5–1 oz	0.008–0.016	12 H/ V10	Tank-mix with *glyphosate* or *glufosinate* for the improved control of large morninglories. Can be applied up to 24 hours after soybean planting. **Rain-free period is 6–8 hours.**
	pyraflufen ET 0.208EC ETX 0.335EC	9	 0.5–2.0 oz 0.3–1.25 oz	0.0008–0.003	12 H/ 70 D	Tank-mix with *glyphosate* or *glufosinate* for the improved control of large morninglories. Soybeans can be planted immediately. **Rain-free period is 1 hour.**
	thifensulfuron + *tribenuron* FirstShot 50SG	2	 0.5–0.8 oz	0.008–0.013 + 0.008–0.013	12 H/ —	Can be tank-mixed with *glyphosate*, *paraquat*, *glufosinate*, and *2,4-D amine*. Soybeans can be planted in 7–14 days after treatment depending on soil type (14 days for sands, loamy sands, sandy loams). Use a NIS (0.25% v/v) or COC (1% v/v). **Rain-free period not listed on label.**
	2,4-D amine Various trade names 3.8 lb/gal *2,4-D choline* Enlist One (3.8 lb ae/gal)	4	 16 oz	0.475	48 H/ —	Very effective for cutleaf evening-primrose control. Can be tank-mixed with *glyphosate*, *glufosinate*, or *paraquat* to provide broad-spectrum burndown control. Soybeans can be planted in 15 days (*amine*) or 7 days (*choline*) after application. When using Enlist One formulation, all labeled restrictions must be followed (nozzle type, boom height, wind speed, buffer zones, etc.) Land managers/applicators who use Enlist One must implement runoff protection measures according to current label. **Suggested Rain-Free Period = 4 hours.**
	dicamba Clarity, Sterling, Vision, others 4 lb/gal	4	8–16 oz	0.25–0.50	24 H/ —	Can be tank-mixed with glyphosate, paraquat, or glufosinate to improve the control of broadleaf weeds such as horseweed. Non-*dicamba* tolerant soybeans can be planted 14 days after planting (0.25 lb ae/A) or 28 days after planting (0.5 lb ae/A) if 1" of rainfall and/or irrigation has occurred since application. **Rain-free period is 4 hours.**

SOYBEAN WEED CONTROL

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
Pre-plant incorporated or preemergence	*tiafenacil* Reviton 2.83SC	14	1–2 oz	0.022–0.044	12 H/	Tank-mix with *glyphosate* or *paraquat* for faster/improved burndown control of numerous broadleaf and grass weeds. Use in combination with a MSO @ 1% v/v (1 gal/100 gal). A 25' downwind buffer from sensitive terrestrial habitats is required. Soybean may be planted at 0 days after application when applied at 1–1.5 oz/A in soils that have greater than 2% OM. If applied at 2 or more oz/A or applied to soils that are classified as coarse or sandy clay loam soil or have less than 2% OM, a 7-day plant-back restriction is required. Reviton can be tank-mixed with other Group 14 herbicides (*fomesafen, flumioxazin, sulfentrazone*). **Rain-free period = 1 hour.**
	pendimethalin Prowl/Pendimax 3.33EC Prowl $H_2$0 3.8ASC	3	19–38 oz 24–34 oz	0.5–1 0.71–1	24 H/ 85 D	For annual grasses and small seeded broadleaf weed control. Soil incorporate 2" deep within 7 D of application. Mechanical incorporation is not required if rain of 0.5" or more occurs within 7 D of application.
	trifluralin Treflan, others 4 lb/gal	3	16–32 oz	0.5–1	12 H/ —	For annual grasses and small-seeded broadleaf weed control. Soil incorporate 2–3 inches deep within 24 hours of application. Treflan should be applied within 4 weeks of planting. Rates should be adjusted for soil type. Refer to specific herbicide label for use information.
	metribuzin Mauler, Metri, Metribuzin, Tricor 75DF 4F	5	5.3–8 oz 8–12 oz	0.25–0.38	12 H/ 70 D	Incorporation should be shallow (1–2") to prevent placement of herbicide in soybean seed zone. **Do not use on sands! Do not use on loamy sands or sandy loams if OM is < 1%.** Use the low rate on coarse soils. **Do not** apply to sensitive soybean varieties. Refer to soybean seed label for information on sensitivity to *metribuzin*. Do not apply with soil-applied organic phosphate pesticides such as Di-Syston, Thimet, OR Lorsban, as soybean injury may occur regardless of soybean variety. Can be tank-mixed with Treflan or Prowl for broader spectrum weed control. A split treatment of ½–⅔ the normal rate of *Metribuzin* incorporated followed by the remaining ½–⅓ rate after planting may be used. This split treatment may lessen the injury potential compared to a full rate incorporated and may increase consistency of control over that of a pre-emergence treatment. Do not use increased rates when splitting the application. **Refer to the end of this section for an up-to-date list of soybean varieties that have exhibited acceptable tolerance to *metribuzin*.**
	metribuzin + *chlorimuron* Canopy, Cloak 75DG Canopy Blend 58DG	5 + 2	6–10 oz 7.75–12.4 oz	0.24–0.40 + 0.04–0.07	12 H/ —	Canopy may be soil incorporated or applied pre-emergence for control of several broadleaf weeds. **The rate of application varies with soil type and OM (refer to labels for specific rates).** Not recommended for use on sands and any other coarse soil types with < 1% OM. Incorporation should be 1–2" deep. Canopy may be tank-mixed with Prowl or Treflan for broader spectrum weed control. Refer to Remarks and Precautions discussion of *metribuzin* for sensitive soybean varieties and potential herbicide-insecticide interactions. Soybean injury expressed as stunting has been observed. **Refer to the end of this section for an up-to-date list of soybean varieties that have exhibited acceptable tolerance to *metribuzin* in UGA tests.** Rotation restrictions: soybeans—0 months; barley, wheat, rye—4 months; field corn—9–10 months; cotton, tobacco, sorghum—10–18 months; peanuts—8–18 months (see label); canola, onions—18 months. Crop injury can be minimized (not eliminated) by planting a *metribuzin* tolerant + STS/SRS soybean variety.
	metribuzin + *s*-metolachlor Boundary 6.5 lb/gal	5 + 15	19–34 oz	0.19–0.33 + 0.94–1.64	12 H/ —	Incorporate uniformly within top 2" of soil. Not recommended for use on sands or any other coarse soil types with < 1% OM. Follow rate restrictions for soil type, pH, varieties, etc., listed under remarks and precautions for metribuzin. **Refer to the end of this section for an up-to-date list of soybean varieties that have exhibited acceptable tolerance to *metribuzin*.** Rotation restrictions: soybeans—0 months; barley, wheat—4 months; canola, corn, cotton, peanuts, sorghum, tobacco, tomato—12 months; onions—18 months.

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
Pre-plant incorporated or preemergence (*continued*)	*imazethapyr* Pursuit 2AS 70DG	2	 4 oz 1.44 oz	0.063	4 H/ 85 D	Controls several annual broadleaf weeds and suppresses nutsedge. May be tank-mixed with Prowl or *trifluralin* for improved annual grass control. Incorporate to a depth of 1–2". Pursuit should only be applied 1 time per year to soybeans. **Do not** apply Classic, Canopy, Scepter, Scepter O.T., or use Pursuit either pre-emergence or post-emergence on fields previously treated with Pursuit. Refer to the label for rotation restrictions.
	flumetsulam Python 80WDG	2	0.9–1 oz	0.045–0.05	12 H/ —	Controls a wide range of broadleaf weeds. Incorporate 2"–3" inches deep. Tank-mix with herbicides such as Treflan or Prowl for the control of annual grasses. Crop rotational restrictions are: corn—0 months; small grains—4 months; tobacco—9 months; cotton—18 months; onions, canola—26 months.
	sulfentrazone + *metribuzin* Authority MTZ 45DG	14 + 5	12–14 oz	0.135–0.156 + 0.20–0.24	12 H/ —	General broadleaf weed control with minimal control of annual grasses. Follow same precautions as for other *metribuzin* herbicides discussed above. **Do not** use on sands or any other coarse soils with less than 1% OM. Do not use on soils with a soil pH > 7.5. **Do not** incorporate deeper than 2". **Refer to the end of this section for an up-to-date list of soybean varieties that have exhibited acceptable tolerance to metribuzin.** Rotational crop restrictions: barley, field corn, wheat—4 months; peanuts, sorghum, tobacco—12 months; cotton—18 months. *Sulfentrazone* is also available in other premixes: **Authority Assist** (*sulfentrazone* + *imazethapyr*); Authority Elite (*sulfentrazone* + *S-metolachlor*); Authority First (*sulfentrazone* + *chloransulam*) Authority XL (*sulfentrazone* + *chlorimuron*); Spartan Advance (*sulfentrazone* + *glyphosate*); and Spartan Charge (*sulfentrazone* + *carfentrazone*).
	sulfentrazone + *chlorimuron* Authority XL 70DG	14 + 2	3–6 oz	0.117–0.233 + 0.015–0.029	12 H/ —	**Do not use on soils classified as sands.** Provides residual control of several broadleaf weed species including pigweed, morningglory, and prickly sida. **Do not incorporate deeper than 2".** Can be tank-mixed with Prowl or Treflan to improve the control of annual grasses. Crop rotation restrictions (soil pH < 6.8): soybeans, peanuts—anytime; small grains—4 months; field corn, sorghum, tobacco—10 months; cotton—12–18 months*; canola—36 months. ***Some UGA research suggests that the cotton rotation restriction should be 18 months. Crop injury can be minimized (not eliminated) by planting an STS/SRS soybean variety.**
	ethalfluralin Sonalan HFP 3EC	3	24–32 oz	0.56–0.75	24 H/ —	Uniformly incorporate into top 2–3" of soil within 48 hours of application. **Do not** plant soybeans deeper than 2". Can also be applied PRE after planting and incorporated with 0.5–1" of rainfall or irrigation within 48 hours after application.
Preemergence	*linuron* Lorox 50DF Linex 4L	7	 1–2 lb 1–2 pt	0.50–1	24 H/ —	Provides good control of Florida beggarweed, common ragweed, and pigweed. **Do not** use on sands or loamy sands and/or soils with less than 1% OM. Sicklepod will not be controlled effectively with Lorox or Linex. Linuron may be tank-mixed with Lasso, Dual, or Prowl. Plant soybeans at least 1.5" deep to reduce injury.
	metribuzin + *s*-metolachlor + *chloransulam* Tendovo 4.177ZC	5 + 15 + 2	38–48 oz	0.19–0.24 + 1.03 + 1.30 + 0.019–0.024	12 H /75 D	Can be applied PPI (2") or PRE. Will provide weed control similar to Boundary (*metribuzin* + *S-metolachlor*) with slightly better control of annual morningglory and sicklepod. Do not use on coarse soils with less than 1% OM. Plant soybeans at least 1.5". Use a metribuzin-tolerant variety. Do not apply to emerged soybeans. Crop rotation restrictions: soybeans = 0 months; wheat = 4.5 months; field corn = 9 months; barley, oats, cotton, peanut, sorghum = 12 months; sweet corn, tobacco = 18 months; sunflower = 30 months.
	metolachlor Stalwart, Parallel PCS, Me-Too-Lachlor *s*-metolachlor Dual Magnum 7.62E	15	16–21 oz 16–21 oz	1–1.33 0.95–1.27	24 H/ 90 D	Can be applied PPI, PRE, or POST. *The generic formulations of *metolachlor* (Parallel PCS, 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. Dual Magnum can also be applied post-emergence in soybeans. The total Dual Magnum rate applied PPI, PRE, or POST during any one crop should not exceed 2.6 pt/A.

