WEED RESPONSE RATINGS FOR SOYBEAN HERBICIDES

(See Explanation of Rating Tables on Page 3.)

HERBICIDES	WSSA GROUP #	GRASSES								BROADLEAVES																		SEDGES	
		Barnyardgrass	Broadleaf Signalgrass	Crabgrass	Giant Foxtail and Fall Panicum	Goosegrass	Weedy rice	Rhizome Johnsongrass[1]	Seedling Johnsongrass[1]	Balloonvine	Cocklebur	Cutleaf Groundcherry	Entire and Ivyleaf Morningglories	Giant Ragweed	Hemp Sesbania (Coffeebean)	Hophornbeam Copperleaf	Horseweed[1]	Northern Jointvetch (Curly Indigo)	Palmer Amaranth[1,2,3,4]	Palmleaf Morningglory	Pitted Morningglory	Prickly Sida (Teaweed)	Sicklepod	Smartweed spp.	Spurge	Spurred Anoda	Texas Gourd/ Smellmelon	Velvetleaf	Annual Flatsedge	Yellow Nutsedge
Preemergence																													
Python	2	6	6	6	6	6	4	0	6	3	9	9	7	9	2	7	9	0	6	7	7	9	7	9	9	9	-	8	-	-
Scepter	2	6	6	6	6	6	5	3	6	5	9	9	6	9	4	6	8	0	7	9	9	7	8*	9	9	7	9	6	9	5
Trivence	2, 5, 14	7	7	7	7	7	6	4	6	7	9	9	8	8	9	9	10	8	10	10	10	9	9	10	9	9	8	9	9	8
Envive, Enlite	2, 14	7	7	7	7	7	6	4	6	7	9	9	8	8	9	9	10	8	10	10	10	9	9	10	9	9	8	9	9	5
Sonic, Authority First	2, 14	4	4	4	-	-	-	-	-	-	8	8	9	9	6	-	9	6	7	8	9	-	5	9	-	8	8	8	-	7
Surveil	2, 14	7	7	7	6	7	5	4	6	-	9	-	8	8	9	9	10	8	9	10	10	9	9	9	-	-	-	9	9	4
Engenia/Xtendimax	4	2	2	2	2	2	-	0	2	-	-	-	7	-	-	-	-	-	8	7	7	2	7	-	0	6	-	6	0	0
Metribuzin	5	6	6	6	6	6	4	0	5	7	6	9	2	9	9	9	8	7	8	7	7	7	8*	9	9	9	7	7	8	2
Valor	14	7	7	7	6	7	5	4	6	-	9	-	8	8	9	9	10	8	9	10	10	9	9	9	-	-	-	9	9	4
Authority MTZ	5, 14	6	6	6	6	-	-	0	-	-	6	-	9	7	6	-	8	7	9	-	9	8	-	9	-	-	-	6	-	6
Dual Magnum	15	9	8	9	9	9	9	0	5	1	0	5	0	5	0	5	8	0	8	0	0	3	0	4	3	0	3	3	9	8
Outlook	15	9	7	9	9	9	5	0	5	1	0	5	0	5	0	5	8	0	8	0	0	3	0	4	3	0	3	3	9	7
Warrant	15	6	4	5	5	5	5	0	2	0	0	-	0	0	7	-	7	-	8	0	0	3	0	2	3	-	3	3	7	5
Zidua/Anthem Maxx/Anthem Flex	15,15/14	8	8	8	8	7	4	0	5	1	0	4	4	0	8	0	8	0	9	-	6	-	0	3	4	0	3	2	9	5
Dual Magnum + Metribuzin, Boundary	5, 15	9	9	9	9	9	7	0	7	7	7	10	2	9	9	9	8	7	8	7	7	7	8*	9	9	9	7	8	9	8
Authority Elite/Broadaxe XC	14, 15	9	9	9	10	9	6	0	8	0	4	8	8	8	9	8	8	7	8	7	7	8	4	7	8	-	4	7	9	5
Authority Edge/Authority Supreme	14, 15	9	8	8	8	7	5	0	-	-	4	8	8	8	9	8	8	7	9	7	7	8	-	7	8	-	-	7	9	5
Prefix, Fierce	14, 15	9	9	10	10	10	7	5	9	0	4	9	8	5	3	5	8	3	10	-	8	8	-	7	3	-	-	7	8	5
Verdict	14, 15	8	8	8	8	8	6	0	7	7	7	7	3	8	8	8	7	6	8	7	7	9	8	8	8	8	6	7	8	4
Postemergence-OT																													
Assure II/Targa	1	8	9	9	9	9	8**	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fusilade DX/Fusion	1	7	8	7	8	9	6**	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poast/Select (clethodim)	1	8	9	9	9	9	7**	8	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Classic	2	0	0	0	0	0	0	0	0	5	9	-	8	9	10	-	0	6	1	8	9	0	7	9	0	0	6	7	-	6
FirstRate	2	0	0	0	0	0	0	0	0	-	9	-	8	8	5	5	8	0	0	9	9	4	6	9	4	9	-	8	8	6
Pursuit	2	7	7	7	8	5	8	7	8	4	7	-	7	5	0	5	3	0	2	8	9	6	0	7	9	6	4	7	7	8
Scepter	2	0	0	0	0	0	6	3	6	0	9	0	0	8	0	0	3	0	2	10	7	3	4	7	0	0	7	0	0	0
Scepter + Ultra Blazer	2, 14	2	2	2	2	2	0	3	6	8	9	9	8	9	9	9	4	4	4	9	9	4	4	9	5	0	9	4	0	0
Enlist One	4	0	0	0	0	0	0	0	0	-	9	8	9	9	9	8	7	9	9	9	9	8	8	5	8	8	-	8	7	6
Enlist Duo	4, 9	9	10	10	10	10	10	10	10	-	10	9	10	10	10	9	9	10	9	10	10	9	9	7	9	9	-	9	8	5
Enlist One + glufosinate	4, 10	8	8	8	-	6	9	8	9	-	10	9	10	10	10	-	9	10	10	10	10	8	8	8	9	9	-	10	9	8
Basagran	6	0	0	0	0	0	0	0	0	8	9	0	3	8	4	0	0	0	4	8	7	9	0	9	0	8	0	8	8	6
Glyphosate, Single	9	9	9	9	9	8	8	9	10	6	9	7	6	9	4	6	3	7	3	7	6	6	8	5	8	5	-	6	7	4
Glyphosate, Split	9	10	10	10	10	10	9	10	10	8	10	9	8	9	7	8	4	9	3	9	8	8	9	7	8	7	-	8	8	5
Glufosinate, Single	10	7	9	9	-	6	10	7	10	-	9	7	10	8	10	-	6	10	7	10	10	7	7	6	-	-	9	8	3	6
Glufosinate, Split	10	9	10	10	-	8	10	9	10	-	10	8	10	9	10	-	8	10	9	10	10	9	8	8	-	-	10	10	4	7
Glyphosate + glufosinate	9, 10	8	9	9	9	7	10	9	10	-	10	8	10	9	10	-	7	10	8	10	10	8	8	8	9	6	9	9	8	6
Cobra[2]	14	0	0	0	0	0	0	0	0	9	8	9	6	9	9	9	5	6	6	8	8	8	5	7	8	7	9	8	2	2
Flexstar[2]	14	0	0	0	0	0	0	6	7	8	9	9	8	9	9	9	5	7	8	9	9	6	2	9	-	6	-	7	-	6
Ultra Blazer[2]	14	2	2	2	6	0	2	0	4	8	7	9	8	9	9	9	3	4	7	9	9	2	0	9	5	2	9	4	7	3
Ultra Blazer + Basagran or Storm	14, 6	2	2	2	6	4	0	0	4	8	9	9	8	9	9	9	3	4	7	9	9	8	0	9	5	8	9	7	8	4

[1]Glyphosate-resistant populations of Palmer amaranth, horseweed, johnsongrass, giant ragweed, common ragweed and ryegrass have been found in Arkansas.
[2]Group 14 (PPO) – resistant populations of pigweed have been identified in Arkansas. Expect reduced control with most PPO herbicides containing flumioxazin (Valor), sulfentrazone (Authority) or fomesafen (Reflex) when used alone.
[3]Group 15 (VLCFA inhibitor) resistant populations of pigweed have been identified in Arkansas. Expect reduced control with most Group 15 herbicides containing *S*-metolachlor (Dual Magnum), acetochlor (Warrant), dimethenamid (Outlook), or pyroxasulfone (Zidua) when used alone.
[4]Group 10 (glufosinate) and Group 4 (synthetic auxins) resistant populations of pigweed have been identified in Arkansas. Expect reduced control with Liberty (and other glufosinate products), dicamba (Engenia, Xtendimax), and 2,4-D (Enlist One) when used alone.

* Follow-up postemergence spray will be necessary to achieve these ratings.
** Weedy rice ratings with Poast, Fusilade and Assure can be increased if repeat applications used.
*** Rhizome johnsongrass ratings with Treflan and Prowl increased to 7 if 2x rate used.

