

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
<b>COTTON</b>				
For additional information on burndown herbicides see p. 22, <b>WEED RESPONSE RATINGS FOR BURNDOWN HERBICIDES.</b>				
<b>Preplant–Burndown</b>				
paraquat @ 0.47 to 0.94 lb/A	Most emerged broadleaf weeds and grasses.	<b>Paraquat (2 or 3 lb/gal formulations)</b> 32 to 64 oz/A or 1.25 to 2.5 pt/A. Use high rate on weeds larger than 2 inches. Add a surfactant (p. 3).	After beds are formed but prior to planting.	Apply for knockdown of existing vegetation prior to planting. Not dependent upon temperature for activity. Add 2,4-D or Clarity for improved control of horseweed. Add Cotoran or Diuron for improved control.
glufosinate @ 0.73 lb/A	Most emerged broadleaf and grass weeds.	<b>Glufosinate (280 SL formulations)</b> 40 oz/A. Follow label for surfactant use.	Prior to planting.	Add 2,4-D or Clarity for improved control of horseweed if preplant interval can be achieved. Use nozzles and pressure that create medium spray droplets. Use 10 gpa.
glyphosate @ 1 lb/A	Annual grasses and broadleaf weeds. Does not control entireleaf and ivyleaf morningglories.	<b>Glyphosate (4 lb/gal formulations)</b> 2 pt/A.	Use prior to planting for vegetation knockdown.	Add 2,4-D or Clarity for control of horseweed.
glyphosate + carfentrazone @ 1 lb/A + 0.016 lb/A	Improved control of morning-glory and henbit.	<b>Glyphosate (4 lb/gal formulations) + Aim 2EC</b> 2 pt/A + 1.0 oz.	Use prior to planting for vegetation knockdown.	Add surfactant if glyphosate formulation does not contain one. Add 2,4-D or Clarity for improved control of horseweed.
glyphosate + 2,4-D @ 1 lb/A + 1 lb/A	Annual grasses and broadleaf weeds.	<b>Glyphosate (4 lb/gal formulations) + 4 SL 2,4-D Amine</b> 2 pt/A + 2 pt/A.	At least 28 days prior to planting.	Adding residual herbicide such as Caparol, Valor, Cotoran or Direx provides residual control of horseweed.
glyphosate + 2,4-D + rimsulfuron/thifensulfuron @ 1 + 1 + 0.25/0.25 lb/A	Annual grasses and broadleaf weeds.	<b>Glyphosate (4 lb/gal formulations) + 2,4-D + LeadOff/Crusher</b> 2 pt/A + 1.5 pt/A + 1.5 oz/A.	At least 30 days prior to planting. Some injury from LeadOff has been observed.	For horseweed use 8 oz/A dicamba.
glyphosate + dicamba @ 1 lb/A + 0.25 lb/A	Annual grasses and broadleaf weeds including horseweed.	<b>Glyphosate (4 lb/gal formulations) + dicamba</b> 2 pt/A + 8 oz/A.	At least 21 days prior to planting following 1 inch of rainfall.	Good option for glyphosate-resistant horseweed. Adding residual herbicide such as Valor, Caparol, Cotoran or Direx provides residual control of horseweed.
glyphosate + flumioxazin @ 1 lb/A + 0.032 to 0.063 lb/A	Annual grasses and broadleaf weeds.	<b>Glyphosate (4 lb/gal formulations) + Valor 51 WDG</b> 2 pt/A + 1 to 2 oz/A.	At least 14 days for 1 oz/A or 21 days for 2 oz/A + 1 inch of rain prior to planting.	Valor is rainfast in 1 hour. Provides residual control of horseweed. Add Clarity for resistant horseweed.
glyphosate + fomesafen @ 1 lb/A + 0.25 lb/A	Broadleaf weeds including Palmer pigweed.	<b>Glyphosate (4 lb/gal formulations) + Reflex 2 EC</b> 2 pt/A + 1 pt/A.	Apply 14-21 days preplant + 0.5 inch rainfall prior to planting.	Provides residual control of horseweed and pigweed for 6 weeks after application. Knocking or dragging top of beds prior to planting will remove herbicide and allow weed infestation.