SOYBEAN WEED CONTROL

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
Preemergence (*continued*)	*flumioxazin* 51WDG Valor Valor EZ Panther Rowel Outlflank	14	2–3 oz	0.064–0.096	12 H/ —	Provides good to excellent control of many annual broadleaf weeds. Will **not** control grass weeds, nutsedges, cocklebur, and sicklepod. Apply as a pre-emergence treatment only. **Do not apply to emerging soybeans.** Should be tank-mixed with Command or Prowl/Pendimax. **Do not use in the same field with Axiom, Domain, Intrro/Micro-Tech, Dual, or Frontier/Outlook or severe injury can occur.** Can also be tank-mixed with *glyphosate* for use as a pre-plant burndown in reduced tillage production systems. Refer to label for specific rotation restrictions. RedEagle-*flumioxazin* is another dry formulation that also has not been adequately tested by UGA.
	pyroxasulfone Zidua 4.17SC	15	2.45–3.25 oz	0.089–0.106	12 H/ —	Zidua may be applied PPI, PRE, or early post-emergence (V1–V3) for the residual control of certain annual grasses and Palmer amaranth. **DO NOT APPLY BETWEEN EMERGENCE THRU UNIFOLIOLATE STAGE.** On lighter soils, soil applications of Zidua may cause temporary soybean stunting. POST applications may cause stunting and leaf burn. Pre-slurry in water before adding to larger spray tank. Crop rotation restrictions for Zidua are as follows: corn, soybeans—0 months; cotton, peanuts, wheat—4 months; canola, tobacco—18 months.
	pyroxasulfone + *flumioxazin* Fierce 76WG	15 + 14	3 oz/A	0.080 + 0.063	12 H/ —	Apply pre-emergence within 3 days of soybean planting. Do not tank-mix with Intrro, Micro-Tech, Dual Magnum, or Outlook. Will provide residual control of annual broadleaf weeds and certain grasses. May cause early season stunting. Crop rotation restrictions: cotton—45 days (conventional till), 30 days (reduced tillage); field corn—7 days (reduced/ minimum/ no-till), 30 days (conventional till); soybean—0 months; wheat—30 days; peanuts—4 months; other crops—18 months.
	flumioxazin + *chlorimuron* + *thifensulfuron* Envive 41.3DG	14 + 2 + 2	2.5–4 oz	0.046–0.073 + 0.014–0.023 + 0.0045–0.007	12 H/ —	A three-way mixture of Valor + Classic + Harmony GT. **Do not** tank-mix with Boundary, Micro-Tech, Intrro, Dual, Outlook or Warrant within 14 days of planting soybeans unless soybeans are planted under no-till or minimum tillage conditions on wheat stubble or no-till field corn stubble. Can be tank-mixed with Prowl to improve grass control. **Do not** use on soil types with less than 0.5% OM. **USE LOW RATE ON COARSE SOILS**. **Do not** irrigate when soybeans are cracking. Crop injury may occur on poorly drained soils under cool, wet conditions. Excessive rainfall following soybean emergence may also result in temporary crop injury. Cool, cloudy, wet weather may also cause soybean stunting. **Crop injury can be minimized (not eliminated) by planting an STS/SRS soybean variety**. Rotation restrictions: soybeans—anytime; small grains—4 months; peanuts—8 months; cotton, field corn—10 months; sorghum—12 months.
	acetochlor Warrant 3ME	15	40–48 oz	0.94–1.125	12 H/ —	Will provide control of certain annual grasses and small-seeded broadleaf weeds including Palmer amaranth. May be applied pre-plant, at-planting, pre-emergence or EPOST (R2). Mechanical incorporation is not recommended. If PRE and POST applications of Warrant are made, **do not** exceed 4 qt/A/season of Warrant. Warrant is also labeled for center-pivot applications. For the following soil types, **do not** apply Warrant within 50 feet of any well where the depth to groundwater is 30 feet or less: sands < 3% OM; loamy sands < 2% OM; sandy loams < 1% OM. These restrictions **do not** apply for areas more than 50 feet from a well or if groundwater is more than 30 feet below land surface. Warrant can be tank-mixed with Valor (*flumioxazin*).

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE: AMOUNT OF FORMULATION	BROADCAST RATE/ACRE: POUNDS ACTIVE INGREDIENT	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Preemergence (*continued*)	*s*-metolachlor + metribuzin + *fomesafen* Intimidator 4.81EC	15 + 5 + 14	 30–38 oz	0.81–1.02 + 0.18–0.23 + 0.16–0.20	24 H/ 90 D	Apply PRE for the control of certain annual broadleaf and grass weeds, including Palmer amaranth. Can also be applied PPI. Plant soybeans at least 1.5" deep. **Only for use on *metribuzin*-tolerant soybean varieties.** Refer to the end of this section for an up-to-date list of soybean varieties that have exhibited acceptable tolerance to *metribuzin* in UGA field tests. **Do not use on sand, sandy loam, or loamy sand soils with < 1% OM.** Crop rotation restrictions: soybeans—anytime; wheat—4.5 months; field corn—10 months; cotton, sorghum—12 months; peanuts—18 months.
	pyroxasulfone + *fluthiacet* Anthem Maxx 4.3SC	15 + 14	 2–2.5 oz	0.052–0.065 + 0.0016–0.002	12 H/ 60 D	Can be applied PRE or early post-emergence (up to V6). Provides residual control of certain annual grasses and broadleaf weeds. Can be tank-mixed with glyphosate, Liberty, Cobra. POST applications will cause leaf burn/speckling. Rotation restrictions for ≤ 3.25 oz/A: corn, soybeans—0 months; cotton—2 months; peanuts—2 months; wheat—1 month; grain sorghum—6 months. Rain-free period is 1 hour.
	flumioxazin + *chloransulam* Surveil 48WG	14 + 2	 2.8–4.2 oz	0.063–0.095 + 0.021–0.032	12 H/ 60 D	Surveil contains the same active ingredients as Valor (*flumioxazin*) and FirstRate (*chloransulam*). Use 2.8 oz/A on lighter soils. Plant soybeans at least 1.5" deep. Apply up to 3 days after planting and prior to soybean emergence. **Do not tank-mix with Warrant, Dual, Zidua, or Outlook.** Crop rotation restrictions: soybeans—0 months; field corn, cotton, peanuts, sorghum—9 months; tobacco—see label.
	dimethenamid-P Outlook 6EC	15	12.8 oz	0.60	12 H	No grazing/feeding permitted. Can be applied PRE and/or POST (V5) for the residual control of annual grasses, yellow nutsedge (supression), and Palmer amaranth. Weed control similar to other Group 15 herbicides such as Dual Magnum, Warrant, Zidua, Anthem.
Postemergence	Application of post-emergence herbicide treatments to moisture stressed weeds will usually result in poor control.					
	bentazon Basagran 4L Depend 4L Leader 4L Broadloom 4L Basagran 5L	6	 24–32 oz 24–32 oz 24–32 oz 24–32 oz 19–26 oz	0.75–1	48 H/ —	Apply to soybeans at the second or third trifoliate (V2 or V3) leaf stage, but before weeds exceed 2–4" in height (14–21 days after planting). Anon-phytotoxic oil concentrate (1 qt/A) should be added depending on the weed species as specified on the label. Basagran can be tank-mixed with Blazer. **Rain-free period is 4 hours.** Soybeans are tolerant of Basagran at all stages ofgrowth.
	acifluorfen Ultra Blazer 2SL	14	 24 oz	0.38	48 H/ 50 D	Blazer requires a nonionic surfactant (1 qt/100 gal) to be added to the spray tank when used alone and when tank-mixed with Basagran. Apply to soybeans at the second or third trifoliate (V2 or V3) leaf-stage, but before weeds have morethan 4–6 true leaves (14–21 days after planting). Control of larger weeds may bepoor. Ultra Blazer can be tank-mixed with Classic, or Basagran. **Rain-free period is 4 hours.**
	lactofen Cobra 2EC	14	 12.5 oz	0.20	12 H/ 45 D	Apply to soybeans in the first or second trifoliate leaf stage if weeds are in the 2–6 leaf stage. Add a crop oil concentrate at 0.25% to 1% v/v depending on humidity (refer to label). With aerial applications, the use of 1 qt/A of crop oil concentrate is required. Do not apply Cobra when crop or weeds are under stress of drought. Crop injury expressed as leaf burn and/or suppression may occur. This injury is usually temporary but may cause lasting effects to late planted (after July 1) soybeans especially if the application is followed by a period of drought stress. Cobra can be tank-mixed with Basagran and Classic. **Rain-free period is 30 minutes. Do not** apply Cobra after growth stage R6 (full seed).