Rating Scale: 0 = No Control 10 = 100% Control
Dash = insufficient data

Crop Replant and Rotation Guide for Soybean Herbicides*

Herbicide	Replant/Crop Rotation	Time Interval	Precautions
Anthem Maxx	S,C CT,P,SF,W AL,R SG	I 4 months 10 months 11 months	See label for rotational intervals based on rates applied.
Assure II/Targa	S,C All	I 120 days	
Authority MTZ	S B,W,SG R AL,CT,GS,P,SF	I 4 months 10 months 12 months	See label for pH restrictions. High pH = longer rotations.
Authority Edge/ Authority Supreme	S, SF C,P,W GS,R B AL,CT,O	I 4 months 10 months 11 months 12 months	See label for pH, rate restrictions. High pH rates have longer rotational intervals.
Authority XL	B,RY,W AL,CL,CT, FC,GS,O, P,R,SC,SF All	4 months 18 months 36 months	See label for pH, rate restrictions.
Basagran	All	I	
Broadaxe XC or Authority Elite	S,SU,DSP P W FC,R,GS O,CT* SC,PC	I 4 months 4.5 months 10 months 12 months 18 months	
Butyrac/Butoxone (2,4-DB)			No restrictions.
Cadet	All	I	
Classic	S SG,RG P C,CT CL,GS,R All	I 3 months 6 months 8 months 9 months 18 months†	If applied after Aug. 1, extend recrop interval for C, CT, R and GS 2 months. † Successful field bioassay must be completed prior to planting. Wait 9 months before trying a bioassay.
Cobra			No restrictions.
Dual Magnum or Sequence	S,C,CT,GS† SG,W Rice All	I 4.5 months Next spring 18 months	†Use Concep-treated grain sorghum seed.
Enlist One	S, C CT All	7-14 days 1 month 1 month	Rotation intervals based on rate – see label. Enlist corn, cotton, and soybean can be planted immediately.
Enlist Duo	S, C, CT All	1 month 1 month	Enlist corn, cotton, and soybean can be planted immediately.
Engenia	C GS, S, SG All	I 14-28 days 120 days	Rotation intervals based on rate – see label. Dicamba-tolerant soybean and cotton can be planted immediately.
Enlite	W CT,C,R,SF AL,CL	4 months 9 months 12 months	
Envive	W CT,C,GS,R,AL,CL SF,CA	4 months 10 months 18 months	See label for pH and geographical restrictions. High pH soils have longer rotational intervals.
FirstRate	W C,CT,P,R,GS	3 months 9 months	All others – 30 months plus bioassay.
Flexstar GT 3.5	CT,S W C,P,R,GS Other	0 months 4 months 10 months 18 months	See Reflex.
Fusilade DX or Fusion	S, CT All	I 2 months	
Glufosinate	C,S,CT,R,CA W,B,O GS	I 70 days 180 days	No restrictions.
Glyphosate	All	I	
Intimidator	S B, W C, R CT, RY GS All	I 4.5-8 months 10 months 12 months 18 months 18 months	
Metribuzin	S† AL,C,FG,W,B CT,R All (except root crops)†† Root crops	I 4 months 8 months 12 months 18 months	† Waiting period for replanting soybean depends on the rate of metribuzin used. See specific label for more information. Add 2 months to time intervals if pH of soil is above 7.5. †† Cover crops may be planted any time, but stand reductions may occur.

For more information on soybean variety characteristics and metribuzin tolerance, please scan the QR code to download the latest Division of Agriculture Soybean Update.

*This table applies to the major field and forage crops. Refer to the herbicide labels for the latest recrop and rotation information for horticultural crops. These are written as best we could interpret the labels. We regret any omissions or errors. Always refer to product labels before using a pesticide or replanting into treated fields.

NOTE: See page 43 for key to abbreviations.

(continued on page 44)

Crop Replant and Rotation Guide for Soybean Herbicides* [cont.]

Herbicide	Replant/Crop Rotation	Time Interval	Precautions
Outlook	C,S SG All	I 4 months FY	Do not retreat field with second application.
Paraquat			No restrictions.
Poast/Poast Plus			See label.
Prefix	S CT AL,W,O,R,RY,B GS,R,C	I 1 month 4.5 months 10 months	Use Concep-treated grain sorghum seed. Do not use Reflex or Flexstar in-season.
Prowl	S,CT W,B All	I 4 months† FY	Do not rework soil deeper than treated zone. † Cannot replant using no-tillage practices.
Pursuit	S B,W C Rice All	I† 4 months 9.5 months 18 months 18 months	† Do not rework soil deeper than 2 inches. Do not apply Classic, Lorox Plus, Scepter, Squadron or Tri-Scept the same year as Pursuit or injury to following crops may occur.
Python	AL,P,B,W,RY,O R C GS CT, Sunflower	4 months 6 months 1 month 12 months 18 months	Requires successful bioassay.
Reflex or Flexstar	S SG, W C,CT,R,P,GS All	I 4 months 10 months 18 months	
Resource	SG S,C All	120 days I 30 days	
Reviton	C, W S, P, GS CT All	I 3 to 7 days 7 to 14 days 120 to 150 days	See label.
Select Max			See label.
Sharpen	C,GS,SG,S,R CT SF, others	I 1.5 months 4 months	† Rotation intervals based on rate – see label.
Sonic/Authority First	W C,R CT,AL,B,O, RY,GS	4 months 10 months 12 months	See label for pH restrictions.
Storm	All	Fall	
Surveil	S W C,P,R,GS SF	I 3 months 9 months 30 days	
Tavium	S CT C B, O, RY, W AL, DSP, GS, P, SF CL R All	28 days 42 days 4 months 4.5 months 6 months 9 months Next spring 12 months	Dicamba-tolerant soybean and cotton can be planted immediately.
Tendovo	S W FC, PC, AL, R B, CT, P, GS SC, All SF	I 4.5 months 9 months 12 months 18 months 30 months	Cover crops for soil building or erosion control may be planted any time but do not graze or harvest for food or feed.
Treflan/others	S,CT W,B All	I Fall FY	
Treflan (2X rate)	S,CT R All	I FY 2 years	
Trivence	S W C R CT All	I 4 months 10 months 12 months 18 months 18 months	Rotational intervals based on pH and rates – see label.
Typhoon	W C,CT,R GS and all others	4 months 10 months 18 months	
Ultra Blazer	S All	I Fall	
Valor	S,P W,C,R,GS CT B AL,O,CL,CA	I 30 days 21 days 4 months 8 months	Pre-emerge treatments may injure soybean.
Verdict	C,S, GS CT,R W	I FY 4 months	† Rotation intervals based on rate – see label.
Warrant	CT,C,GS,S W R, others	I 4 months FY	Do not use more than 3.0 lb/A/year.
Xtendimax	C, S GS CT SG R All	14-28 days 15 days 21 days 22-45 days 120 days 120 days	Rotation intervals based on rate – see label. Dicamba-tolerant soybean and cotton can be planted immediately.
Zidua	C,S W CT GS R, others	I 1 month 2 months 6 months FY	
Zidua Pro	S P, W C AL B, RY CT, GS, SF All	I 4 months 8.5 months 10 months 11 months 18 months 40 months	Following 40 months, before planting any crop not listed on the label, a field bioassay must be completed. See label for Clearfield crop rotation intervals.

Crop

All = All crops not specified
AL = Alfalfa
B = Barley
C = Corn
CA = Canola
CL = Clovers
CT = Cotton
DSP = Dry Shelled Peas
FC = Field Corn
FG = Forage Grasses
FL = Forage Legumes
GS = Grain Sorghum
O = Oats
P = Peanut
PC = Popcorn
R = Rice
RG = Ryegrass
RY = Rye
S = Soybean
SC = Sweet Corn
SF = Sunflower
SG = Small Grain
W = Wheat

Timing

I = Immediately
FY = Following year (usually spring or following fall - 11 to 16 months)

*This table applies to the major field and forage crops. Refer to the herbicide labels for the latest recrop and rotation information for horticultural crops. These are written as best we could interpret the labels. We regret any omissions or errors. Always refer to product labels before using a pesticide or replanting into treated fields.

Soybean Herbicide

Compatibility with Fertilizers as Application Carriers

Herbicide	Fertilizer	
	Fluid	Dry
Anthem Maxx	Y	Y
Assure II/Targa	N	N
Authority Elite/Broadaxe	Y	Y
Authority Edge/Authority Supreme	Y	Y
Broadstrike + Dual or Treflan	Y	Y
Dual Magnum	Y	Y
FirstRate	Y	Y
Glyphosate	N	N
Liberty/Cheetah	N	N
Metribuzin	Y	Y
Outlook	Y	Y
Paraquat	Y	N
Prowl	Y	Y
Pursuit	Y	N
Python	Y	Y
Reviton	Y	N
Select Max	N	N
Sharpen	Y	Y
Synchrony XP	N	N
Treflan/Trilin/trifluralin	Y	Y
Turbo	Y	Y
Valor	Y	Y
Warrant	N	Y
Zidua	Y	Y

Y = Yes, N = No

There are many specific fertilizer incompatibilities and restrictions with most herbicides. Be sure to read the herbicide label for specific mixing or impregnation instructions. Compatibility agents are required for many mixes. A typical compatibility test procedure for mixing herbicides in fluid fertilizers is given on page 4. NOTE: Compatibility with dry fertilizer is listed here from a labeling standpoint. The University of Arkansas only recommends herbicide application on dry fertilizer as a third alternative to spraying in water or in liquid fertilizer.

Rainfall-free Periods for Postemergence Herbicides

Herbicide	Time Before Rainfall
2,4-DB	4 hrs
Assure II/Targa	1 hr
Basagran	8 hrs
Classic	4 hrs
Cobra	30 min
Enlist One	4 hrs
Enlist Duo	4 hrs
FirstRate	2 hrs
Fusilade, Fusion	1 hr
Glyphosate	4-6 hrs
Liberty/Cheetah	4 hrs
Paraquat	30 min
Poast	1 hr
Pursuit	1 hr
Python	4 hrs
Reflex, Flexstar, Typhoon	4 hrs
Resource	1 hr
Reviton	1 hr
Select Max	1 hr
Sharpen	1 hr
Storm	8 hrs
Synchrony XP	4 hrs
Ultra Blazer	6 hrs
Valor	1 hr

These are intervals that must occur between application and the first rainfall event in order for no loss in herbicide activity to occur.

Soybean Postemergence Herbicide

Preharvest Application Intervals (PHI)

Herbicide	PHI
2,4-DB	60 days
Assure II/Targa	80 days
Basagran	No restrictions
Classic	60 days
Cobra	90 days
Enlist One	R2
Enlist Duo	R2
Dual Magnum	75 days
FirstRate	65 days
Fusilade DX	1st bloom / R1
Glyphosate	After flowering / R3
Liberty/Cheetah	70 days
Poast	90 days
Pursuit	85 days
Python	85 days
Reflex, Flexstar, Typhoon	1st bloom / R1
Resource	60 days
Select Max	60 days
Sharpen	3 days
Storm	50 days
Synchrony XP	60 days
Ultra Blazer	50 days
Valor	60 days

These intervals are the number of days that must be allowed between herbicide application and harvest. Applications made after these interval restrictions could cause illegal herbicide residues to be present in the harvested grain.