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<b>Preplant–Burndown [cont.]</b>				
glyphosate + flumioxazin + dicamba @ 1 lb/A + 0.063 lb/A + 0.25 lb/A	Annual grass and broadleaf weeds including horseweed.	<b>Glyphosate (4 lb/gal formulations) + dicamba + Valor 51 WDG or Afforia</b> 2 pt/A + 8 oz/A + 2 oz/A or 2.5 oz/A.	At least 30 days following 1 inch of rainfall prior to planting.	Provides residual control of horseweed and pigweed for 6 weeks after application.
glyphosate + oxyfluorfen @ 1 lb/A + 0.25 lb/A	Annual grass and broadleaf weeds.	<b>Glyphosate (4 lb/gal formulations) + Goal 2XL</b> 2 pt/A + 1 pt/A.	Apply late February to mid March.	If planting directly into the stale seedbed, application of Goal requires at least 30 days prior to planting <b>and</b> at least three ¼-inch rainfalls. If these conditions are not met, a 2-inch surface incorporation is required before planting.
<b>SOYBEANS</b>				
For additional information on burndown herbicides see page 22, WEED RESPONSE RATINGS FOR BURNDOWN HERBICIDES.				
<b>Preplant–Burndown</b>				
paraquat @ 0.47 to 0.94 lb/A	Annual broadleaf and grass weeds (existing vegetation).	<b>Paraquat (2 or 3 lb/gal formulations)</b> 32 to 64 oz/A or 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. Adding metribuzin will increase activity.
glyphosate @ 1 lb/A	Annual grasses and broadleaf weeds (existing vegetation). Weak on morningglories.	<b>Glyphosate (4 lb/gal formulations)</b> 2 pt/A. Use high rate on all but very small weeds.	Use prior to planting for vegetation knockdown.	Best results when applied in lower spray volumes, i.e., 5 to 10 gpa.
glufosinate @ 0.64 lb/A	Good option for glyphosate-resistant horseweed. Annual grasses and broadleaf weeds (existing vegetation).	<b>Glufosinate (280 SL formulations)</b> 36 oz/A.	Use prior to planting for vegetation knockdown.	Good coverage and warm weather will increase efficacy. Do not use prior to planting Liberty Link soybeans.
glyphosate or paraquat + metribuzin @ 1 lb/A or 0.47 to 0.78 + 0.25 to 0.75 lb/A	Postemergence control of existing annual weeds. See rating table for preemergence control with metribuzin.	<b>Glyphosate (4 lb/gal formulations) or Paraquat (2 or 3 lb/gal formulations) + Metribuzin 75DF</b> 2 pt/A or 32 to 64 oz/A or 1.8 to 3 pt/A + 0.33 to 1 lb/A DF. Add 0.25% surfactant.	At planting or prior to crop emergence.	Tank mix. Apply as above. Do not use on sensitive varieties listed on label. A list of metribuzin-tolerant varieties is available. Avoid use on high pH soils.

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glyphosate or paraquat + chlorimuron/metribuzin @ 1 lb/A or 0.47 to 0.94 + 0.188 lb/A	Annual broadleaf and grass weeds. Improved control of cocklebur, hemp sesbania, morningglories, smartweed and prickly sida. See rating table for preemergence control with Canopy.	<b>Glyphosate (4 lb/gal formulations) or Paraquat (2 or 3 lb/gal formulations) + Canopy 75DF</b> 2 pt/A or 32 to 64 oz/A or 1.8 to 3 pt/A + 6 oz/A. Add 0.25% surfactant.	Prior to planting.	This is a reduced rate of Canopy. Higher rates have been shown to cause injury in minimum tillage culture. Tank mix with Dual or another grass herbicide, or follow this treatment with a postemergence grass herbicide for season-long grass control. A follow-up postemergence broadleaf treatment will also likely be needed.
glyphosate or paraquat + sulfentrazone/cloransulam @ 1 lb/A or 0.47 to 0.94 + 0.13 to 0.26 lb/A	Annual broadleaf and grass weeds. Improved control of cocklebur, morningglories, smartweed and horseweed. Additional residual control of many broadleaf weeds, including Palmer amaranth.	<b>Glyphosate (4 lb/gal formulations) or Paraquat (2 or 3 lb/gal formulations) + Sonic</b> 2 pt/A or 32 to 64 oz/A or 1.8 to 3 pt/A + 3 to 6 oz/A.	Prior to planting.	Tank mix. Good program for burndown with residual broadleaf control. Good program for Liberty Link soybeans.