SOYBEAN WEED CONTROL

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
Postemergence (*continued*)	*fomesafen* Reflex/Dawn/TopGun 2 lb/gal Sinister 2.87SL	14	 24 oz 17 oz	0.38	24 H/ 45 D	Apply when soybeans have reached at least the V1 stage of growth. Apply Reflex when weeds are small and not stressed from dry weather. Application should be made when weeds have 1–4 true leaves (14–21 days after planting). Add a nonionic surfactant (0.25 % v/v) or crop oil concentrate (1% v/v) to the spray mixture. Can be tank-mixed with *glufosinate* or certain formulations of *glyphosate*. **However, avoid tank-mixing Reflex with *potassium salt* formulations of *glyphosate* (Credit Extreme, Roundup Original MAX, Roundup WeatherMAX, Roundup PowerMAX, Touchdown HiTech, Touchdown Total, Touchdown CT2, Traxion). Rain-free period is 1 hour.** Rotational crop restrictions: cotton, soybean—0 months; small grains—4 months; field corn, peanuts, sorghum, tobacco—10 months. Reflex can also be applied PRE but POST applications are preferred.
	imazethapyr Pursuit 2 lb/gal 70 DG	2	 4 oz 1.44 oz	0.063	4 H/ 85 D	Pursuit may be applied anytime after soybean emergence until R1 stage but before weeds exceed 3 inches. Add 0.25% v/v NIS. After application wait at least 10 days before cultivation. **Do not** apply Pursuit if Canopy, Scepter, or Pursuit was used as a pre-plant incorporated or pre-emergence treatment. Refer to the label for rotational restriction. **Rain-free period is 1 hour.**
	bentazon + *acifluorfen* Storm 4 lb/gal	6 + 14	 24 oz	0.5 + 0.25	48 H/ 50 D	Apply to soybeans at the first or second trifoliate leaf but before weeds exceed the 4 true-leaf stage. A crop oil concentrate or surfactant should be used at the rate of 1–2 pt/A. Any crop injury should be temporary. **Rain-free period is 4 hours.**
	cloransulam FirstRate, Amplify 84WD	2	 0.3–0.6 oz	0.016–0.032	12 H/ Forage/Hay 25 D Grain 70 D	Controls a wide range of annual broadleaf weeds (except prickly and arrowleaf sida, common lamsbsquarters, black nightshade, and pigweed). May be applied from soybean emergence up to R2 (an open bloom at one of the 2 uppermost nodes). Add either 0.25% v/v nonionic surfactant or 1% v/v crop oil concentrate to the spray mix. May be tank-mixed with Blazer, Basagran, Cobra, Reflex, Pursuit, *glyphosate*, or post-emergence grass herbicides. Maximum total in-crop use rate/year is 1.05 oz/A. Rotational crop restrictions: soybeans—0 months; wheat—3 months; field corn, cotton, peanuts, sorghum, oats—9 months. **Rain-free period is 2 hours.**
	chlorimuron Classic 25DF	2	 0.5–0.66 oz	0.008–0.01	12 H/ 60 D	Apply over-the-top after soybeans have their first trifoliate leaf (V1) but no later than 60 days before soybean maturity. The addition of a nonionic surfactant at 0.25% by volume is required. Crop oil concentrate may be substituted for nonionic surfactant, but may increase soybean injury. Control of sicklepod is consistently better if *chlorimuron* is used following a pre-plant incorporated or pre-emergence treatment of *metribuzin*. Do not apply when soybeans or weeds are under temperature or drought stress. Classic can be tank-mixed with *glyphosate* for improved control of morningglories and other broadleaf weeds in **Roundup Ready soybeans only.** When tank-mixed with *glyphosate*, apply Classic at 0.25–0.33 oz/A. Crop rotation restrictions: cereal grains—3 months; field corn—7 months; tobacco—9 months; peanuts—6 months; cotton—8 months; sweet potatoes—10 months; other vegetable crops—18–30 months (check label). **Rain-free period is 1 hour.** Less soybean injury will be observed from Classic on varieties that are designated SRS/STS/Bolt.

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
Postemergence (*continued*)	*thifensulfuron* Harmony SG 50SG	2	⅛ oz	0.004	4 H/ 60 D	Salvage treatment for the control of Palmer amaranth (pigweed) that is **NOT** ALS-resistant. Can be applied any time after the first trifoliate leaf has expanded but no later than 60 days before harvest. Use in combination with NIS (0.25% v/v) or COC (1% v/v) and nitrogen (32-0-0/28-0-0 at 1 qt/Aor AMS at 3 lb/A). Can be tank-mixed with *glyphosate* for use in RR soybeans. Rotational crop restrictions: wheat, barley, oats, triticale, soybeans, field corn—anytime; all other crops-45 days. **Rain-free period is 3 hours. Do not** tank-mix with Classic. **Harmony GT will cause soybean injury in the form of leaf and terminal burn.** **DO NOT USE HARMONY EXTRA ON SOYBEANS!** *Higher rates of Harmony SG (0.50 oz/A) can be used on STS/SR soybean varieties. **Harmony will not control ALS-resistant Palmer amaranth.
	flumiclorac Resource 0.86 EC	14	4 oz	0.027	4 H/ 14 D	**Tank-mix with *glyphosate* for improved control of tall, ivyleaf, and entireleaf morningglory in Roundup Ready soybeans only.** Must be applied with a NIS (0.25% v/v) or COC (1 pt/A) and spray grade *ammonium sulfate* (2.5 lbs/A). **Rain-free period is 2 hours.**
	glyphosate Various trade names 3 lb ae/gal 3.73 lb ae/gal 4 lb ae/gal 4.17 lb ae/gal 4.50 lb ae/gal 4.80 lb ae/gal 5 lb ae/gal	9	 24–64 oz 19–52 oz 18–48 oz 17–46 oz 16–43 oz 16–40 oz 14–38 oz	0.56–1.50 ae	4 H/ 14 D	**Apply *glyphosate* over-the-top of improved soybean varieties that are designated as soybeans with the Roundup Ready™ gene.** Severe injury or death of soybeans will result if any soybean varieties not designated as having the Roundup Ready™ gene are sprayed with *glyphosate*. Controls a wide range of grass and broadleaf weeds. May be applied from the cracking stage through the R2 (full-flowering) stage of soybeans. Use the low rate on weeds up to 3" tall. Higher rates are needed as weeds increase in size. For morninglories, applications should be made when morninglories are less than 3" tall. Sequential treatments may be applied provided that the maximum post-emergence (from cracking through flowering) total use rate does not exceed 2.25 lb ae/A. (ex. 2.25 lb ae/A = 2 qt/A of Roundup PowerMax or 3 qt/A of Glyfos). There are no crop rotational restrictions for *glyphosate*. Not all formulations are labeled for use on RR soybeans. Refer to specific product label. The use of *ammonium sulfate* (AMS) is only recommended where hard water (Ca, Na, Mg, K) is a concern. Additional spray adjuvants are not required in loaded formulations. **Rain-free periods vary by label/formulation:** **Roundup PowerMax3/Credit 41 Extra/Honcho K6 = 4 hours** **Mad Dog = 2-6 hours**

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
Postemergence (*continued*)	*imazethapyr* + *glyphosate* Extreme 2.17 lb/gal	2 + 9	48 oz	0.063 + 0.75	48 H/ 85 D	**Apply Extreme only to Roundup Ready soybeans.** Add a nonionic surfactant at a rate of 1 pt/100 gallons and spray grade *ammonium sulfate* (2.5 lb/A) or liquid N (1–2 qts/A). Apply before weeds exceed 8". Applications should be made before bloom. Only 1 application/year is permitted. **Cotton rotation is 18 months.** Refer to label for additional rotation intervals. Also sold as Tackle 4.128SL (Tackle use rate: 2 pt/A = 0.032 lb ai/A *imazethapyr* + 1 lb ai/A of *glyphosate*). Very effective for the control of tropical spiderwort if applied early. **Rain-free period is 1 hour.**
	s-metolachlor + *glyphosate* Sequence 5.25 lb/gal	15 + 9	48–56 oz	1.13–1.31 + 0.84–0.98	24 H/ 90 D	**Apply Sequence only to Roundup Ready soybeans.** Most effective when applied from cracking up through the 3rd trifoliate leaf stage. Very effective for the control of tropical spiderwort if applied early. **Rain-free period = 2 hours.**
	quizalofop Assure II, Targa 0.88 lb/gal	1	5–12 oz	0.03–0.08	12 H/ 80 D	Apply to annual and perennial grasses at recommended rate and stage of growth (until R3–R4 stage of growth). Use in combination with a COC (1% v/v) or NIS (0.25% v/v). The maximum amount that can be used in a single season is 18 oz/A. Tank-mixtures with broadleaf herbicides may reduce grass control. **Rain-free period is 1 hour.**
	sethoxydim Poast 1.5 lb/gal Poast Plus 1 lb/gal	1	16–24 oz 24–36 oz	0.19–0.28	12 H/ 75 D	Apply with a crop oil concentrate (1 qt/A) over the top of annual grasses and crop. Refer to label for suggested stage of application. Many tank-mixes will reduce the activity of Poast. Apply with a crop oil concentrate for control of rhizome johnsongrass when 15–20 inches tall. If regrowth occurs or new plants emerge, a second application of 1.5 pts/A may be used at the 6–10" stage. **Do not** apply more than 7.5 pts/A/year. **Rain-free period is 1 hour.**
	fluazifop-P Fusilade DX 2 lb/gal	1	12 oz	0.19	12 H/ 60 D	Apply with a crop oil concentrate (0.5–1% v/v) or nonionic surfactant (0.25–0.5% on a volume basis) over the top of annual grasses and crop prior to soybean bloom stage. Refer to label for suggested stage of application and specific rates. Many tank-mixes will reduce the activity of Fusilade. Apply to johnsongrass before the boot stage of growth at 8–18" high. If regrowth occurs or new plants emerge, apply a second application of 8 fl oz when the johnsongrass is 6–12" tall. **Do not** apply more than 32 oz/A/year. **Rain-free period is 1 hour.**
	clethodim Select, Arrow, others 2EC Select Max /TapOut, others 0.97EC	1	6–8 oz 12–16 oz	0.09–0.125	24 H/ 60 D	Apply to annual grasses at recommended stage of growth. A crop oil concentrate at 1% v/v should be added to the spray mix (Select/Arrow). A NIS (0.25% v/v) can be used with Select Max to reduce crop injury. **Do not** graze or feed treated soybean forage or hay to livestock. Higher rates and split applications may be needed for optimum perennial grass control (rhizome johnsongrass and bermudagrass). **Do not** exceed 32 oz/A/year for Select or 64 oz/A/year for Select Max/TapOut. **Rain-free period is 1 hour.**