Soil-Applied Herbicide Rates for Soybean
Soil Texture

Herbicide	Coarse (light)	Medium	Fine (heavy)
	Broadcast Rates Per Acre		
Preplant (Normal Rates)			
Afforia	2.5 oz	2.5 oz	2.5 oz
Dual Magnum	1 pt	1.5 pt	2.00 pt
Dual Magnum + metribuzin 75DF	0.8 pt + 0.33 lb	1 pt + 0.5 lb	1.33 pt + 0.67 lb
Prowl 3.3EC	1.2-1.8 pt	1.8-2.4 pt	2.4-3.6 pt
Prowl H_2O 3.8 CS	1.0-1.6 pt	1.6-2.1 pt	2.1-3.2 pt
Sonic	3-6 oz	3-6 oz	3-6 oz
Synchrony XP	1.5 oz	1.5 oz	1.5 oz
Treflan, Trilin, Trifluralin 4EC	1 pt	1.5 pt	2 pt
Valor	2 oz	2 oz	2 oz
Preemergence			
Afforia	2.5 oz	2.5 oz	2.5 oz
Anthem Flex	2.25-2.75 oz	2.75-5.55 oz	4.0-5.5 oz
Anthem Maxx	2-3.25 oz	2.5-4.75 oz	3.5-5.5 oz
Authority Edge	5.9-7.9 oz	7.0-10.0 oz	9.0-12.0 oz
Authority Elite	19-23 oz	24-26 oz	27-32 oz
Authority MTZ	10-12 oz	12-14 oz	14-18 oz
Authority Supreme	6-6.9 oz	6-9.8 oz	7-11.5 oz
Boundary	1.2-1.5 pt	1.5-2 pt	1.75-2.25 pt
BroadAxe XC	19-25 oz	25-32 oz	25-32 oz
Dual Magnum	1 pt	1.33-1.67 pt	1.5 pt
Dual Magnum + metribuzin 75DF	1.0 pt + 0.33 lb	1.33 pt + 0.5 lb	1.5 pt + 0.67 lb
Enlite	2.8 oz	2.8 oz	2.8 oz
Envive	3.5 oz	3.5 oz	3.5 oz[1]
Metribuzin 75DF[1]	0.33-0.5 lb	0.5-0.67 lb	0.67-1 lb
Outlook	10-14 oz	14-16 oz	16-18 oz
Prefix	2 pt	2-2.5 pt	2-3 pt
Python	1 oz	1.1 oz	1.3 oz
Sharpen	--	1 oz	1 oz
Sonic/Authority First	3-6 oz	3-6 oz	3-6 oz
Surveil (co-pack)	3 oz	3 oz	3 oz
Tendovo	1.2-1.5 qt	1.35-2.1 qt	1.75-2.35 qt
Trivence[2]	6 oz	6-8 oz	8-10 oz
Valor	2 oz	2 oz	2 oz
Verdict	--	5 oz	5 oz
Warrant	1.25 qt	1.5 qt	1.9 qt
Zidua SC	2.5-3.5 oz	3.25-5	4-5.75 oz
Zone Defense	3.5-5.0 oz	4.5-5.0 oz	5.0 oz

[1]See label for pH restrictions.
[2]Use metribuzin tolerant varieties (www.uaex.uada.edu).

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
SOYBEAN				
For information on burndown herbicides see page 21, WEED RESPONSE RATINGS FOR BURNDOWN HERBICIDES.				
Wheat - Stubble Planted or Reduced Tillage or Stale Seedbed Soybean Culture				
Important factors to consider in stale seedbed and reduced tillage soybean culture. 1. If your goal is to conserve moisture at planting time and heavy vegetation is present, moisture reserves may already be depleted and establishing soybean stands may not be feasible without rainfall. 2. In a dry year, failure to obtain good control of existing vegetation will result in failure to obtain a stand of soybean because the weeds will deplete the soil moisture before the seedling soybean can become established. 3. Spray volume for herbicides should be in the 10 to 20 gallon per acre range for best results. 4. Thorough and uniform coverage is necessary for good "burndown" results. Coverage more dependent on droplet size and number of droplets (orifice size-pressure relationship) than on total volume. 5. Timely postemergence herbicide applications and, in some cases, cultivation will be necessary for full-season weed control. 6. **Compared to the burndown and residual mixtures below, a burndown herbicide such as glyphosate, paraquat, paraquat + metribuzin followed by a total postemergence program has been cheaper and more consistent in no-till, stubble-planted soybean.**				
Preplant–Incorporated				
trifluralin @ 0.5 to 1 lb/A	Annual grass weeds and johnsongrass from seed.	**Treflan 4 EC** 1 to 2 pt/A.	From 6 weeks prior to planting to time of planting.	**APPLICATION RECOMMENDATIONS FOR ALL FOLLOWING PREPLANT TREATMENTS** Although Treflan and Prowl are labeled for use up to 6 weeks (or 60 days for Prowl) prior to planting, poor results are often obtained with early applications of both 1 and 2X rates if extended periods of wet weather occur before planting. For this reason, apply as near to planting as practical. The following summary is taken from **Equipment and Methods for Soil Incorporation of Herbicides,** a paper by Bode, Newberg, Butler and Wax at the American Society of Agricultural Engineers meeting in 1977. Note section on large disks. Tillage from tandem disk harrows is such that the soil is inverted, and herbicides are mixed deeper in the soil than with any other incorporation tool tested. A single pass with tandem disks results in areas of low concentration, where weed streaking can occur. A second pass will help to level out the areas of high and low concentrations, but there seems to be very little difference whether the second pass is parallel, perpendicular or at any angle with the first pass. *[continued]*
pendimethalin @ 0.5 to 1.5 lb/A	Annual grass weeds and johnsongrass from seed.	**Prowl 3.3 EC** 1.2 to 3.6 pt/A or **Prowl H_2O 3.8 CS** 1 to 3.2 pt/A.	From 60 days prior to planting until immediately prior to planting.	
S-metolachlor @ 0.95 to 1.6 lb/A	Weedy rice, annual grasses and yellow nutsedge.	**Dual Magnum 7.62 EC** 1 to 2.0 pt/A.	During final seedbed preparation (within 7 days of planting).	