glyphosate + oxyfluorfen @ 1 lb/A + 0.25 lb/A	Annual grass and broadleaf weeds.	<b>Glyphosate (4 lb/gal formulations) + Goal 2XL</b> 2 pt/A + 1 pt/A.	Apply late February to mid March.	If planting directly into the stale seedbed, application of Goal requires at least 30 days prior to planting <b>and</b> at least three ¼-inch rainfalls. If these conditions are not met, a 2-inch surface incorporation is required before planting.
glyphosate or paraquat + 2,4-D or dicamba + chlorimuron/tribenuron or flumioxazin @ 1 lb/A or 0.47 to 0.94 + 1 lb/A or 0.25 lb/A + 0.28 to 0.37 lb/A or 0.063 lb/A	Horseweed and other broadleaf weeds.	<b>Glyphosate (4 lb/gal formulations) or Paraquat (2 or 3 lb/gal formulations) + 2,4-D or dicamba + Canopy EX or Valor (or other Valor-containing premixes)</b> 2 pt/A or 32 to 64 oz/A or 1.8 to 3 pt + 2 pt/A or 8 oz/A + 1.5 to 2 oz/A or 2 oz.	For dicamba and 2,4-D, 21 days after 1.0 inch rainfall, prior to planting.	Burndown plus enhanced control of broadleaf weeds. If horseweed is present, use at least 8 oz/A of dicamba.
glyphosate + thifensulfuron/tribenuron @ 1 lb/A + 0.016 to 0.025 lb/A	Improved control of garlic, curly dock, smartweed and henbit.	<b>Glyphosate (4 lb/gal formulations) + FirstShot SG</b> 2 pt/A + 0.5 to 0.8 oz/A.	Immediately prior to planting. Label requires application be made at least 7 days prior to planting.	Burndown plus enhanced control of broadleaf weeds.
glyphosate + carfentrazone @ 1 lb/A + 0.016 lb/A	Improved control of morningglories.	<b>Glyphosate (4 lb/gal formulations) + Aim 2 EC</b> 2 pt/A + 1 oz/A.	At planting or prior to crop emergence.	Good spray coverage is essential.
sulfentrazone + metribuzin @ 0.225 + 0.2 lb/A	Broadleaf weeds.	<b>Authority MTZ</b> 12-16 oz/A. Add 1% COC.	Up to 14 days prior to planting.	Add glyphosate or paraquat for existing vegetation. See soil texture chart on page 47. For higher rates, use tolerant varieties. Use 16 oz/A on clay soils.
flumioxazin @ 0.063 lb/A	Residual horseweed control. No post horseweed activity.	<b>Valor 51 WDG</b> 2 oz/A.	Prior to soybean emergence.	Apply to clean ground or tank-mix for post weed control. Rainfall at emergence may result in injury, mainly cosmetic.

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<b>SOYBEANS</b>				
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<b>Preplant–Burndown [cont.]</b>				
flumetsulam @ 0.05 to 0.066 lb/A	Horseweed and other broad-leaves.	<b>Python 80 WDG</b> 1 to 1.33 oz/A.	Prior to planting wheat-beans.	Contact and residual for horseweed. Good tank mix with glufosinate. Good option where horseweed is present less than 14 days prior to planting.
flumioxazin + chlorimuron/thifensulfuron	Residual horseweed control.	<b>Envive or Enlite WDG</b> 3.5 or 2.8 oz/A.	Prior to soybean emergence.	Use 2.8 oz/A Enlite on high pH soils.
saflufenacil @ 0.022 to 0.044 lb/A	Horseweed rapid burndown – regrowth will occur.	<b>Sharpen 2.85 SC</b> 1 to 2 oz/A.	Prior to soybean emergence. 30 days prior to plant depending on rate applied and soil type.	Tank mix with glyphosate, 1% MSO and 2% v/v of AMS or UAN for best activity. 30-day plant back on coarse soils.
saflufenacil + dimethenamid @ 0.022 to 0.044 + 0.2 to 0.4 lb/A	Horseweed burndown and residual control.	<b>Verdict 5.57 EC</b> 5 to 10 oz/A.	Prior to planting to preplant. 30 days prior to plant depending on rate applied and soil type.	Tank mix with glyphosate, 1% MSO and 2% v/v of AMS or UAN for best activity.