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
Postemergence (*continued*)	*s*-metolachlor + *fomesafen* Prefix 5.29EC	15 + 14	32–37 oz	1.095–1.26 + 0.24–0.28	24 H/ 90 D	Apply when soybeans are in at least the V1 stage of growth. Can be tank-mixed with *glyphosate* for use on RR soybeans. Use a NIS at 0.25% v/v (1 qt/100 gal) when applying alone or in combination with *glyphosate* products that **do not** contain a built-in adjuvant. **Do not** exceed 3 pt/A of Prefix/season. **Rain-free period is 1 hour.** Prefix can also be applied PPI or PRE but POST applications are preferred. Statement is a generic formulation of *metolachlor + fomesafen*. However, this formulation is only labeled for PPI or PRE use in soybean.
	pyraflufen ET 0.208EC ETX 0.335EC	14	0.50–0.75 oz 0.30–0.60 oz	0.0008–0.0016	12 H/ Forage/Hay 7 D Grain 70 D	Can be applied over-the-top of soybeans up to V6 stage of growth. Can be tank-mixed with *glyphosate* for use in RR soybeans to improve the control of annual morningglories and certain other broadleaf weeds less than 4" tall. Additions of ET to *glyphosate* will increase soybean leaf burn but this symptom is usually temporary. **Rain-free period is 1 hour. Do not use a COC adjuvant.**
	fluthiacet-methyl Cadet 0.91L	14	0.4–0.6 oz	0.0028–0.0042	12 H/ 60 D	Tank-mix with *glyphosate* (RR soybeans) or *glufosinate* (LL soybeans) to improve the control of annual morningglory and pigweed. Additions of Cadet to *glyphosate* or *glufosinate* will increase soybean leaf injury. Soybean leaf injury will also be increased if applied to wet crop foliage (dew, rain, irrigation). Cadet can be applied from soybean emergence until R2 (full flowering). **Rain-free period is 4 hours.**
	fomesafen + *glyphosate* Flexstar GT 3.5 2.82SL	14 + 9	3.5–5.3	0.25–0.37 + 0.99–1.50	24 H/ 45 D	**Only for use on RR soybean varieties.** Use in combination with a NIS (0.25% v/v) or COC (1% v/v). Rotational crop restrictions: cotton, soybeans—0 months; small grains—4 months; field corn, peanuts, sorghum, tobacco—10 months. **Rain-free period is 1 hour.**
	glufosinate Liberty 280 2.34SL Cheetah Kong Interline	10	32–43 oz	0.585–0.77	12 H/ 70 D	**Only for use on soybean cultivars tolerant to *glufosinate* (LL, XtendFlex, Enlist).** The use of Liberty on other varieties will result in severe injury or crop death. Liberty can be applied from soybean emergence (VE) up to but not including the beginning bloom stage of growth (R1). Up to 2 applications of Liberty can be applied per season (5 days apart–POST). Apply in 15 GPA with pressure/nozzles that deliver medium to coarse droplets (226–400 microns). Do not apply more than 87 oz/A/year on soybeans. Optimum time of application for Liberty is between 9 am-6 pm. Avoid tank-mixes with grass herbicides such as Assure, Fusilade, Poast, and Select. If desired, a residual herbicide such as Dual Magnum or Warrant or Reflex can be tank-mixed with Liberty. However, tank-mixes with residual herbicides will increase crop injury. **Rain-free period is 4 hours.** * **Do not** rely exclusively on Liberty. The use of a soil residual herbicide at planting and/or post-emergence is **mandatory** for optimum weed control in the LibertyLink soybean system and to help delay the development of herbicide resistance. Cheetah Max is a combination of *glufosinate + fomesafen*.
	glufosinate-P Liberty Ultra 1.76SL	10	19–29 oz	0.261–0.399	12 H/ 70 D - grain	**ONLY APPLY TO SOYBEAN VARIETIES LABELED AS LIBERTY-LINK OR GLUFOSINATE-RESISTANT!** Can be applied from emergence up to but not including R1 (beginning bloom) stage. Apply in 15 GPA with a medium to coarse spray droplet (226-400 microns VMD). Up to 2 applications may be applied with a minimum of 5 days between applications up to a maximum of 58 oz/A/year. **Rain-free period = 4 hours.** To meet ESA requirements, a minimum downwind buffer of 10' is required and 3 runoff mitigation points. The ground buffer can be reduced to 0' by using an oil-emulsion drift reducing agent @ 2.5% v/v or hooded sprayer.

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
Postemergence (*continued*)	*acetochlor* + *fomesafen* Warrant Ultra 3.45SC	15 + 14	48–50 oz/A	1.06–1.10 + 0.236–0.244	24 H/ 45 D	Can be applied POST up until R2 (full bloom–an open flower at one of the 2 uppermost nodes) stage of soybean growth (wait until at least V1 stage). Apply with NIS at 0.25% v/v (1 qt/100 gal). Crop rotation restrictions: soybeans—0 months; cotton—1 month; wheat—4 months; field corn, grain sorghum, peanuts—10 months. Can also be applied PRE. Only 1 application/year can be made. Tank-mix with *glyphosate* for use in RR soybeans. **Rain-free period = 1 hour**
	2,4-D choline Enlist One 3.8SL	4	32 oz	0.95	48 H/ 30 D	For use only with **Enlist E3** soybean varieties. Can be applied preplant, PRE, or POST (up to R2–full flowering). Up to 1 PRE and 2 POST applications (12 days apart) can be made per year. Apply in 10–15 GPA. Must follow all labeled directions regarding nozzles, boom height, wind speed, buffers, sprayer clean-out, record-keeping, etc. Tank-mix with Liberty (glufosinate) to improve spectrum of weed control. For more information about approved tank-mixtures and nozzles: www.enlist.com ** It is extremely important to remember that starting clean, using residuals, and making POST applications before the largest pigweed in a field exceeds 3" in height will most likely result in the best weed control and help maintain the longevity of this technology! **Suggested Rain-free period = 4 hours.** **Land managers/applicators must implement runoff protection measures according to current label.**
	glyphosate + *2,4-D choline* Enlist Duo 3.3SL	9 + 4	56–76 oz	0.74–1.0 + 0.70–0.95	48 H/ 30 D	For use only with Enlist E3 soybean varieties. Can be applied preplant, PRE, or POST (up to R2-fullflowering). Up to 1 PRE and 2 POST applications (12 days apart) can be made per year. Apply in 10-15 GPA. Must follow all labeled directions regarding nozzles, boom height, wind speed, buffers, sprayerclean-out, record-keeping, etc. For more information about approved tank-mixtures and nozzles: www.enlist.com** It is extremely important to remember that starting clean, using residuals, and making POST applications before the largest pigweed in a field exceeds 4" in height will most likely result in the best weed control and help maintain the longevity of this technology! Rain-free period = 4 hours.Rain-free period = 4 hours.add **Suggested Rain-free period = 4 hours** **Land managers/applicators must implement runoff protection measures according to current label.**
	glufosinate + quizalifop Zalo 2.52 SL	10 + 1	32–43 oz	0.57–0.77 + 0.06–0.08	4 D/ 80 D	Only for use on soybean cultivars that are tolerant to *glufosinate* (LL, XtendFlex, Enlist). Will provide better control of grass weeds than *glufosinate* alone. Apply by either ground (15 GPA) or aerial (10 GPA) application from soybean emergence up to bloom or R1 growth. Apply using spray nozzles/pressure that deliver medium (226–325 microns) to coarse (326–400 microns) droplets. Applications of Zalo require the addition of either a COC (1% v/v) or NIS (0.25% v/v) and AMS. Two applications/year (10 days apart) can be applied. A maximum of 69 fl oz/ per acre per crop year of Zalo may be applied in soybean. Tank-mixing with other broadleaf herbicides will result in reduced grass control. To prevent reduced grass control, apply Zalo either 1 day before or 7 days after the broadleaf herbicide. **Rain-free period = 4 hours**.

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE: AMOUNT OF FORMULATION	BROADCAST RATE/ACRE: POUNDS ACTIVE INGREDIENT	REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
Postemergence Directed	*metribuzin* Metribuzin, Tricor 75DF 4F	5	 5.3–10.7 oz 8–16 oz	0.25–0.50	12 H/ 70 D	Do not apply until soybeans have reached the following minimum heights: Herbicide — Minimum Soybean Height Prior to Directed Spraying *metribuzin* — 8–12" *metribuzin + 2,4-DB* — 8–12" *paraquat* — 8” *2,4-DB* — 8” Rates should be adjusted to band width. At the early growth stages, do not spray unless the soybean stand is uniform in height as slow emerging soybeans will be killed. Crop oil concentrate or nonionic surfactant should also be added to spray. If weeds exceed 4" in height, the tank-mix of *2,4-DB* with *metribuzin* will improve weed control. When using *paraquat* adjust equipment to spray no higher than 3" of the soybean plant. Paraquat can also be applied in a hooded or shielded sprayer. ****DO NOT apply *metribuzin* post-directed to sensitive soybean varieties.** **Users of *paraquat* must be certified applicators and successfully complete an EPA approved *paraquat* training.**
	paraquat 3 lb/gal	22	 11–21 oz	0.25–0.50	24 H/ Forage: 46 D Seed: 15 D	
	2,4-DB 1.75 lb/gal 2 lb/gal	4	 16 oz 14 oz	0.22	48 H/ 60 D	
	carfentrazone Aim 2EC	14	 0.5–1.5 oz	0.008–0.025	12 H/ V 10	For the control of tropical spiderwort, annual morningglory, and pigweed. Apply as post-directed treatment with spray directed toward base of plant and avoid contact with soybean foliage. Use a NIS at 0.25% v/v (1 qt/100 gal). Do not feed treated soybean forage or hay to livestock.
Rope Wick	*glyphosate* Various trade names	9	 1–2 gal of water		4 H/ 7 D	Use in wiper applicators at a ratio of 1 gallon of *glyphosate* to 2 gallons of water (33% solution). For best results: 1. Mount equipment on front of tractor. 2. Maintain wick saturation. 3. Operate equipment at 2–3 mph, slower on dense weed clumps. 4. Avoid wiping weeds when wet or drought stressed. 5. Make a second application in the opposite direction. Not all formulations of *glyphosate* may be labeled for this use. Refer to specific product label.

SOYBEAN WEED CONTROL

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
Postemergence Shielded or Hooded Sprayers	*glyphosate* various trade names 3 lb ae/gal 3.73 lb ae/gal 4 lb ae/gal 4.17 lb ae/gal 4.50 lb ae/gal 4.80 lb ae/gal 5 lb ae/gal	9	 16–48 oz 13–39 oz 12–36 oz 11.7–35 oz 11–32 oz 10–30 oz 10–29 oz	0.38–1.13 ae	4 H/ 7 D	**Do not** apply until soybeans have reached the effective "chemical cultivation" treatment for emerged weeds in row middles. Hood or shield height must be adjusted so that *glyphosate* does not contact soybean green stems or foliage. Apply in a spray volume of 3–10 GPA. Not all formulations of *glyphosate* are labeled for this use. Refer to specific product label.
	paraquat 3 lb/gal	22	11–21 oz	0.25–0.50	48 H/ Forage: 46 D Seed: 15 D	**Do not** apply until soybeans have reached the following minimum height of 8". Rates should be adjusted to band width. At the early growth stages, **do not** spray unless the soybean stand is uniform in height as slow emerging soybeans will be killed. Crop oil concentrate or nonionic surfactant should also be added to spray. If weeds exceed 4" in height, the tank-mix of *2,4-DB* with *metribuzin* will improve weed control. When using *paraquat* adjust equipment to spray no higher than 3" of the soybean plant. Users of *paraquat* must be certified applicators and successfully complete an EPA approved paraquat training (https://www.epa.gov/pesticide-worker-safety/paraquat-dichloride-training-certified-applicators).
HARVEST AIDS						
Harvest Aid	*glyphosate* Various trade names 3 lb ae/gal 3.73 lb ae/gal 4 lb ae/gal 4.17 lb ae/gal 4.50 lb ae/gal 5 lb ae/gal	9	 32–64 oz 26–52 oz 24–48 oz 23–46 oz 21–42 oz 19–38 oz	0.75–1.5 ae	4 H/ 7 D	Apply after soybean pods have lost all green color. Application is usually timed 14–21 days before harvest. May be aerially applied. This treatment is not recommended for conventional soybeans grown for seed purposes. Not all formulations of *glyphosate* are labeled for this use. Refer to specific product label.
	paraquat 3 lb/gal	22	10.7 oz	0.25	48 H/ 15 D	Indeterminate Varieties: Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less. Determinant Varieties: Apply when soybeans are fully mature (full pod development, 50% leaf drop, and the remaining leaves are yellow). Mature cocklebur and drought stressed weeds are not adequately controlled by this treatment. **Do not** apply to immature soybeans. Add NIS @ 0.25% v/v (1 qt/100 gal) or COC @ 1% v/v (1 gal/100 gal). May be ground or aerially applied. Tank-mix with Aim if annual morningglories are also a problem (except smallflower). Users of *paraquat* must be certified applicators and successfully complete an EPA approved *paraquat* training (https://www.epa.gov/pesticide-worker-safety/paraquat-dichloride-training-certified-applicators).