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
pendimethalin or trifluralin + metribuzin @ 0.5 to 1 + 0.25 to 0.5 lb/A	Annual grasses, johnsongrass from seed, annual broadleaf weeds including hemp sesbania (coffeebean), prickly sida (teaweed), pigweed and smartweed. Poor control of cocklebur, entireleaf morningglory and sicklepod.	**Prowl or Treflan + Metribuzin 75 DF or Tricor 4F** 1.2 to 2.4 pt/A Prowl 3.3 EC or 1 to 2 pt/A Treflan 4 EC + 0.33 to 0.67 lb/A DF or 0.75 to 2 pt/A 4F. Tank mix. or **Tripzin ZC** 1.8 to 3.6 pt/A.	During final seedbed preparation before planting.	Large disks with blades spaced (9 inches or wider) will not give adequate soil mixing when operated at shallow depths of 4 inches or less. When large disks are operated at a 6-inch depth or more to obtain soil inversion, some of the chemical is incorporated deeper than desired, There is also some loss of horizontal uniformity with the large disk. Spacing of disk blades and depth of operation seem to be more important than blade diameter in determining the amount of soil mixing. Disks with 7-inch blade spacings gave more uniform incorporation at the desired (2- to 3-inch) depth than disks with 9-inch spacings. The field cultivator also requires two passes to obtain adequate incorporation. Better soil mixing is obtained when sweeps are used at travel speeds of 5 to 7 mph. To avoid areas of low chemical concentration which would result in strips of weeds, the second pass should be at some angle to the first pass rather than parallel to it. The rear row of shanks should not be allowed to operate deeper than the forward rows because untreated soil may be brought to the surface, and weed control would be reduced. A drag harrow mounted behind the cultivator to level the ridges will improve herbicide distribution in the top inch of soil. **See Soybean Update (scan QR code at beginning of soybean section) for list of metribuzin-sensitive varieties.**
S-metolachlor + metribuzin @ 0.95 to 1.6 lb/A + 0.375 to 0.5 lb/A	Annual grasses, johnsongrass from seed, annual broadleaf weeds including hemp sesbania (coffeebean), prickly sida (teaweed), pigweed and smartweed. Poor control of cocklebur, entireleaf morningglory and sicklepod. Better on weedy rice, weak on seedling johnsongrass.	**Dual Magnum + Metribuzin 75 DF or Tricor 4F** 1.0 to 2.00 pt/A or 0.5 to 0.67 lb/A DF or 0.75 to 2 pt/A 4F or **Moccasin MTZ** 1.75 to 2.67 pt/A.	During final seedbed preparation (within 7 days of planting).	
pendimethalin or trifluralin + imazaquin @ 0.5 to 1 + 0.094 to 0.125 lb/A	Most annual grass, and broadleaf weeds except hemp sesbania. Sicklepod if followed by Classic.	**Prowl or Treflan + Scepter 70 DF** 1.2 to 2.4 pt/A Prowl 3.3 EC or 1 to 2 pt/A Treflan 4 EC + 1.4 to 2.8 oz/A 70 DF. If incorporating 2 to 4 weeks prior to planting, use labeled rates of Scepter. If incorporating from 0 to 2 weeks prior to planting, the University of Arkansas recommended rate is 1.4 oz/A 70 DF. See comments at right.	Up to 4 weeks prior to planting. Incorporate immediately after application. Poor weed control may occur if incorporated into dry soils unless rainfall occurs for activation.	Incorporate thoroughly in the top 2 to 3 inches of seedbed. **When applied from 0 to 2 weeks prior to planting, University of Arkansas research has shown near equal results from rates ranging from 1.4 to 2.8 oz/A – regardless of soil texture. The most consistent programs with Scepter are those that use the rate of 1.4 oz/A 70DF followed by a postemergence herbicide, if needed.**
flumetsulam @ 0.05 to 0.066 lb/A	Cocklebur, horseweed, smooth pigweed, velvetleaf, prickly sida, spurge, eclipta. Suppression of morningglories. Sicklepod if followed by Classic.	**Python 80 WDG** 1 to 1.33 oz/A + labeled rate of grass herbicide.	Apply from 0 to 30 days before planting.	Incorporate thoroughly into the top 2 inches of the seedbed. Control of cocklebur, morningglory and sicklepod may be enhanced by using the higher end of the rate range for each soil textural class. Do not use on soils with pH above 7.8. Do not rotate with cotton for 18 months or sorghum for 12 months following application.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
SOYBEAN				
Preplant–Incorporated [cont.]				
dimethenamid @ 0.56 to 0.98 lb/A	Weedy rice, annual grasses, yellow nutsedge and pigweeds. Will also reduce competition from tea-weed, hophornbeam copperleaf, groundcherry and other small-seeded broadleaf weeds.	**Outlook 6E** 12 to 21 oz/A.	From 45 days prior to planting to fifth trifoliate.	Disk incorporation is not recommended. A field cultivator or similar type implement should be used to incorporate in the top 2 to 3 inches. Rate dependent on percent organic matter. See label.
SOYBEAN SEE HERBICIDE RESISTANCE STATEMENTS ON PAGES 18 – 20. (Use 2 effective residual active ingredients in the PRE program.)				
Preemergence				
S-metolachlor @ 0.9 to 1.5 lb/A	Annual grasses, weedy rice, nutsedge and small-seeded broadleaves.	**Dual Magnum 7.62EC** 1 to 1.5 pt/A.	At planting, up to 90 days PHI.	Rainfall needed for activation. University data suggests that 1.3 x the metolachlor product rate (equal R- and *S*-isomers) is needed to provide equal weed control to the *S*-isomer (*S*-meto-lachlor) products such as Dual Magnum.
metribuzin @ 0.25 to 0.75 lb/A	Hemp sesbania, prickly sida, common cocklebur, pigweed, spurred anoda, common rag-weed, smartweed and sicklepod.	**Metribuzin 75 DF or Tricor 4F** 0.33 to 0.75 lb/A DF or 0.75 to 1.5 pt/A 4F.	At planting.	Do not apply to sandy soils or to sandy loam or loamy sand soils with less than 2% organic matter. Some stunting and stand reduction may occur from Sencor if heavy rains closely follow treatment. Do not apply more than once per season. Do not use treated vines for feed or forage. **See Soybean Update (scan QR code at beginning of soybean section) for list of metribuzin-sensitive varieties.** Do not use on soils pH 7.5 or above. Weak on grass weeds. Do not use 1.5 pt/A 4L or 1 lb/A DF rates on any soils except Mississippi Delta heavy clay.
acetochlor @ 0.94 to 1.5 lb/A	Annual grasses and small-seeded broadleaf weeds.	**Warrant 3ME** 2.5 to 4 pt/A.	At planting.	Rainfall needed for activation. Most PRE applications of Warrant should be applied in combination with a Valor or Authority product.
S-metolachlor + metribuzin @ 0.8 to 1.3 + 0.25 to 0.75 lb/A	Same as above with improved annual grass control. Improved control of pigweed and sicklepod compared to above. Good choice for pigweed.	**Dual Magnum 7.62EC + Metribuzin 75 DF or Tricor 4F** 1.0 to 1.5 pt/A Dual Magnum + 0.33 to 1 lb/A 75 DF or 0.75 to 2 pt/A 4F or **Boundary 6.5 EC** 1.2 to 2.25 pt/A or **Moccasin MTZ** 1.75 to 2.67 pt/A.	At planting.	Tank mix. Apply only once per season. Do not use on sand or loamy sand soils with less than 2% organic matter. Do not plant crops other than soybean within 4 months after treatment. Do not use treated vines for feed or forage. Do not apply to sensitive varieties, exceed 4 qt/A/year or use with liquid fertilizer. **See Soybean Update (scan QR code at beginning of soybean section) for list of metribuzin-sensitive varieties.**
flumioxazin @ 0.063 lb/A	Residual broadleaf control. No post horseweed activity. Good option for pigweed.	**Valor 51 WDG** (or appropriate rate of Valor-containing premixes such as Enlite, Envive, Valor XLT, etc.) 2 oz/A.	Prior to soybean emergence. Apply immediately after planting.	Apply to clean ground or tank-mix for post weed control. Rainfall at emergence may result in injury, mainly cosmetic.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
dimethenamid + saflufenacil @ 0.156 to 0.31 + 0.022 to 0.044 lb/A	Annual grasses, pigweed, velvetleaf, morningglory and horseweed.	**Verdict** 5 oz/A.	Burndown to preemergence. **Do not** apply Verdict over the top of cracking or emerged soybean. 5 oz/A of Verdict can be applied up to preemergence on medium and fine soils. 7.5 oz/A of Verdict can be applied upto 14 days before planting on medium to fine soils. 10 oz/A of Verdict can be applied up to 30 days before planting on medium to fine soils. Apply immediately after planting.	For best burndown results, tank mix with glyphosate or paraquat. An MSO and AMS must be used for burndown. On coarse soils with less than 2% organic matter, the plant back to soybean is 30 days at 5 to 7.5 ounces and 44 at 10 ounces. See label for further recommendations and restrictions.
pyroxasulfone @ 0.081 to 0.187 lb/A or pyroxasulfone + fluthiacet-methyl @ 0.081 + 0.002 to 0.179 + 0.005 lb/A or pyroxasulfone + carfentrazone @ 0.066 + 0.005 to 0.187 + 0.013 lb/A	Annual grasses and small-seeded broadleaves.	**Zidua 4.17 SC** 2.50 to 5.75 oz/A or **Anthem Maxx 4.3 SE** 2.5 to 5.5 oz/A or **Anthem Flex 4 SE** 2.25 to 6.4 oz/A.	At planting.	Rainfall required for activation.
pyroxasulfone + flumioxazin @ 0.044 + 0.037 lb/A	Annual grasses and small-seeded broadleaves.	**Fierce 76 WDG** 3 oz/A.	At planting. Apply immediately after planting.	Rainfall required for activation. Do not apply if soybean are cracking. Injury may be worse than expected with Valor alone. Cool, wet conditions may result in delayed recovery and growth.
saflufenacil @ 0.022 to 0.044 lb/A	Pigweed, velvetleaf, morningglory and horseweed.	**Sharpen 2.85 SC** 1 to 2 oz/A. Add surfactant.	Burndown to preemergence. **Do not** apply Sharpen over the top of cracking or emerged soybean. 1 oz/A of Sharpen can be applied up to preemergence on medium and fine soils. 1.5 oz/A of Sharpen can be applied up to 14 days before planting on medium to fine soils. 2 oz/A of Sharpen can be applied up to 30 days before planting on medium to fine soils.	For best burndown results, tank mix with glyphosate or paraquat. An MSO and AMS must be used for burndown. On coarse soils with less than 2% organic matter, the plant back to soybean is 30 days at 1 to 1.5 ounces and 44 at 2 ounces. See label for further recommendations and restrictions.
sulfentrazone + flumioxazin @ 0.136 + 0.033 to 0.194 + 0.047 lb/a	Control of broadleaves.	**Zone Defense 77 WDG** 3.5 to 5.0 oz/A.	Preemergence.	Do not exceed 9.6 oz/A per year. Do not make more than 2 applications per year and do not apply following crop emergence as severe injury will occur.
sulfentrazone + *S*-metolachlor @ 0.104 + 0.94 to 0.175 + 1.575 lb/A	Grass and broadleaf weeds.	**Authority Elite 7 EC** or **BroadAxe XC** 19 to 32 oz/A.	At planting.	Rainfall required for activation. Rate depends on soil type.
sulfentrazone + metribuzin @ 0.071 + 0.0253 to 0.0225 + 0.034 lb/a or 0.12 + 0.23 to 0.23 + 0.45 lbA	Broadleaf weeds.	**Authority MTZ** 12 to 16 oz/A. or **Preview 2.1SC** 13 to 26 oz/a	No later than three days after planting.	Make sure seed furrow is closed. See soil texture chart on page 45. For higher rates, use tolerant varieties. **See Soybean Update (scan QR code at beginning of soybean section) for list of metribuzin-sensitive varieties. Less morningglory and nutsedge control with Preview due to lower ai/A.**
S-metolachlor + fomesafen @ 1.08 to 1.6 + 0.24 to 0.36 lb/A	Grass and broadleaf weeds.	**Prefix** 2 to 3 pt/A.	At planting.	Do not use PRE if you plan to use Flexstar POST for pigweed. Rainfall required for PRE activity. With widespread PPO-inhibitor resistance, the addition of metribuzin may be required for effective pigweed control.
acetochlor + fomesafen @ 1.06 to 1.54 + 0.24 to 0.34 lb/A	Grass and broadleaf weeds.	**Warrant Ultra** 48 to 70 oz/A	At planting.	Do not use PRE if you plant to use Flexstar POST for pigweed. Only 1 application allowed per year. Rainfall required for PRE activity. With widespread PPO-inhibitor resistance, the addition of metribuzin may be required for effective pigweed control.
sulfentrazone + pyroxasulfone @ 0.098 + 0.098 to 0.186 + 0.186 lb/A or 0.126 + 0.186 to 0.334 + 0.186 lb/A	Annual grasses and small-seeded broadleaves.	**Authority Supreme** 6 to 11.5 oz/A or **Authority Edge** 5.9 to 15.7 oz/A.	At planting.	Rainfall required for activation. Rate depends on soil type. Do not apply POST.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
SOYBEAN Preemergence [cont.]				
cloransulam-methyl @ 0.016 to 0.026 lb/A	Cocklebur, morningglory, ragweeds, sicklepod prickly sida (teaweed), and horseweed. Suppression of yellow nutsedge.	**FirstRate 84 DG** 0.5 to 0.6 oz/A. Add 1% v/v crop oil concentrate.	Preemergence.	Do not exceed 0.6 oz/A per year (PRE and POST combined). Erratic on sicklepod.
flumetsulam @ 0.05 to 0.066 lb/A	Cocklebur, horseweed, smooth pigweed, eclipta, velvetleaf, spurge, and prickly sida. Suppression of morningglories. Sicklepod if followed by Classic.	**Python 80 WDG** 1 to 1.33 oz/A + labeled rate of Dual or other preemergence grass herbicide.	At planting.	Rainfall required for activation. Control of cocklebur, morningglory and sicklepod may be enhanced by using higher end of rate range for each soil textural class. Do not plant cotton for 18 months or sorghum for 12 months following application. Do not use on soils with pH above 7.8.
dimethenamid @ 0.56 to 0.98 lb/A	Most small-seeded annuals.	**Outlook 6E** 12 to 21 oz/A.	At planting.	Rainfall needed for activation.
sulfentrazone + cloransulam @ 0.25 + 0.03 lb/A	Cocklebur, Palmer amaranth, morningglories, smartweed, and grass suppression.	**Sonic or Authority First** 6.45 oz/A.	PPI, preplant surface applied or pre-emergence (within 3 days of planting).	Rainfall required for activation.
flumioxazin + cloransulam methyl @0.063 + 0.021 lb/A	Small-seeded broadleaves.	**Surveil 48 WDG** 2.8 oz/A.	Preemergence.	Add Zidua or metribuzin for PPO-resistant pigweed.
saflufenacil + imazethapyr + pyroxasulfone @ 0.017 + 0.047 + 0.080 to 0.023 + 0.062 + 0.107 lb/A.	Broad spectrum POST and residual weed control.	**Zidua Pro 4.09 SC** 4.5 to 6 oz/A.	Preemergence.	Add 1% v/v MSO plus 8.5 lbs/100 gal AMS if burning down existing vegetation. DO NOT apply after soybean have reached the cracking stage or severe crop injury will result. **If rotating to rice the following year, a Clearfield or Full-Page rice variety must be planted.**
S-metolachlor + metribuzin + fomesafen @ 0.805 + 0.178 + 0.159 to 1.900 + 0.42 + 0.375 lb/A.	Broad spectrum residual weed control.	**Intimidator 4.81 EC** 1.9 to 4.48 pt/A.	Preemergence.	Maximum application rate from all products containing fomesafen must not exceed 0.375 lb ai/A per year.Do not exceed a total of 2.5 lb/A *S*-metolachlor from all containing products per year. **See Soybean Update (scan QR code at beginning of soybean section) for list of metribuzin-sensitive varieties.**
flumioxazin + chlorimuron + metribuzin @ 0.063 + 0.02 + 0.223 lb/A	Residual horseweed, pigweed, morningglory, and prickly sida control.	**Trivence 61.3 DG** 8 oz/A.	Prior to soybean emergence.	Use 6 oz/A on high pH soils. Addition of a Group 15 may be necessary for PPO-resistant pigweed control. Check label for approved Group 15 tank-mix partners. **See Soybean Update (scan QR code at beginning of soybean section) for list of metribuzin-sensitive varieties.**
flumioxazin + metribuzin + pyroxasulfone @ 0.06 + 0.19 + 0.08 to 0.09 + 0.28 + 0.12 lb/A	Broad-spectrum residual weed control.	**Fierce MTZ** 1 to 1.5 pt/A	Preemergence.	Use rate dependent on soil type. Do not make more than 1 application per year and do not exceed 1.5 pt/A. Greater risk for injury results when: soils have a pH of or greater than 7.5, less than 0.5% organic matter, soybean is planted less than 1.5 inches deep, or heavy rains occur soon after application. **See Soybean Update (scan QR code at beginning of soybean section) for list of metribuzin-sensitive varieties.**
S-metolachlor + metribuzin + cloransulam-methyl @ 1.30 to 1.82 + 0.24 to 0.34 + 0.02 to 0.03 lb/A	Control of grasses and broad-leaves.	**Tendovo** 1.5 to 2.1 qt/A.	May be applied up to 45 days before planting through planting, but must be applied before crop emergence.	If weeds are present at the time of application, a burndown herbicide may be added to the mix.