glyphosate + 2,4-D + rimsulfuron/thifensulfuron @ 1 + 1 + 0.25/0.25 lb/A	Henbit, grasses and broadleaves.	<b>Glyphosate (4 lb/gal formulations) + 2,4-D + Leadoff</b> 2 pt/A + 1.5 pt/A + 1.5 oz/A.	At least 30 days prior to planting. Recommend planting STS or BOLT soybeans to avoid risk of injury.	For horseweed, substitute dicamba 8 oz/A for 2,4-D. See label for specific plant-back intervals to soybean.
flumioxazin + thifensulfuron + tribenuron @ 0.063 + 0.008 + 0.008 lb/A	Residual horseweed control. No post horseweed activity. Post activity of winter annuals and smartweed.	<b>Afforia 50.8 WDG</b> 2.5 oz/A..	Prior to soybean emergence. Up to 3 days after planting.	Apply to clean ground or tank-mix for post weed control. Rainfall at emergence may result in injury, mainly cosmetic.
<b>RICE</b>				
For additional information on burndown herbicides see p. 22, WEED RESPONSE RATINGS FOR BURNDOWN HERBICIDES.				
<b>Preplant-Vegetation Knockdown</b>				
glyphosate @ 1.0 lb/A	Emerged weeds.	<b>Glyphosate (4 lb/gal formulations)</b> 32 oz/A.	Apply at least 7 days before seedbed preparation.	Field must be free of standing water.
saflufenacil @ 0.022-0.044 lb/A	Pigweed, mare’s tail, morning-glory and small-seeded broad-leaves.	<b>Sharpen</b> 1 to 2 oz/A. Must use a minimum of 1 pt/A MSO + AMS.	Prior to planting. Timing to small weeds or prior to weed emergence.	Tank mix with glyphosate or paraquat. Use high water volumes for best coverage. See label for crop specific restrictions and limitations.
glyphosate + thifensulfuron + tribenuron @ 1.0 + 0.016 to 0.025 lb/A	Improved control of curly dock, smartweed, henbit and garlic.	<b>Glyphosate (4 lb/gal formulations) + FirstShot 50 SG</b> 32 oz/A + 0.5 to 0.8 oz/A.	Prior to planting.	Field must be free of standing water.

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glyphosate + bensulfuron @ 1.0 + 0.023 lb/A	Improved control of yellow nutsedge, morningglory and hemp sesbania.	<b>Glyphosate (4 lb/gal formulations) + Londax 60 DF</b> 32 oz/A + 0.5 oz/A.	Apply at least 7 days before seedbed preparation or planting.	Field must be free of standing water.
glyphosate + clomazone @ 1.0 lb + 0.3-0.6 lb/A	Emerged weeds plus residual grass.	<b>Glyphosate (4 lb/gal formulations)</b> 32 oz <b>+ Command 3 ME</b> 0.8-1.6 pt/A Medium (Silt Loam) 0.8-1.1 pt/A      Fine (Clay) 1.3-1.6 pt/A Research has shown very little difference in grass control among rates within each soil type. <b>Note: On thin soils, especially those that have been leveled, consider rates as low as 0.5 pt/A.</b>	Up to 14 days prior to planting.	Field must be free of standing water. Antagonism has been documented with this tank mix. Always use full rate of glyphosate.
glyphosate + halosulfuron @ 1.0 lb + 0.065 lb/A	Emerged weeds plus enhanced sedge control. Will suppress other broadleaves.	<b>Glyphosate (4 lb/gal formulations) + Permit 75 WG</b> 32 oz/A + 1 oz/A.	Up to 14 days prior to planting.	Field must be free of standing water. Avoid glyphosate drift to corn. pH must be less than 8.0.
paraquat @ 0.625 lb/A	Emerged weeds.	<b>Paraquat (2 or 3 lb/gal formulations)</b> 40 or 26 oz/A. Add 0.25% v/v non-ionic surfactant.	Use high rate on weeds larger than 2 inches.	Provides rapid desiccation of existing vegetation. Paraquat is sensitive to off-target movement; therefore, drift control is necessary. Refer to label for precautions and tank-mix instructions.