STAGE OF APPLICATION	HERBICIDE	MOA	BROADCAST RATE/ACRE		REI/PHI (Hours or Days)	REMARKS AND PRECAUTIONS
			AMOUNT OF FORMULATION	POUNDS ACTIVE INGREDIENT		
HARVEST AIDS *(continued)*						
Harvest Aid (*continued*)	*carfentrazone* Aim 2EC	14	1.5 oz.	0.023	12 H/ 3 D	For the pre-harvest desiccation of pigweed and annual morningglories (*Ipomoea* species). Can be applied by ground or air. Use with a crop oil concentrate at 1% v/v. Can be tank-mixed with *glyphosate* or *paraquat* to improve the spectrum of control.
	saflufenacil Sharpen 2.85SC	14	1–2 oz	0.02–0.04	12 H/ 3 D	Apply when soybeans have reached physiological maturity at least 3 days before harvest. Could take 7–10 days for optimum desiccation. Use a MSO at 1% v/v (must contain at least 60% MSO) and AMS (8.5 lbs/gal). **Do not apply to soybeans grown for seed production.** Indeterminate Varieties: > 65% brown pods and > 70% leaf drop or when seed moisture is 30% or less. Determinate Varieties: soybeans are fully developed, > 50% leaf drop, remaining leaves are yellowing. Crop Rotation Restrictions: corn/sorghum/small grains-0 months; soybeans—1 month; cotton—1.5–3 months; peanuts—4–5 months **Rain-Free Period is 1 hour.**
	sodium chlorate Defol 5 (others)		154 oz	6.0	12H/7-10D	Can be applied by air (5 GPA minimum) or ground (20 GPA minimum). Use as a harvest aid to dry weeds in early maturing soybeans and to facilitate harvest. Make application 7 to 10 days before anticipated harvest date when beans are mature and ready for harvest. DO NOT graze treated fields or feed treated forage. *Sodium chlorate* works better if applied when temperature and humidity are high.
Center Pivot Irrigation Application	*metolachlor* Stalwart, Parallel PCS, Me-Too-Lachlor *s*-metolachlor Dual Magnum 7.62EC	15	16 oz 16 oz	1 0.97	24 H/ 90 D	Herbicides should be applied only through center pivot systems that water uniformly. Apply in ¼–½" of irrigation water/A. Equipment must have appropriate check valves or other suitable devices in the system to ensure that the herbicide solution cannot siphon back into water supply. Refer to labels for more specific information regarding center-pivot applications.
	metribuzin Metri, Metribuzin, Tricor 75DF 4F	5	 5.3–8 oz 8–12 oz	0.25–0.38	12 H/ 70 D	

SOYBEAN WEED RESPONSE TO HERBICIDES

Eric P. Prostko, Extension Agronomist—Weed Science

	PROWL PENDIMAX	SCEPTER	TREFLAN	SQUADRON	SONALAN	*METRIBUZIN*	PURSUIT	CANOPY	AUTHORITY MTZ	AUTHORITY XL
PRE-PLANT INCORPORATED										
PERENNIAL WEEDS										
bermudagrass	P	P	P	P	P	P	P	P	P	P
johnsongrass (rhizome)	P	P	P	P	P	P	P	P	P	P
yellow nutsedge	P	F–G	P	F–G	P	P	F–G	F	F–G	G
purple nutsedge	P	P–F	P	P–F	P	P	G	P	F–G	G
ANNUAL GRASSES										
broadleaf signalgrass	G	P–F	G	G	G	P–F	P		P	P
crabgrass	E	F	E	E	E	G	P	G	P	F
crowfootgrass	E		E	G		G	P	G		
fall panicum	E	P	E	G	E	P	P		P	F
goosegrass	E	F	E	G	E	G	P	G	P	
johnsongrass (seedling)	E	F	E	E	E	P	P	P	P	F
sandbur	E		E	G		P	P			
Texas panicum	G–E	F	G–E	G–E	G–E	P	P			F
BROADLEAF WEEDS										
bristly starbur	P	F	P	F	P	G	F	G		G
burcucumber	P	F–G	P	F–G	P	P	P	F		
citronmelon	P	P	P	P	P	F	P–F			
cocklebur	P	G	P	G	P	F	F–G	G–E	P–F	G
coffee senna	P	F	P	F	P	G	F–G	G		E
common ragweed	P	G	P	G	P	G	P	G	F	P–F
copperleaf	P	P	P	P	P	G–E		G–E		
cowpea	P	P	P	P	P	F	P	F		
crotalaria	P		P		P	G		F		
Florida beggarweed	P	P–F	P	P	P	E	P	E		E
Florida pusley	E	E	E	E	E	E	E	E		E

E—Excellent (> 90%); G—Good (80–89%); F—Fair (70–79%); P—Poor (< 70%); If no symbol is given, weed response is unknown.

	PROWL PENDIMAX	SCEPTER	TREFLAN	SQUADRON	SONALAN	*METRIBUZIN*	PURSUIT	CANOPY	AUTHORITY MTZ	AUTHORITY XL
PRE-PLANT INCORPORATED										
BROADLEAF WEEDS *(continued)*										
hemp sesbania	P	P	P	P	P	G–E	P	G–E	P	F–G
horseweed ALS-resistant *glyphosate*-resistant						G G G		G F G	G G G	
jimsonweed	P	G	P	G	P	G	G	G	F	F–G
lambsquarters	G–E	G	G–E	G–E	E	G–E	F	G–E	G–E	G–E
MORNINGGLORIES										
cypressvine	P	F	P	F	P	F–G	G	F–G		E
entireleaf	P	F	P	G	P	P–F	G	G	G–E	E
ivyleaf	P	F	P	G	P	P–F	G	G	G–E	E
pitted	P	G	P	G	P	F–G	G	G	G–E	F–G
red	P	F	P	G	P	F	G			
smallflower	P	G	P	G	P	G	E	G		E
tall	P	F	P	G	P	P–F	G	F–G		E
Pennsylvania smartweed	P	G	P	G	P	G		G	G–E	E
pigweed ALS-resistant *glyphosate*-resistant	G G G	E P E	G G G	E G E	G–E G G	G–E G–E G–E	E P E	E G–E E	G–E G–E G–E	E E E
prickly sida	P	F	P	F–G	P	G–E	G–E	G–E	G	F–G
purslane	E		E	E	E	G–E		E		G–E
redweed	P	P–F	P	F	P					F
sicklepod	P	F–G	P	F	P	F–G	P	G		P
tropic croton	P		P	P	P	G	P	G		E
tropical spiderwort	P					G	F–G	G	F	G
velvetleaf	P	P–F	P	P–F	P	G–E	G	G	P	
wild poinsettia	P	G	P	G	P	G	E	G	F	P–F

E—Excellent (> 90%); G—Good (80–89%); F—Fair (70–79%); P—Poor (< 70%); If no symbol is given, weed response is unknown.

SOYBEAN WEED RESPONSE TO HERBICIDES

	PYTHON	PROWL PENDIMAX	ZIDUA ANTHEM	DUAL MAGNUM[1]	COMMAND	WARRANT	PURSUIT	LINEX *LOROX*	*METRIBUZIN*	OUTLOOK
	PPI/PRE	PREEMERGENCE								
PERENNIAL WEEDS										
bermudagrass	P	P		P	P	P	P	P	P	P
johnsongrass (rhizome)	P	P		P	P	P	P	P	P	P
yellow nutsedge	P	P	P	F–G	P	F	F–G	P	P	F
purple nutsedge	P	P	P	P	P	P	G	P	P	P
ANNUAL GRASSES										
broadleaf signalgrass		G	F–G	F–G	E	F–G	P		P	F
crabgrass	P	G–E	G–E	G–E	E	G–E	P	G	G	E
crowfootgrass	P	G–E	G–E	G–E	G	G–E	P	G	G	E
fall panicum	P	G	G–E	G–E	G	G–E	P	G	P	G
goosegrass	P	G	G–E	G–E	G	G–E	P	G	G	E
johnsongrass (seedling)	P	G			F		P		P	F
sandbur	P	G	G–E	G–E	F	G–E	P	G		F–G
Texas panicum	P	G	F	P–F	F–G	P–F	P		P	P–F
BROADLEAF WEEDS										
bristly starbur	E	P		P		F	F	F	G	P
burcucumber	P	P		P	P	P	P	P	P	
citronmelon		P		P	P	P			F	P
cocklebur	E	P	P	P	P	P	F–G	P	F	P
coffee senna	F	P		P	F	P–F	P		G	P
common ragweed	G	P		P	F–G	P	P	G	G	F–G
copperleaf	F	P		P		P	P	P	G–E	F
cowpea	P	P		P	P	P	P	P	F	P
crotalaria		P							F	P
Florida beggarweed	F–G	P		P–F	F–G	F	P	G	E	P–F
Florida pusley	G	G		G	F–G	G	E	G	G	G–E
hemp sesbania		P		P		P	P		G–E	P

E—Excellent (> 90%); G—Good (80–89%); F—Fair (70–79%); P—Poor (< 70%); If no symbol is given, weed response is unknown.

1. The generic formulations of *metolachlor* (Parallel PCS, 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.

	PYTHON	PROWL PENDIMAX	ZIDUA ANTHEM	DUAL MAGNUM[1]	COMMAND	WARRANT	PURSUIT	LINEX *LOROX*	*METRIBUZIN*	OUTLOOK
	PPI/PRE	PREEMERGENCE								
BROADLEAF WEEDS (*continued*)										
jimsonweed	P	P		P	F–G	P	G		G	
horseweed ALS–resistant *glyphosate*–resistant	G P G								G G G	
lambsquarters	E	G		F	G–E	F	P–F	G–E	G	G
MORNINGGLORIES										
cypressvine	F–G	P					G		F–G	P
entireleaf	F–G	P		P	P	P	G	G	P–F	P
ivyleaf	F–G	P		P	P	P	G	G	P–F	P
pitted	F–G	P		P	P	P	G	G	F–G	P
purple	P	P		P	P	P	P		P	P
red	F–G	P		P	P		G		F	P
smallflower	G–E	P		P–F	G	P	E	G	G	P
tall	F–G	P		P	P	P	G	G	P–F	
Pennsylvania smartweed		P		P	G	P			G	
pigweed ALS–resistant *glyphosate*–resistant	E P E	G G G	G–E G–E G–E	G–E G–E G–E	P P P	G–E G–E G–E	E P E	G G G	G–E G–E G–E	G–E G–E G–E
prickly sida	E	P		F	G	G	G–E		G	F
purslane		E		G	G	G		G	G–E	G
redweed	G	P								
sicklepod	F–G	P		P	P	P	P	P	F–G	P
tropic croton		P		P	G	P	P		G	P
tropical spiderwort		P	G–E	G–E	F	G–E	F–G		F–G	G–E
velvetleaf	E	P		P	E	P	G		G	P
wild poinsettia	G	P		P	P	P	G–E		G	P

E—Excellent (> 90%); G—Good (80–89%); F—Fair (70–79%); P—Poor (< 70%); If no symbol is given, weed response is unknown.