Illustrations courtesy of Chris Meux,
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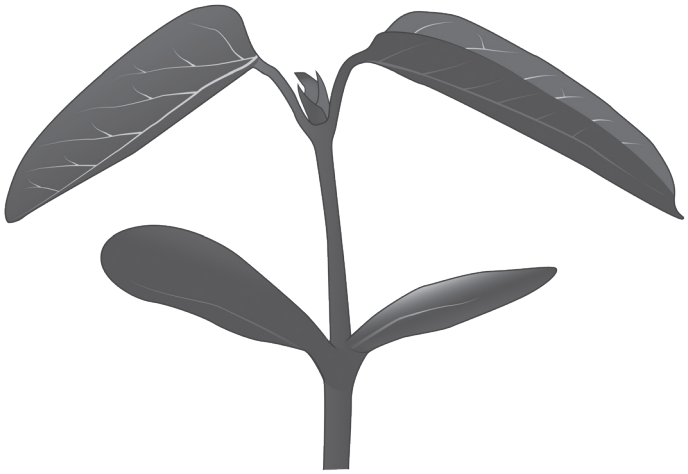

VC
Fully developed leaves at unifoliate nodes

V1
Fully developed trifoliate leaf at the node above the unifoliate nodes.

V2
Two fully developed trifoliate leaves above the unifoliate nodes.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
SOYBEAN				
Postemergence – All Systems				
bentazon @ 0.75 to 1 lb/A	Emerged common cocklebur, jimsonweed, smartweed, velvetleaf, prickly sida and common ragweed.	**Basagran** 1.5 to 2 pt/A. A surfactant is optional. Research has shown no advantage to adding a surfactant for cocklebur. Use two applications for morningglory control. The addition of 2 fl oz/A of **2,4-DB** may improve morningglory control somewhat and may also improve control of cocklebur slightly larger than those listed on Basagran label. Rate may be reduced with band application.	Postemergence when soybean are in 1 (V2) to 4 (V5) trifoliate stage. If a second flush of cocklebur emerges, repeat treatment or follow with another material as a directed spray. Most effective on cocklebur 6 inches or less.	Overtop or semi-directed. Excellent spray coverage is necessary for results. If the crop canopy shelters small weeds, use a semi-directed spray. Use high rate on cocklebur larger than 6-leaf stage. Do not apply to soybean growing under stress. Do not apply more than 2 lb bentazon per acre in one season. **Do not add 2,4-DB unless good soil moisture is present and soybean are actively growing. Refer to label for precautions and disclaimers.**
acifluorfen @ 0.375 to 0.5 lb/A	Emerged hemp sesbania, crotolaria, morningglory, Texas gourd, common ragweed, copperleaf, woolly croton and several other broadleaf weeds. (See rating table.)	**Ultra Blazer 2L** 1 to 2 pt/A. 1 pt rate on hemp sesbania and showy crotolaria. Use 2 pt rate on all but very small jimsonweed, purple moonflower, pitted morningglory or common ragweed. Add a surfactant. Refer to label. The addition of 2 fl oz/A of **2,4-DB** may improve cocklebur control somewhat and may also improve control of morningglory slightly larger than those listed on Ultra Blazer label. Rate may be reduced with band application.	Postemergence when soybean are small. Ivyleaf and entireleaf morningglories must be controlled before they are beyond the 2 true leaf stage. Pigweed must be controlled first 7 to 10 days after emergence. Refer to label for specific weed sizes. For hemp sesbania (coffeebean) only, best control obtained between 12" and bloom stage.	Overtop or semi-directed. Weeds should be actively growing. Excellent spray coverage is necessary. Crop injury symptoms are foliar burn, leaf speckling and leaf crinkling. The symptoms are usually cosmetic in nature only. Notice, for successful results, labeled rates and timing of application must be strictly adhered to. **Do not add 2,4-DB unless good soil moisture is present and soybean are actively growing. Refer to label for precautions and disclaimers. Cutoff date is 50 days prior to harvest (PHI). May be applied to soybean in bloom stage if within the PHI.**
acifluorfen + bentazon @ 0.25 to 0.5 + 0.5 lb/A	Pigweed, cocklebur, prickly sida, hemp sesbania; pitted, purple, palmleaf and entireleaf morningglories, Texas gourd and woolly croton.	**Ultra Blazer + Basagran** 1 to 2 pt/A + 1 pt/A. Add a surfactant according to Ultra Blazer label. Rate may be reduced with band application. **or** **Storm 4L** 1.5 pt/A. Add a surfactant. Note: Storm rate of 1.5 pt/A equivalent to 1 pt/A Basagran + 1 pt/A Ultra Blazer.	Postemergence when soybean are small. Ivyleaf and entireleaf morningglories must be controlled before they are beyond the 2 true leaf stage. Pigweed must be controlled first 7 to 10 days after emergence. Refer to label for specific weed sizes. For hemp sesbania (coffeebean) only, best control obtained between 12" and bloom stage.	Same as above. If prickly sida is larger than 2", increase Basagran rate to 1½ pt/A. Use high Ultra Blazer rate for entireleaf and ivyleaf morningglory.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
lactofen @ 0.2 lb/A	Balloonvine, cocklebur, pitted morningglory, prickly sida, spurge, hemp sesbania, woolly croton and others. See rating table. Weak on entireleaf morningglory.	**Cobra 2E** 0.8 pt/A. Add a nonionic surfactant or crop oil concentrate. (See label.) University of Arkansas research has often shown an increase in soybean injury with little or no increase in weed control with COC compared to surfactant.	Between 10 and 14 days after weed emergence.	Weed control rapidly diminishes as weeds exceed 14 days after emergence or if environmental conditions are poor. Timing is very critical on cocklebur or regrowth will occur. Expect 30% to 40% initial crop burn. Research has shown this does not lower yield in weed-free soybean planted at recommended planting dates. Not recommended on soybean planted beyond the recommended planting date. Less dependent than other herbicides on environmental conditions.
fomesafen @ 0.235 to 0.35 lb/A	Cocklebur, morningglories, pigweed, hemp sesbania, woolly croton and others. See rating table.	**Flexstar 1.88L** 1 to 1.5 pt/A. See comments at right.	Between 10 and 14 days after weed emergence. 2” to 3” pigweed.	Weed control rapidly diminishes as weeds exceed 14 days after emergence or if environmental conditions are poor. Good residual control of Palmer amaranth has been observed if rainfall occurs shortly after application. Do not plant crops other than wheat, corn, cotton, peanuts, soybean or rice for 18 months after application.
chlorimuron @ 0.008 to 0.012 lb/A	Cocklebur, hemp sesbania, pitted, entireleaf and ivyleaf morningglories, northern jointvetch and sicklepod. Some suppression of yellow nutsedge.	**Classic 25DF** 0.5 to 0.75 oz/A. Add a nonionic surfactant.	7 to 12 days after weed emergence.	Timing is critical. Control of sicklepod and entireleaf-ivyleaf morningglories may be erratic. Weeds must be actively growing. Avoid drift. Crop injury in forms of yellowing and leaf malformation may occur but should be quickly outgrown. Avoid drift to cotton or rice. Tank mixing with other herbicides may reduce activity.
imazethapyr @ 0.063 lb/A	Yellow nutsedge, pitted, entireleaf and ivyleaf morningglories, spotted spurge and smartweed. Suppression of annual grass, weedy rice and johnsongrass.	**Pursuit 70 DG** 1.45 oz/A. Add a nonionic surfactant.	Within first 10 days after weed emergence. Can tank mix with glyphosate for improved nutsedge control.	Timing is extremely critical. Weeds must be very small. Can give excellent residual control if rain occurs within 5 days. **40 month rotation to non-Clearfield rice.**
cloransulam-methyl @ 0.016 to 0.026 lb/A	Cocklebur, morningglory, ragweeds, sicklepod and horseweed.	**FirstRate 84 DG** 0.3 oz/A. Add 1% v/v crop oil concentrate. Do not exceed 0.6 oz/A per year.	10 to 14 days after weed emergence. Cotyledon to 1 true leaf sicklepod. Up to R2 soybean.	Timing is critical. Erratic on sicklepod. Has been a good tank mix partner with glyphosate in research. **Best POST option for horseweed.** PHI = 70 days. Can use sequential applications for resistant horseweed and ragweed control
flumetsulam @ 0.0062 lb/A	Prickly sida and other broadleaf weeds.	**Python 80 WDG** 0.125 oz/A. Add 0.5% crop oil concentrate.	10 to 14 days after weed emergence. (2- to 3-leaf sida).	Good tank mix with FirstRate in conventional soybean. Can be tank mixed with glyphosate.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
SOYBEAN				
Postemergence – All Systems [cont.]				
fluthiacet @ 0.0035 to 0.006 lb/A	Morningglory, velvetleaf, smartweed and hophornbeam copperleaf.	**Cadet 0.91 EC** 0.5 to 0.9 oz/A.	2- to 4-inch weeds.	Add to glyphosate for improved control of velvetleaf and morningglories.
sethoxydim @ 0.1875 to 0.375 lb/A	Annual grasses, johnsongrass, bermudagrass and weedy rice.	**Poast 1.5** 1 to 2 pt/A. Add 1 qt/A crop oil concentrate. Use 1 pt rate only on small annual grasses. Weedy rice may require repeat treatment. For spot treatment, use 1% solution of Poast + 1% crop oil concentrate. Spray to wet but not to runoff.	Best control before annual grasses exceed 14 days after emergence. Johnsongrass - 15" to 20." Bermudagrass - 1" ht or 6" runner length max. Weedy rice - first 7 days after emergence and before exceeds 4". **Timing for annual grass and weedy rice very critical.**	[Most effective grass herbicide on large annual grasses.] Apply only under conditions of active growth. Thorough coverage required. Do not cultivate 7 days before or after treatment. However, cultivation soon after 7 days will be helpful. Repeat treatments may be required if regrowth occurs. If a herbicide is needed for broadleaf weed control, apply Poast first and follow with broadleaf herbicide at least 1 day later. If broadleaf weeds form canopy over small grass, apply broadleaf herbicide, and wait 7 days before applying Poast.
flumiclorac @ 0.027 lb/A	Volunteer cotton, velvetleaf and other broadleaf weeds.	**Resource 0.86 EC** 6 oz/A. Add 1% crop oil concentrate.	10 to 14 days after weed emergence. Do not apply within 60 days of harvest.	Effective tank-mix partner with glyphosate for controlling volunteer Roundup Ready cotton. Do not apply more than 16 oz/year.