1. The generic formulations of *metolachlor* (Parallel PCS, 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.

SOYBEAN WEED RESPONSE TO HERBICIDES

	FIERCE	VALOR	VALOR XLT ENVIVE	SURVEIL	REFLEX DAWN	PREFIX STATEMENT	ASSURE II	POAST	FUSILADE DX	ULTRA BLAZER	BASAGRAN BROADLOOM
	PREEMERGENCE						POSTEMERGENCE				
PERENNIAL WEEDS											
bermudagrass	P	P	P	P			G–E	F	G–E	P	P
johnsongrass (rhizome)	P	P	P	P			E	G	E	P	P
yellow nutsedge	P	P	F–G	P	G–E	G–E	P	P	P	P	G*
purple nutsedge	P	P	P–F	P			P	P	P	P	P
ANNUAL GRASSES											
broadleaf signalgrass	F–G	P	P	P	F–G	F–G	G	E	E	P	P
crabgrass	G–E	P	P	P	F–G	E	F–G	G	F	P	P
crowfootgrass	G–E	P	P	P		G	G	F–G	F	P	P
fall panicum	G–E	P	P	P		G	G	G	G	P	P
goosegrass	G–E	P	P	P		E	F–G	F–G	F–G	P	P
johnsongrass (seedling)		P	P	P			E	G–E	G–E	P	P
sandbur	G–E	P	P	P		G		G	G	P	P
Texas panicum	F	P	P	P	F	F	F–G	E	G–E	P	P
BROADLEAF WEEDS											
bristly starbur	F	F	F–G	F–G	G		P	P	F–G	F	E
burcucumber	P	P	P–F				P	P	P	F	P
citronmelon	G	G	G				P	P	P	G–E	P
cocklebur	P	P	F–G	F–G	G	G	P	P	P	G	E
coffee senna	P–F	P–F	F–G		P	P	P	P	P	P–F	G
common ragweed	G	G–E	G–E	G	G	G	P	P	P	E	G
copperleaf	G–E	G–E	G–E	G			P	P	P	G–E	P
cowpea	P	P	P				P	P	P	F	P
crotalaria	G	G	G				P	P	P	E	P
Florida beggarweed	G–E	G–E	G–E	G–E	P	P–F	P	P	P	P–F	P
Florida pusley	G	G–E	G–E	G–E	P	G	P	P	P	G	P
hemp sesbania	G	G	G–E	G	P	P	P	P	P	E	P

E—Excellent (> 90%); G—Good (80–89%); F—Fair (70–79%); P—Poor (< 70%); If no symbol is given, weed response is unknown.

	FIERCE	VALOR	VALOR XLT ENVIVE	SURVEIL	REFLEX DAWN	PREFIX STATEMENT	ASSURE II	POAST	FUSILADE DX	ULTRA BLAZER	BASAGRAN BROADLOOM
	PREEMERGENCE						POSTEMERGENCE				
BROADLEAF WEEDS *(continued)*											
horseweed ALS-resistant *glyphosate*-resistant	G G G	G G G	G G G	G G			P P P	P P P	P P P		
jimsonweed	G	G	G	G			P	P	P	E	E
lambsquarters	G	G–E	G–E	G			P	P	P	F	F
MORNINGGLORIES			F–G	G							
cypressvine	F	G	G		F	F	P	P	P	G–E	G–E
entireleaf	F	F–G	F–G	G	F	F	P	P	P	G	P
ivyleaf	F	F–G	F–G	G	F	F	P	P	P	G	P
pitted	F	F	F–G	G	F	F	P	P	P	G–E	F
purple					F	F	P	P	P	G–E	P
red	F	G	G	G	F	F	P	P	P	G–E	F–G
smallflower	F	G–E	G–E	G	G–E	G–E	P	P	P	G–E	G–E
tall	F	F–G	F–G	G	F	F	P	P	P	G	F
Pennsylvania smartweed	P–F	P–F	F				P	P	P	G	G–E
pigweed ALS-resistant *glyphosate*-resistant	E E E	E E E	E E E	E E E	E E E	E E E	P P P	P P P	P P P	G–E G–E G–E	P P P
prickly sida	G–E	G–E	G–E	G			P	P	P	P	G
purslane	G–E	G–E	G–E	G–E	G	G	P	P	P	E	G
redweed	G–E	G–E	G–E				P	P	P		G–E
sicklepod	P	P	F	F			P	P	P	P–F	P
tropic croton	G	G	G	G	F–G	F–G	P	P	P	E	P
tropical spiderwort	F–G	P–F	F	F	P	G–E	P	P	P	P	G
velevetleaf	G	G–E	G–E	G–E			P	P	P	F	G–E
wild poinsettia	F–G	F–G	F–G	F–G	G–E	G–E	P	P	P	G	P

E—Excellent (> 90%); G—Good (80–89%); F—Fair (70–79%); P—Poor (< 70%); If no symbol is given, weed response is unknown.

SOYBEAN WEED RESPONSE TO HERBICIDES

	STORM	*2,4-DB*	ENLIST ONE + LIBERTY	CLASSIC	REFLEX DAWN	COBRA	SELECT ARROW	LIBERTY CHEETAH KONG INTERLINE	*GLYPHOSATE*	ZALO
	POSTEMERGENCE									
PERENNIAL WEEDS										
bermudagrass	P	P	P	P	P	P	G–E	P	P–F	P
johnsongrass (rhizome)	P	P	P	P	P	P	E	P–F	G–E	P–F
yellow nutsedge	P	P	P	G	F	P–F	P	P	F	P
purple nutsedge	P	P	P	P–F	P	P	P	P	F–G	P
ANNUAL GRASSES										
broadleaf signalgrass	P	P	G	P	P	P–F	E	G	E	E
crabgrass	P	P	G	P	P	P–F	G	F–G	E	G
crowfootgrass	P	P	G	P	P	P	G	G	E	G
fall panicum	P	P	G	P	P	P	G	G	E	G
goosegrass	P	P	P	P	P	P	F–G	P	E	F–G
johnsongrass (seedling)	P	P	G	P	P	P	E	G	E	G–E
sandbur	P	P	G	P	P	P–F	G	G	E	G
Texas panicum	P	P	G	P	P	P	G–E	G	E	G
BROADLEAF WEEDS										
bristly starbur	G		G	G		G	P	G–E	G	G–E
burcucumber	P–F	P		G	F	F	P		E	
citronmelon	G	P	G–E			G	P	G	G	G
cocklebur	G–E	G–E	E	E	F–G	G–E	P	E	E	E
coffee senna	G	F	G–E	P	P	P–F	P		G	
common ragweed	G–E	P	G–E	G	G–E	E	P	G–E	G	G–E
copperleaf	G	P		P	G–E	G–E	P		P–F	
cowpea	P–F	P–F	E	G	F	P–F	P	G–E	F–G	G–E
crotalaria	E		G		G–E	E	P		G	
Florida beggarweed	P	P	G	E	P	P–F	P	G–E	G	G–E
Florida pusley	E		G	F	G	G	P	P–F	P–F	P–F
hemp sesbania	E	P	E	E	G	E	P	G–E	F	G–E

E—Excellent (> 90%); G—Good (80–89%); F—Fair (70–79%); P—Poor (< 70%); If no symbol is given, weed response is unknown.

	STORM	*2,4-DB*	ENLIST ONE + LIBERTY	CLASSIC	REFLEX DAWN	COBRA	SELECT ARROW	LIBERTY CHEETAH KONG INTERLINE	*GLYPHOSATE*
	POSTEMERGENCE								
BROADLEAF WEEDS *(continued)*									
horseweed ALS-resistant *glyphosate*-resistant	P P P	P P P	G–E G–E G–E	F–G P F–G	P P P	P P P	P P P	G G G	F–G F–G P
jimsonweed	E	G	E	G–E	G	E	P	G–E	G
lambsquarters	G		E	P	P–F	P–F	P	E	G
MORNINGGLORIES									
cypressvine	G–E	F	E	P	G–E	G–E	P	G–E	F
entireleaf	F–G	G	E	F–G	F	F–G	P	G–E	F
ivyleaf	F–G	G	E	F–G	F	F–G	P	G–E	F
pitted	G	G	E	G	G	G	P	G–E	P–F
purple	G	G	E	P	G–E	F–G	P	G	P–F
red	G	G–E	E	G–E	G–E	G–E	P	G–E	F
smallflower	G–E	G	E	G–E	G	G–E	P	G–E	F
tall	G	G–E	E	P–F	G	G	P	G–E	F
Pennsylvania smartweed	G–E	P	E	G	G	G–E	P	G–E	G
pigweed ALS-resistant *glyphosate*-resistant	G–E G–E G–E	F F F	E E E	F P F	G–E G–E G–E	G–E G–E G–E	P P P	F–G F–G F–G	G–E G–E P
prickly sida	G	P	G	P	P	G	P	F–G	P–F
purslane	G	G	F–G			E	P	G	G
redweed	G–E			F		F	P		G
sicklepod	P	F	E	F	P	P–F	P	G	E
tropic croton	G–E	P	E	P		E	P	G	G
tropical spiderwort	F		G–E	F			P	P–F	F
velvetleaf	F–G	P	P	G–E	F	F	P	E	G
wild poinsettia	F–G	P	G	F	F–G	G–E	P	P	G

E—Excellent (> 90%); G—Good (80–89%); F—Fair (70–79%); P—Poor (< 70%); If no symbol is given, weed response is unknown.

SOYBEAN WEED RESPONSE TO HERBICIDES

	FIRSTRATE AMPLIFY	PURSUIT	HARMONY GT XP OR SG	WARRANT ULTRA	*DICAMBA***	*2,4-DB*	*PARAQUAT*	*METRIBUZIN*	*METRIBUZIN + 2,4-DB*
	POSTEMERGENCE					POST-DIRECTED			
PERENNIAL WEEDS									
bermudagrass	P	P	P	P	P	p	P	P	P
johnsongrass (rhizome)	P	P	P	P	P	P	P	P	P
yellow nutsedge	P–F	F–G	P	P	P	P	P–F		P–F
purple nutsedge	P–F	G	P	P	P	P	P–F		
ANNUAL GRASSES									
broadleaf signalgrass	P	G	P	P	P	P	G		G
crabgrass	P	F	P	P	P	P	F	E	G–E
crowfootgrass	P	F	P	P	P	P	G	E	G–E
fall panicum	P	F	P	P	P	P	G	G	G
goosegrass	P	F	P	P	P	P	G	E	G–E
johnsongrass (seedling)	P	F–G	P	P	P	P	G	G	G
sandbur	P		P	P	P	P	G	E	G
Texas panicum	P	P	P	P	P	P	G	F	F–G
BROADLEAF WEEDS									
bristly starbur	E	F			E	G	G	G	E
burcucumber	F	P	P–F	F	F	P	G		
citronmelon		P			E	F	F	G	G–E
cocklebur	E	G–E	F	F–G	E	E	G	E	E
coffee senna		F		P	G	F–G			G–E
common ragweed	E	P		G–E	E	G	G	G	E
copperleaf	P	P		G–E		P			G–E
cowpea	P	P		F	E	P–F	G		G
crotalaria		P		G–E	G		G	E	E
Florida beggarweed	F–G	P		P	G	P	G	E	E
Florida pusley	F	P		F–G	G		F–G	G	G
hemp sesbania	P	P		G	E	P	P		G

E—Excellent (> 90%); G—Good (80–89%); F—Fair (70–79%); P—Poor (< 70%); If no symbol is given, weed response is unknown.
**Dicamba was not registered for use in-crop at the time this publication was edited. For comparison purposes only.

	FIRSTRATE AMPLIFY	PURSUIT	HARMONY GT XP OR SG	WARRANT ULTRA	*DICAMBA***	*2,4-DB*	*PARAQUAT*	*METRIBUZIN*	*METRIBUZIN + 2,4-DB*
	POSTEMERGENCE					POST-DIRECTED			
BROADLEAF WEEDS *(continued)*									
horseweed ALS-resistant *glyphosate*-resistant	G P G				G G G				
jimsonweed	P	F	F	G	E	G	G	E	G
lambsquarters	P	P	G–E	P–F	E	G	F–G	E	E
MORNINGGLORIES									
cypressvine	G	G		G–E	G	F	F	E	E
entireleaf	G	G		F	G	G	F–G	F	E
ivyleaf	G	G		F	G	G	F–G	F	E
pitted	G	G		G	G	G	F–G	G–E	G–E
purple	P–F	P		G–E	G	G			G–E
red	G	G		G–E	G	G–E	F–G	G–E	E
smallflower	G	G		G	G	G	F–G	G–E	E
tall	G	G		G	G	G–E	F–G	F	G
Pennsylvania smartweed		F–G	G–E	G	E	P	P–F		F–G
pigweed ALS-resistant *glyphosate*-resistant	P P P	E P E	G–E P G–E	G–E G–E G–E	G–E G–E G–E	F F F	F–G F–G F–G	G–E G–E G–E	G–E G–E G–E
prickly sida	P	P			E	P	P–F	E	G–E
purslane					E	G	G	G	G
redweed		F				P			
sicklepod	F	P		P	G–E	G	G	E	G–E
tropic croton	F	P			G	P	G	G	G
tropical spiderwort	F				F–G[1]		G–E		
velvetleaf	G	G			F–G	P			F
wild poinsettia	G	P–F		F		P	F–G	P–F	F

E—Excellent (> 90%); G—Good (80–89%); F—Fair (70–79%); P—Poor (< 70%); If no symbol is given, weed response is unknown.

1. When tank-mixed with *glyphosate*. On larger weeds, 2 applications will be required.

**Dicamba was not registered for use in-crop at the time this publication was edited. For comparison purposes only.

WEED AND COVER CROP RESPONSE TO BURNDOWN HERBICIDES USED IN CONSERVATION TILLAGE SOYBEAN PRODUCTIONS SYSTEMS IN GEORGIA

	GLYPHOSATE	*GLYPHOSATE* + *2,4-D AMINE* OR *CHOLINE*	*GLYPHOSATE* + *DICAMBA*[1]	*GLYPHOSATE* + AIM OR ET/ETX	*GLYPHOSATE* + FIRSTSHOT	*GLYPHOSATE* + REVITON	*PARAQUAT*	*PARAQUAT* + *2,4-D*	*PARAQUAT* + *METRIBUZIN*	*GLUFOSINATE*
Carolina geranium	P	F–G	G	F–G	G–E	F–G	G–E	G–E	G–E	G–E
chickweed	E	E	E	E	E	E	E	E	G–E	G–E
corn spurry	G–E	G–E	G–E			G–E	F–G			
crimson clover	P–F	F	F–G	F		G–E	G	G–E	G	
cutleaf evening primrose	P–F	E	G	F	F	G–E	F	E	G	G–E (mature plant)
henbit	G	E	E	E	G–E	G–E	G	E	G	F
horseweed *glyphosate*-resistant	F–G P	G–E F–G	E E	G P	G–E P	F F	F	G	G G	G
red sorrel	E	E	E			E	E	E	E	P–F
ryegrass	G	G	G	G	G	G	F	F	F–G	P
small grains	E	E	E	E	E	G	F–G	F–G	F–G	P–F
swinecress	F–G	G	F–G	F–G	G	G–E	P–F	F–G		G–E
volunteer peanut	F	F	G	F	F	F	P	P–F	F	G–E
wild radish	F–G	G–E	G–E	G	G–E	G–E	F	G–E	F	G–E (mature plant)
Soybean plant-back restriction	0 days	15 days (*amine*) 7 days (*choline*)	14–28 days 1" rainfall or irrigation	0 days	7–14 days	0–7 days	0 days	7–15 days	0 days	0 days

1. Various formulations of *dicamba* are labeled. Refer to specific labels for rates, timings, and application requirements (nozzles, buffers, GPA, boom height, tractor speed, etc.)

PREPACKAGED TANK-MIXES FOR SOYBEANS

See manufacturer's label for specific rates and application uses.

PRODUCT NAME	ACTIVE INGREDIENTS (LBS AI/GAL OR % AI)
Anthem	*pyroxasulfone* (2.087) + *fluthiacet* (0.063)
Anthem Maxx	*pyroxasulfone* (4.174) + *fluthiacet* (0.126)
Authority Assist	*sulfentrazone* (3.33) + *imazethapyr* (0.67)
Authority Elite	*sulfentrazone* (0.7) + *S-metolachlor* (6.3)
Authority First	*sulfentrazone* (62.1%) + *chloransulam* (7.9%)
Authority MTZ	*sulfentrazone* (18%) + *metribuzin* (27%)
Authority XL	*sulfentrazone* (62%) + *chlorimuron* (8%)
Axiom	*flufenacet* (54.4%) + *metribuzin* (13.6%)
Backdraft	*imazaquin* (0.25) + *glyphosate* (1.25)
Boundary	*metribuzin* (1.25) + *S-metolachlor* (5.25)
Broadstrike + Treflan	*flumetsulam* (0.25) + *trifluralin* (3.4)
Canopy	*chlorimuron* (10.7 %) + *metribuzin* (64.3 %)
Canopy Blend	*chlorimuron* (8.3%) + *metribuzin* (50%)
Canopy EX	*chlorimuron* (22.7%) + *tribenuron* (6.8%)
Canopy XL	*sulfentrazone* (46.9%) + *chlorimuron* (9.4%)
Cheetah Max	*glufosinate* (2.0) + *fomesafen* (1.0)
Commence	*clomazone* (2.25) + *trifluralin* (3.0)
Concert	*chlorimuron* (12.5%) + *thifensulfuron* (12.5%)
Detail	*imazaquin* (0.5) + *dimethenamid* (3.6)
Domain	*flufenacet* (24%) + *metribuzin* (36%)
Enlite	*chlorimuron* (2.85%) + *flumioxazin* (36.21%) + *thifensulfuron* (8.8%)
Envive	*chlorimuron* (9.2%) + *flumioxazin* (29.2%) + *thifensulfuron* (2.9%)
Extreme	*imazethapyr* (0.17) + *glyphosate* (2.0)
Fierce	*flumioxazin* (33.5%) + *pyroxasulfone* (42.5%)
Fierce XLT	*chlorimuron* (6.67%) + *flumioxazin* (24.54%) + *pyroxasulfone* (31.17%)
Fierce MTZ	*flumioxazin* (5.29%) + *metribuzin* (15.86%) + *pyroxasulfone* (6.76%)

PRODUCT NAME	ACTIVE INGREDIENTS (LBS AI/GAL OR % AI)
Flexstar GT 3.5	*fomesafen* (0.56) + *glyphosate* (2.26)
Freedom	*alachlor* (2.67) + *trifluralin* (0.33)
Fusion	*fluazifop* (2.0) + *fenoxaprop* (0.56)
Galaxy	*bentazon* (3.0) + *acifluorfen* (0.67)
Gangster	*flumioxazin* (51%) + *cloransulam* (84%)
Gauntlet	*sulfentrazone* (75%) + *cloransulam-methyl* (84%)
Kyber	*flumioxazin* (0.5) + *metribuzin* (1.5) + *pyroxasulfone* (0.64)
Passport	*trifluralin* (2.4) + *imazethapyr* (0.2)
Prefix	*fomesafen* (0.95) + *S-metolachlor* (4.34)
Pursuit Plus	*imazethapyr* (0.2) + *pendimethalin* (2.7)
Reliance STS	*thifensulfuron* (9%) + *chlorimuron* (16%)
Sequence	*glyphosate* (2.25) + *S-metolachlor* (3.0)
Sonic	*sulfentrazone* (62.1%) + *chloransulam* (7.9%)
Spartan Advance	*sulfentrazone* (0.56) + *glyphosate* (4.04)
Spartan Charge	*sulfentrazone* (3.15) + *carfentrazone* (0.35)
Squadron	*imazaquin* (0.33) + *pendimethalin* (2.0)
Steel	*pendimethalin* (2.25) + *imazethapyr* (0.17) + *imazaquin* (0.17)
Stellar	*lactofen* (2.4) + *flumiclorac* (0.7)
Storm	*bentazon* (2.67) + *acifluorfen* (1.33)
Surveil	*flumioxazin* (36%) + *chloransulam* (12%)
Synchrony XP	*chlorimuron* (21.5%) + *thifensulfuron* (6.9%)
Tackle	*imazethapyr* (0.128) + *glyphosate* (4.0)
Trivence	*chlorimuron* (3.9%) + *flumioxazin* (12.8%) + *metribuzin* (44.6%)
Typhoon	*fluazifop* (0.47) + *fomesafen* (0.94)
Valor XLT	*flumioxazin* (30%) + *chlorimuron* (10.3%)
Warrant Ultra	*acetochlor* (2.82) + *fomesafen* (0.63)
Zalo	*glufosinate* (2.29) + *quizalifop* (0.23)