fluazifop @ 0.188 lb/A	Bermudagrass, johnsongrass and annual grasses.	**Fusilade DX 2E** 0.75 pt/A. Add 1% crop oil concentrate or 0.25% nonionic surfactant. Weedy rice may require repeat treatment. For spot treatment, use 2 qt Fusilade/100 gal. Add 1 gal crop oil or 1 qt nonionic surfactant/100 gal.	Before annual grasses exceed 14 days after emergence. Johnsongrass - 12" to 18." Bermudagrass - 3" height or 6" to 12" runner maximum. Weedy rice - first 7 days after emergence and before exceeds 2." **Timing for annual grass very critical.**	Apply only under conditions of active growth. Less effective than Poast on annual grasses, more effective on bermudagrass and johnsongrass. Repeat if necessary. Thorough coverage required. Do not tank mix. Do not cultivate 7 days before or after treatment. However, cultivation soon after 7 days will be helpful. See label for details. Repeat treatment may be needed if regrowth occurs. No-till johnsongrass control will require two applications. If a herbicide is needed for broadleaf weed control, apply Fusilade first and follow at least 1 day later. If broadleaf weeds form canopy over small grass, apply broadleaf herbicide, and wait 7 days before applying Fusilade. Do not apply after bloom stage of soybean.
fluazifop/fenoxaprop @ 0.166 + 0.25 lb/A	Annual grasses, johnsongrass and bermudagrass.	**Fusion 2.66 EC** 0.5 pt/A annual grasses 0.75 pt/A perennial grasses Add crop oil concentrate at 1% or 0.25% nonionic surfactant. See other comments on Fusilade above.	See above comments for Fusilade.	See above comments for Fusilade. Do not apply more than 24 fl oz/season.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
quizalofop p-ethyl @ 0.031 to 0.063 lb/A	Annual grasses, bermudagrass, johnsongrass and weedy rice.	**Assure II or Targa 0.88 EC** 5 oz/A for volunteer corn and milo, 8 oz/A most annual grasses, 10 oz/A for weedy rice, rhizome johnsongrass and bermu¬dagrass, repeat if needed. Add crop oil concentrate at 1% for ground application or 0.5% for aerial application or nonionic surfactant at 0.25%.	Before annual grasses exceed 14 days after emergence. Johnsongrass - 10" to 24". Weedy rice - first 14 days after emergence or 1 to 4 leaf. **Timing for annual grass and weedy rice is very critical.**	See above comments for Poast and Fusilade on cultivation and tank mixing. Performance comparable to Poast on annual grasses and Fusilade on rhizome johnsongrass. Better than either on small weedy rice. **Will not control volunteer Enlist corn or Max-ace/Provisia rice.**
clethodim @ 0.25 lb/A	Annual grasses, bermudagrass and johnsongrass. **Weedy rice seedhead suppression.**	**Select 2E or Select Max 0.97 EC** 8 or 16 oz/A. Add 1% crop oil concentrate + AMS.	Before annual grasses exceed 14 days after emergence. Johnsongrass - 12" to 24". Bermudagrass - 3" height or 6" runner length maximum. For weedy rice seedhead suppression, apply at internode elongation stage of weedy rice.	See above comments for Poast and Fusilade on cultivation and tank mixing. Performance comparable to Assure II for annual grasses and johnsongrass.
GENERAL STATEMENT ON TANK MIXING POSTEMERGENCE GRASS AND BROADLEAF HERBICIDES Results from tank mixing these herbicides has been variable among locations, years and persons conducting the studies. As a general statement, under optimum growing conditions and weed sizes, antagonism from Ultra Blazer, Reflex and Cobra has been very slight or not at all. When tank mixing with Basagran, increase the grass herbicide rate by 50%. Do not tank mix the grass herbicide with Scepter, Classic or Pursuit. Not all combinations are labeled. Refer to label. To eliminate any possibility of antagonism (loss of grass activity), apply grass herbicide first followed by the broadleaf herbicide 1 or more days later.				
S-metolachlor @ 1.24 to 1.6 lb/A	Residual control of grass and small-seeded broadleaf weeds.	**Dual Magnum 7.62 EC** 1.3 pt/A.	Up to 90 days PHI.	Residual pigweed and grass control. No post activity.
acetochlor @ 1.13 lb/A	Residual control of grass and small-seeded broadleaf weeds.	**Warrant 3ME** 3 pt/A.	Up to R2.	Do not exceed 4 qt/A/year. Do not use liquid fertilizer.
dimethenamid @ 0.56 to 0.98 lb/A.	Residual control of small-seeded grass and broadleaf weeds.	**Outlook 6 EC** 12 to 21 oz/A.	Up to fifth trifoliate leaf stage (V5).	Residual pigweed and grass control, no POST activity. Do not exceed 24 oz/A per year.
pyroxasulfone @0.09 to 0.12 lb/A	Residual control of small-seeded grass and broadleaf weeds.	**Zidua 4.17 SC** or **Anthem Maxx 4.3 SC** 3.0 to 5.75 oz/A or 3.0 to 5.5 oz/A	Up to V6.	Residual pigweed and grass control. No post activity.
S-metolachlor + fomesafen @ 1.09 to 1.26 + 0.24 to 0.28 lb/A	Early POST broadleaf with residual grass and broadleaf control. Apply to 2- to 3-inch pigweed.	**Prefix** 2 to 2.33 pt/A.	Early POST for best results up to 90 days PHI.	Temporary injury will occur. 90-day PHI.
acetochlor + fomesafen @ 1.06 to 1.54 + 0.24 to 0.34 lb/A	Early POST broadleaf with residual grass and broadleaf control. Apply to 2- to 3-inch pigweed.	**Warrant Ultra** 48 to 70 oz/A	Early POST for best results, up to R2 growth stage.	Temporary injury will occur. Only 1 application allowed per year.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
SOYBEAN				
Postemergence – Glyphosate-Resistant Varieties (Roundup Ready, Xtend, XtendFlex, Enlist E3)				
glyphosate @ 1 lb/A (two applications)	Emerged annual grasses, johnsongrass, weedy rice, cocklebur, sicklepod, pigweed morningglories, prickly sida, velvetleaf, eclipta, spurge, hemp sesbania, northern joint-vetch and smartweed. **See rating table for other species.**	**Glyphosate (4 lb/gal formulations)** Repeat application 2 pt/A each application. See instructions at right for timing of application.	Make first application when soybean and weeds are 10 to 14 days after emergence and repeat in 7 to 14 days. On the timing of the second application, University of Arkansas research has shown that a 14 DAE application followed by a second application 7 days later is the standard to which other programs must be compared. However, there can be exceptions depending upon environmental conditions. If repeating the application for control of regrowth on tough weeds such as morningglory, nutsedge or hemp sesbania, repeat in 7 to 10 days after the first. If applying for a second flush of weeds, repeat when second flush weeds are 10 to 14 days old.	Research to date has shown much more consistent results with split applications compared to single treatments. The second application improves control of the more tolerant weeds, such as morningglory, hemp sesbania and prickly sida, and provides control of second flush weeds. When the recommended timing of both applications is strictly adhered to in research, there has been little difference in control from 16 oz/A compared to 32 oz/A each. However, if the timing is missed, increase the rates. Soil moisture is very critical for activity. If no soil-applied herbicides are used and the soybean do not form a dense canopy, a third application may be required. Cultivation is recommended if soybean are planted in wide rows.
glyphosate @ 1 lb/A	Emerged annual grasses, weedy rice, johnsongrass, cocklebur, pigweeds, sicklepod, common ragweed and spurge. Weak on entireleaf and pitted morningglory, prickly sida and hemp sesbania. **See rating table for other species.**	**Glyphosate** (4 lb/gal formulations) 2.0 pt/A.	14 days after soybean emergence. For rhizome johnsongrass: 12" to 15" johnsongrass.	This treatment is primarily intended for use where a soil-applied herbicide has been used to control difficult species such as the morningglories, hemp sesbania (coffeebean) and prickly sida (teaweed)It is neither as effective on these species nor as broad spectrum as the split application recommended above. Repeat the treatment if reinfestation occurs before canopy closure. Cultivation is recommended if soybean are planted in wide rows.
glyphosate + *S*-metolachlor @ 0.7 to 0.84 + 0.94 to 1.12 lb/A	Same as above plus residual grass and pigweed control.	**Sequence 5.25 F** 2.5 to 3.5 pt/A.	Preplant through post.	Same as above. 90-day PHI.
glyphosate + chlorimuron @ 1 + 0.005 lb/A	Same as above with increased control of hemp sesbania, morningglories and yellow nutsedge.	**Glyphosate** (4 lb/gal formulations) **+ Classic 25 DF** 2 pt/A + 0.33 oz/A.	After first trifoliate leaf expanded. Small weeds.	
glyphosate + cloransulam-methyl @ 1.0 + 0.016 to 0.026 lb/A	Same as glyphosate above but increased control of morningglories, horseweed and giant ragweed.	**Glyphosate** (4 lb/gal formulations) **+ FirstRate 84DG** 2 pt/A + 0.3 to 0.5 oz/A FirstRate. Add 0.25% nonionic surfactant.	After first trifoliate leaf expanded. Small weeds.	
glyphosate + fomesafen or *S*-metolachlor + fomesafen @ 1.0 + 0.235 lb/A or 1.09 + 0.24 lb/A	Same as glyphosate above but increased control of morningglories, giant ragweed and Palmer pigweed.	**Glyphosate** (4 lb/gal formulations) **+ Flexstar or Prefix** 2 pt/A + 16 oz/A or 2 pt/A.	After first trifoliate leaf expanded. Small weeds.	
glyphosate + fomesafen @ 1.13 + 0.28 lb/A.	Same as glyphosate above but increased control of morningglories, giant ragweed and Palmer pigweed (use full rate of Flexstar).	**Flexstar GT 3.5** 4 pt/A.	After first trifoliate leaf expanded. Small weeds.	