SOYBEAN PRE-MIXTURES AND EQUIVALENT RATES

PRE-MIXTURE	RATE/A	EQUIVALENT RATES/A
Authority MTZ 45DG	14 oz	Spartan 4L at 5.04 oz Metribuzin 75DG at 5.04 oz
Boundary 6.5EC	24 oz	Dual Magnum 7.62EC at 16.5 oz Metribuzin75DF at 4.9 oz
Canopy 75DG	6 oz	Metribuzin 75DG at 5.1 oz Classic 25DG at 2.6 oz
Envive 41.3DG	2.5 oz	Valor 51WG at 1.44 oz Classic 25DG at 0.90 oz Harmony 75DG at 0.14 oz
Fierce 76WG	3 oz	Valor 51WG at 2.0 oz/A Zidua 4.17SC at 2.44 oz/A
Flexstar GT 3.5 2.82 SL	56 oz	Touchdown Total 4.17SL at 30.4 oz Reflex 2SL at 15.7 oz
Prefix 5.29SL	37 oz	Dual Magnum 7.62EC at 21.2 oz Reflex 2SL at 17.7 oz
Sequence 5.25SL	48 oz	Dual Magnum 7.62EC at 18.9 oz Touchdown Total 4.17SL at 25.9 oz
Surveil 48WG	2.8 oz	Valor 51WG at 2 oz/A FirstRate 84DG at 0.73 oz/A
Tendovo 4.177ZC	43 oz/A	Dual Magnum 7.62EC at 19.6 oz/A FirstRate 84WG at 0.42 oz/A Tricor 4F at 6.9 oz/A
Warrant Ultra 3.45SC	48 oz	Warrant 3ME at 45.1 oz Reflex 2SL at 15.1 oz
Zalo 2.52SL	32 oz/A	Liberty 2.34SL at 31.3 oz/A Assure II 0.88EC at 8.4 oz/A

RR CORN CONTROL IN RR SOYBEANS

HERBICIDE[1]	CORN SIZE (IN)	RATE/A (OZ)
Arrow/Select	4–12 12–24	4–6 6–8
Assure II/Targa	1–12 12–18 18–30	1–12 12–18 18–30
Fusilade	12–24	6–8
Poast	1–12 12–20	12 16
Poast Plus	1–12 12–20	18 24
SelectMax/TapOut	4–12 12–18 18–24	8–12 10–14 12–16

1. In RR soybean production systems, these grass herbicides can be tank-mixed with *glyphosate*.

HERBICIDE PROGRAMS FOR MANAGING VOLUNTEER COTTON IN SOYBEANS[1]

PREEMERGENCE	POSTEMERGENCE[2]	POST-DIRECTED
Canopy/Cloak 75DG (6–8 oz/A[3]) or Metribuzin 75DF (5.3–8 oz/A[3])	Reflex or Cobra or Classic	Metribuzin 4L @ 8 oz/A + NIS

1. A combination of preemergence and postemergence herbicides is needed to provide optimum control.
2. Postemergence applications should be made when cotton is 6" or less.
3. Rate depends on soil type. Refer to label.

HERBICIDE SUGGESTIONS FOR HORSEWEED (MARESTAIL) CONTROL IN SOYBEANS*

TIME OF APPLICATION	TREATMENT	COMMENTS
Pre-plant Burndown	Liberty 280 2.34SL at 32–43 oz/A** Liberty Ultra 1.76SL @ 19-29 oz/A	Use at least 15 GPA and nozzle tips/pressure that produce medium (226–325 microns) to coarse (326–400 microns) size spray droplets. Apply between 9 am–6 pm. Temperatures less than 75°F will reduce control. Labeled for 6–12" horseweed plants.
	Roundup PowerMax 5.5 SL at 22–43 oz/A + *dicamba*	Refer to *dicamba* in minimum tillage section earlier in this chapter.
	Roundup PowerMax 5.5SL at 22–43 oz/A + *2,4-D amine* 3.8SL at 24–32 oz/A	Soybeans can be planted 30 days after application.
	Paraquat 3SL @ 32 oz/A + Metribuzin/Tricor 75DF at 4 oz/A + NIS at 0.25% v/v	Apply to 6" or smaller horseweed plants. Use at least 15 GPA and flat fan nozzle tips. Plant a *metribuzin*-tolerant soybean variety.
Residual Control	Valor SX 51WG at 2–2.5 oz/A	Excellent residual control but no postemergence activity
	Python 80WG at 1 oz/A	Will not control ALS-resistant populations.
Postemergence (in-crop)	Firstrate 84DG at 0.3 oz/A + NIS at 0.25% v/v	Apply to horseweed plants that are 6" tall or less. Can also be tank-mixed with *glyphosate* in RR soybeans. Will not control ALS-resistant populations.
	Liberty 2.34 SL at 32–43 oz/A** Liberty Ultra 1.76SL @ 19-29 oz/A	**For use only in soybeans tolerant to *glufosinate* (LL, Xtendflex, Enlist).** Apply in at least 15 GPA with nozzle tips/pressure that produce medium (226-325 microns) to coarse (326–400 microns) size spray droplets. Apply between 9 am–6 pm for optimum activity. Labeled for use on 6–12" tall horseweed plants.

* Tillage is also a very effective method for controlling horseweed.

** Generic formulations of *glufosinate* are also available including Cheetah, Kong, and Interline. Cheetah Max is a combination of *glufosinate* + *fomesafen*. Generic formulations of *glufosinate* should be used with caution because limited data has been collected by UGA.

HERBICIDE PROGRAMS FOR SOYBEAN IN GEORGIA

SOYBEAN VARIETY/SYSTEM	PREEMERGENCE[1]	POSTEMERGENCE (~20–30 DAP)
Roundup Ready® (*glyphosate*)	**One** of the following: Authority MTZ; Canopy/Cloak; TriCor/Metribuzin or	*glyphosate* + Reflex; or *glyphosate* + (Prefix or Warrant Ultra); or Flexstar GT
	One of the following: Boundary; Prowl; Anthem Maxx; Dual Magnum; Warrant; Zidua; Outlook; Tendovo; Treflan (PPI) or	*glyphosate* + Reflex; or Flexstar GT
	One of the following: Authority XL; Envive; Fierce MTZ; Surveil; Trivence; Valor	*glyphosate* + (Dual Magnum or Warrant or Zidua or Anthem Maxx); or Sequence
LibertyLink® (*glufosinate*)	**One** of the following: a) Boundary or Tendovo or b) TriCor/Metribuzin + either Anthem Maxx, Dual Magnum, Outlook, Prowl, Warrant, or Zidua or	a) Liberty or Liberty Ultra + Reflex or b) Zalo
	a) Prowl + **One** of the following: Authority MTZ; Envive; Surveil; TriCor/Metribuzin; Trivence; Valor or b) Fierce or Fierce MTZ	a) Liberty or Liberty Ultra + (Dual Magnum or Warrant or Zidua) or b) Zalo
XtendFlex® (*glyphosate*, *glufosinate*, *dicamba*)	a) Prowl + **One** of the following: Authority MTZ; Canopy/Cloak; Envive; Surveil; Tricor/Metribuzin; Trivence; Valor or b) Boundary or Tendovo or c) Fierce or Fierce MTZ	a) Liberty or Liberty Ultra + Reflex or Dual Magnum or Warrant or Zidua (Avoid Reflex if Valor product was used PRE) or b) Zalo
Enlist E3™ (*2,4-D choline*, *glyphosate*, *glufosinate*)	a) Prowl + **One** of the following: Authority MTZ; Canopy/Cloak; Envive; Surveil; Tricor/Metribuzin; Trivence; Valor or b) Boundary or Tendovo c) Fierce or Fierce MTZ	a) Enlist One +Liberty or Liberty Ultra+ (Dual Magnum or Warrant or Anthem Maxx or Zidua) or b) Enlist Duo + (Anthem Maxx or Warrant or Zidua) or c) Zalo
Conventional	a) Anthem Maxx or Dual Magnum or Outlook or Prowl or Warrant or Zidua + **One** of the following: Authority MTZ; Canopy/Cloak; TriCor/Metribuzin or b) Boundary or Tendovo	Reflex; or Prefix; or Warrant Ultra (tank-mix with Classic or FirstRate if annual MG and/or sicklepod are problems)

1. Before using any *metribuzin* product in soybeans (Authority MTZ, Boundary, Canopy/Cloak, Fierce MTZ, Tendovo, TriCor, Trivence), check variety tolerance, soil pH, organic matter, and soil texture. Authority (*sulfentrazone*) products have an 18-month cotton rotation restriction.

SOYBEAN VARIETY TOLERANCE TO *METRIBUZIN* HERBICIDES

Soybean varieties that have exhibited acceptable tolerance to metribuzin herbicides (i.e. Boundary, Canopy, TriCor, etc.) based on multiple sources include the follow-in

GROUP IV	GROUP V	GROUP VI	GROUP VII	GROUP VIII
AgriGold G4190RX	AgriGold G5000RX	Asgrow AG64X8	AGS 758RR	Prichard RR
Asgrow AG47X6	AgriGold G5288RX	Asgrow AG6931	Asgrow AG7231	
Asgrow AG46X6	AGS 568RR	Asgrow AG69X0	Asgrow AG72XF0	
Asgrow AG48XFO	Asgrow AG55XFO	Asgrow AG69X6	Asgrow AG74X8	
GoSoy Leland	Asgrow AG56X8	Dyna-Gro S64LS95	Asgrow AG7535	
Pioneer P46A16R	Asgrow AG59X9	NC Dunphy	Benning	
Pioneer P46A35X	Hutcheson	Northrup King NK69-Q4XF	Dyna-Gro S72RS36	
Pioneer P46A57BX	Pioneer 95Y70	Pioneer P68A07SX	Northrup King NKS74-M3	
Pioneer P46A86X	Pioneer P51A61X	Vigoro V61N9	Northrup King NKS78-G6	
Pioneer P47A64X	Pioneer P52A05X		Pioneer P76T54R2	
Pioneer P48A99L	Pioneer P52A26R		Santee	
Pioneer P49A10S	Pioneer P55A49X		Southern Harvest 7418LL	
	Pioneer P55T81R		Stonewall	
	Pioneer P56A71E		Vigoro V74N9	
	Pioneer P59A11SX		Woodruff	

Metribuzin herbicides are NOT recommended for use on sands or other coarse soils with less than 1% OM.

***METRIBUZIN* HERBICIDE SHOULD NOT BE USED ON THE FOLLOWING SOYBEAN VARIETIES:** AG4232; AG4835; AG48X9; AG49X6; AG51X8; AG53X9; AG55XFO; AG57XFO; AG5935; AG6130; AG6730; AG69XFO; AG75X6; AG7934; AGS LL5911; Dyna-Gro S61RY93; Pioneer P47T06X, P47T36R, P49T80R, P49T97R, P53A67X, P60T95X, P65A72X, P67T25R2.

The University Arkansas conducts an extensive greenhouse soybean variety/metribuzin testing program. The latest results can be found at the following web-location:
2024 Results: **https://www.uaex.uada.edu/farm-ranch/crops-commercial-horticulture/soybean/Metribuzin-Tolerance-of-Soybean-Varieties.pdf**