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
Postemergence–LibertyLink Soybean				
University data has shown that a solid residual program applied after planting, followed by a timely application of glufosinate, is the best program approach to weed control in LibertyLink soybean. This is especially true for glyphosate-resistant pigweed programs. In wider row spacing, a residual at planting followed by a POST residual is different.				
glufosinate @ 0.59 fb. 0.59 lb/A	Grass and broadleaf weeds. Will control glyphosate-resistant weeds.	**Glufosinate 280 SL** 32 oz/A fb. 32 oz/A. (A single application of 43 oz/A is labeled.) Do not exceed 87 oz/year (**or equivalent rate of other formulations**)	7 to 10 days after soybean emergence. 2- to 3-inch weeds. Followed by sequential application 10 to 14 days later. Apply prior to bloom (R1).	Do not apply to non LibertyLink soybean. **The LibertyLink soybean system works best in combination with a well planned residual herbicide applied at burndown or at planting.** Abortion of blooms occurs with later than labeled applications.
L-glufosinate @ 0.24 to 0.36 lb/A	Emerged annual grasses, seedling Johnsongrass, broadleaf weeds.	**Liberty Ultra** 19 to 29 oz/A Can add AMS, no additional surfactant needed.	7 to 10 days after soybean emergence. 2- to 3-inch weeds. Followed by sequential application 10 to 14 days later. Apply prior to bloom (R1).	19 oz rate is equivalent to 29oz rate of standard glufosinate. Maximum allowable rate per year is 58 oz/A. Read label for additional restrictions. **Liberty Ultra rates do match lb per lb with generic glufosinate**.
glufosinate + *S*-metolachlor @ 0.59 lb/A + 0.95 to 1.2 lb/A	Grass and broadleaf weeds. Will control glyphosate-resistant weeds. Adds residual control of grass and small-seeded broadleaves.	**Glufosinate 280 SL + Dual Magnum 7.62 EC** 32 oz/A + 1 to 1.33 pt/A fb 32 oz/A.	2- to 3-inch weeds. Follow with a second Liberty application as needed. Apply prior to bloom (R1).	Good option where no residual was used at burndown or at planting. Expect some leaf burn.
glufosinate + pyroxasulfone @ 0.53 + 0.053 to 0.12 lb/A	Adds residual control of small-seeded grass and broadleaf weeds.	**Glufosinate 280 SL + Zidua 4.17 SC** or **Anthem Maxx** 32 oz/A + 1.75 to 5.75 or 2.0 to 5.5 oz/A.	Up to V6.	Good option where no residual was used at burndown or at planting. Expect some leaf burn.
glufosinate + acetochlor @ 0.59 + 1.13 lb/A	Adds residual control of small-seeded grass and broadleaf weeds.	**Glufosinate 280 SL + Warrant 3ME** 32 oz/A + 3 pt/A.	Apply prior to bloom (R1).	Good option where no residual was used at burndown or at planting. Expect some leaf burn.
glufosinate + *S*-metolachlor @ + fomesafen @ 0.59 +1.09 lb/A + 0.24 lb/A	Grass and broadleaf weeds. Will control glyphosate-resistant weeds. Adds residual control of grass and small-seeded broadleaves.	**Glufosinate 280 SL + Prefix 5.3 EC** 32 oz/A + 2 pt/A	2- to 3-inch weeds. Follow with a second Liberty application as needed.	Good option where no residual was used at burndown or at planting. Expect some leaf burn.
glufosinate + clethodim @ 0.59 + 0.25 lb/A	Enhanced grass control in LL soybean.	**Glufosinate 280 SL + Select Max 0.97 EC** 32 + 16 oz/A.	14 to 21 days after grass emergence.	Do not add other tank-mix partners.
Postemergence-XtendFlex or Enlist E3 Soybean				
Similar overlapping residual herbicide programs to those presented in the Postemergence-Overtop and LibertyLink Soybean Sections can be used in this soybean technology and are required for season-long control of weeds, especially Palmer amaranth.				
glyphosate + glufosinate @ 1.0 + 0.59 lb/A.	Broad spectrum control of grasses and broadleaf weeds.	**Glyphosate** (4 lb/gal formulations) **+ Glufosinate** (280 SL formulations) 32 + 32 oz/A.	Apply to small, actively growing weeds. Apply prior to bloom (R1).	Complete coverage of weeds is crucial.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
Postemergence-Enlist E3 Soybean Similar overlapping residual herbicide programs to those presented in the Postemergence-Overtop and LibertyLink Soybean Sections can be used in this soybean technology and are required for season-long control of weeds, especially Palmer amaranth.				
glyphosate + glufosinate @ 1.0 + 0.59 lb/A.	Broad spectrum control of grasses and broadleaf weeds.	**Glyphosate** (4 lb/gal formulations) **+ Glufosinate** (280 SL formulations) 32 + 32 oz/A.	Apply to small, actively growing weeds. Apply prior to bloom (R1).	Complete coverage of weeds is crucial.
2,4-D choline @ 0.95 lb/A.	Annual broadleaf weeds.	**Enlist One** 2.0 pt/A.	Emergence to full flowering stage (R2).	Apply only to Enlist E3 soybean. Check website, www.EnlistTankmix.com, for approved adjuvants/tank mixtures. - Some crops and plant species are very sensitive to 2,4-D. Read the label and follow all directions regarding nozzles, buffers, wind speed and direction. - At the time of application, the wind cannot be blowing toward adjacent tomatoes, other fruiting vegetables, cucurbits, grapes, and cotton. - Physical drift has been found to be the primary cause of off-target movement. Use sound drift mitigation practices during the application. - Applicators must take required training.
2,4-D choline + glyphosate @ 0.71 + 0.74 to 0.95 + 1.0 lb/A.	Annual grasses and broadleaf weeds.	**Enlist Duo** 3.5 to 4.75 pt/A.	Emergence to full flowering stage (R2).	See above comments.
2,4-D choline + glufosinate @ 0.95 + 0.59 lb/A.	Most annual grasses and broadleaves. Best treatment for emerged pigweed.	**Enlist One + Liberty** 2 pt/A + 32 oz/A.	Emergence through beginning bloom (R1).	See above comments. Other glufosinate products may be labeled for tank-mixing.
Postemergence–STS or BOLT Soybean				
glyphosate + chlorimuron/ thifensulfuron @ 1.0 + 0.013 to 0.02 lb/A	Hemp sesbania, morningglory and yellow nutsedge plus some residual.	**Glyphosate** (4 lb/gal formulations) **+ Synchrony XP** 2.0 pt/A + 0.75 to 1.125 oz/A.	After first trifoliate leaf (V1).	Apply only to STS or BOLT/RR soybean varieties. Use Sequence or add Dual for residual grass component. The addition of Dual or Zidua may increase crop response from Permit Plus on STS soybean. Good choice where potential ALS herbicide drift from rice may occur. There are STS LibertyLink varieties available also.
glyphosate + halosulfuron + thifensulfuron @ 1.0 + 0.031 + 0.004 lb/A	Same as above with enhanced nutsedge and smartweed control.	**Glyphosate** (4 lb/gal formulations) **+ Permit Plus** 2.0 pt/A + 0.75 oz/A.	From 21 days prior to planting up to 88 days prior to harvest. Brief chlorosis may occur on some STS varieties.	Apply only to STS or BOLT/RR soybean varieties. Use Sequence or add Dual for residual grass component. The addition of Dual or Zidua may increase crop response from Permit Plus on STS soybean. Good choice where potential ALS herbicide drift from rice may occur. There are STS LibertyLink varieties available also.
Postemergence-Directed				
2,4-DB @ 0.2 lb/A	Common cocklebur, morningglory.	**Butyrac, Butoxone** 0.8 pt/A of 2 lb/gal 2,4-DB (Butyrac 200) or 1 pt/A of 1.75 lb/gal 2,4-DB.	Direct spray to soybean at V4 (8-inch) stage and repeat 5 to 7 days later.	Apply directed spray treatment no higher than one-third up the soybean stem. Cover weeds thoroughly. ROOT ROT OR POOR GROWING CONDITIONS FOLLOWING THE APPLICATION MAY RESULT IN SOYBEAN INJURY. USE SAME PRECAUTIONS IN APPLYING 2,4-DB AS ARE USED IN APPLYING 2,4-D. AVOID DRIFT. DO NOT APPLY WITHIN 60 DAYS OF HARVEST.

NOTE–Many producers are reluctant to apply 2,4-DB with directed spray equipment used in cotton. This can be done successfully, and many producers do so. The following procedure has been shown to be effective in cleaning 2,4-DB from a sprayer system.

(1) Replace any cracked or badly worn hoses.
(2) Flush system completely with detergent water; drain.
(3) Flush system with ammonia solution (1 quart ammonia per 25 gallons water); drain.
(4) Fill system with above concentration ammonia solution; let stand overnight.
(5) Drain system next day; flush with excess water.
(6) Flush system the day before next use.
(7) Clean outside of equipment and nozzle assemblies in above manner.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
SOYBEAN Preharvest				
paraquat @ 0.25 lb/A	Desiccation of green weed foliage and soybean defoliation.	**Paraquat** (3 lb/gal) Add a surfactant. 10.67 oz/A.	When ½ of soybean leaves have dropped and the other ½ are yellow. Apply 15 days prior to harvest or 3 days prior to harvest for seed production.	For indeterminate soybean, apply when 65% of pods are brown and remaining pods are turning yellow. Do not pasture livestock within 15 days of treatment and remove 30 days before slaughter.
sodium chlorate @ 6 lb/A	Desiccation of green weed foliage and soybean defoliation.	**Sodium Chlorate** Several brands and trade names available. 2 gal/A of 3 lb/gal or 1 gal/A of 6 lb/gal.	When ½ of soybean leaves have dropped and the other ½ are yellow.	See label for details. More dependent on environmental conditions for activity than paraquat.
paraquat + sodium chlorate @ 0.167 + 3 lb/A	Desiccation of green weed foliage and soybean defoliation.	**Paraquat** (3 lb/gal) 10.67 oz/A + **sodium chlorate** 3 lb ai/A (1 gal of 3 lb/gal or 0.5 gal of 6 lb/gal). Add a surfactant.	When ½ of soybean leaves have dropped and the other ½ are yellow. Apply 15 days prior to harvest. 3 days prior to harvest for seed production.	For indeterminate soybean, apply when 65% of pods are brown and remaining pods are turning yellow. See label for details. More dependent on environmental conditions for activity than paraquat.
glyphosate @ 1 lb/A	Desiccation of green weed foliage.	**Glyphosate** (4 lb/gal formulations) 2 pt/A.	After soybean pods have lost all green color.	See label for details. Much slower than paraquat.
carfentrazone @ 0.025 lb/A	Desiccation of morningglory foliage.	**Aim 2EC** 1.5 oz/A. Add 0.25% nonionic surfactant or 0.5% crop oil concentrate.	After soybean pods have lost all green color. 3-day pre-harvest interval.	Excellent coverage is required. Add glyphosate or paraquat for best results.
saflufenacil @ 0.044 lb/A	Desiccation of green foliage.	**Sharpen** 2.0 oz/A. Add 1% v/v MSO.	At least 3 days prior to harvest.	Excellent coverage is required.
Spot Treatment				
2,4-DB	Common cocklebur.	**Butyrac, Butoxone, etc.** 1/2 gal in 100 gal water.	Spot treat individual weeds.	Spray terminal area and upper leaves of cocklebur. Spray in manner similar to boom spraying with 20 gpa nozzle output.
glyphosate	Bermudagrass.	**Glyphosate** (4 lb/gal formulations) 1 to 2 gal per 100 gal water. Add surfactant.	Spot treat emerged weeds before pod set of soybean.	More effective on large, actively growing weeds.
clethodim	Johnsongrass.	**Select 2 EC** or **Select Max 0.97 EC** 8 or 16 oz/A + 1% COC/A.	Spot treat emerged weeds before pod set of soybean.	If field treated with glyphosate previously, this is the preferred spot treatment.
Postemergence johnsongrass emerged above canopy				
glyphosate wipe-on	Johnsongrass.	**Glyphosate** (4 lb/gal formulations) 33% solution in ropewick or other wipe-on applicator.	After there is sufficient height difference between crop and weed.	Use in conjunction with other good johnsongrass control practices.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
EDAMAME (edible vegetable bean)				
Preplant Burndown				
paraquat @ 0.47 to 0.94 lb/A	Annual broadleaf and grass weeds (existing vegetation).	**Paraquat** (3 lb/gal) 1.88 to 3 pt/A in at least 20 gal water per acre for ground application. 5 to 10 gal for aerial application. Add 0.25% surfactant.	Use prior to planting on seedbeds that are not to be disturbed before planting. Use higher rate on weeds larger than 2 inches.	Good spray coverage is essential.
glyphosate @ 1 lb/A	Annual grasses and broadleaf weeds (existing vegetation). Weak on morninglories.	**Glyphosate** (4 lb/gal formulations) 2 pt/A. Use high rate on all but very small weeds.	Use prior to planting for vegetation knockdown. Can be tank mixed with Pursuit or Spartan Charge for improved control of some species and residual activity.	Best results when applied in lower spray volumes, i.e., 5 to 10 gpa.
Preplant Incorporated				
trifluralin @ 0.5 to 1 lb/A	Annual grass weeds and johnsongrass from seed.	**Treflan 4 EC** 1 to 2 pt/A.	From 6 weeks prior to planting to time of planting.	See Treflan recommendations in Soybean section.
S-metolachlor @ 0.95 to 1.6 lb/A	Weedy rice, annual grasses and yellow nutsedge.	**Dual Magnum 7.62 EC** 1 to 1.67 pt/A.	During final seedbed preparation (within 7 days of planting). Can be applied up to third trifoliate.	See Dual Magnum recommendations in Soybean section.
imazethapyr @ 0.063 lb/A	Yellow nutsedge, pitted, entire-leaf and ivyleaf morninglories, spotted spurge and smartweed. Suppression of annual grass, weedy rice and johnsongrass.	**Pursuit 2EC** 4 oz/A.	During final seedbed preparation up to 7 days before planting. Can be tank-mixed with Dual. Can also be tank-mixed with glyphosate for preplant burndown to improve nutsedge control.	Can give excellent residual control if rain occurs within 5 days. **40 month rotation to non Clearfield rice.**
Preemergence				
S-metolachlor @ 0.9 to 1.5 lb/A	Annual grasses, weedy rice, nutsedge and small-seeded broadleaves.	**Dual Magnum 7.62 EC** 1 to 1.67 pt/A.	At planting, up to third trifoliate.	Rainfall needed for activation.
linuron @ 0.5 to 1.0 lb/A	Small-seeded broadleaf weeds.	**Lorox 50 DF** 1 to 2 lb/A.	Apply immediately after planting – before soybean emergence.	See supplementary label.
carfentrazone + sulfentrazone @ 0.008 to 0.02 + 0.075 to 0.175 lb/A	Small-seeded broadleaf weeds.	**Spartan Charge 3.45 SL** 3 to 7 oz/A.	Apply immediately after planting – before soybean emergence.	See AR 24(c) label.
clomazone @ 0.5 lb/A	Annual grass. See soybean and rice tables.	**Command 3ME** 1.3 pt/A.	Apply immediately after planting – before soybean emergence.	See soybean and rice tables. One application per year.

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
EDAMAME (edible vegetable bean)				
Postmergence				
imazamox @ 0.032 lb/A	Some grasses and broadleaf weeds.	**Beyond Xtra 1 EC** 4 oz/A. Add 0.25% v/v NIS.	Apply to 2" to 4" weeds.	See supplementary label.
imazethapyr @ 0.063 lb/A	Yellow nutsedge, pitted, entire-leaf and ivyleaf morningglories, spotted spurge and smartweed. Suppression of annual grass, weedy rice and johnsongrass.	**Pursuit 2 EC** 4 oz/A. Add a nonionic surfactant.	Within first 10 days after weed emergence.	Timing is extremely critical. Weeds must be very small. Can give excellent residual control if rain occurs within 5 days. **40-month rotation to non Clearfield rice.**
clethodim @ 0.25 lb/A	Annual grasses, bermudagrass and johnsongrass. **Weedy rice seedhead suppression.**	**Select 2E or Select Max 0.97 EC** 8 or 16 oz/A. Add 1% crop oil concentrate + AMS.	Before annual grasses exceed 14 days after emergence. Johnsongrass - 12" to 24". Bermudagrass - 3" height or 6" runner length maximum. For weedy rice seedhead suppression, apply at internode elongation stage of weedy rice.	See comments (p. 57) for Poast and Fusilade on cultivation and tank mixing. Performance comparable to Assure II for annual grasses and johnsongrass.
fomesafen @ 0.25 lb/A	Broadleaf weeds.	**Reflex 2 EC** 1 pt/A.	Up to three trifoliate.	Do not apply late – will burn pods and blooms.