

Cotton Comments

Pre-Plant Burndown Considerations for Cotton

Chris Tingle,
Systems Agronomist-
Cotton

Bill Robertson
Extension Agronomist-
Cotton

With the popularity of conservation tillage and stale seedbed systems, it is essential to implement a carefully planned pre-plant burndown program. Winter weeds not controlled can affect the crop by competing for available soil moisture, nutrients and sunlight. Some winter weeds may even provide alternate hosts for early-season insects harmful to cotton. Successful programs start with proper weed identification. Here are some links that may assist you in properly identifying various winter weeds

Weed Science Society of America
<http://www.wssa.net/subpages/weed/herbarium0.html>

USDA/NRCS Plant Data Base
<http://plants.usda.gov/>

Utilizing resources such as the MP-44 (*Recommended Chemicals for Weed and Brush Control*) can help in avoiding costly mistakes in herbicide application. Programs including paraquat or glyphosate oftentimes are sufficient. However, some situations may require the addition of a tank-mix partner such as 2,4-D, Harmony Extra, or Goal. Here are some examples of different control options for many winter weeds found in Arkansas.

Base Programs

Paraquat (Gramoxone Max, Boa, etc.)

- Use rates: 1 ½ -3 pt/A (based on 3 lb a.i./gallon)
- Add non-ionic surfactant (1 qt per 100 gallons of spray solution) or crop oil concentrate (1 gallon per 100 gallons of spray solution)

- Use higher rates for weeds larger than 2 inches
- Able to plant soon after application

Weed Spectrum:

Strengths:

Annual Bluegrass, Carolina Geranium, Chickweeds, Henbit

Marginal:

Cutleaf Evening Primrose, Carolina Foxtail

Weakness:

-Curly Dock, Horseweed (Marestail), Ryegrass

Glyphosate (Roundup formulations, Touchdown, etc.):

- Use rates: 1-2 pt/A (based on 4 lb a.i./A)
- Be careful of product formulation, some do not contain surfactant. If not included, add 1 qt per 100 gallons of spray solution.
- Higher rates may be needed for larger weeds
- Able to plant soon after application

Weed Spectrum:

Strengths:

Annual Bluegrass, Chickweeds, Horseweed (Marestail), Little Barley

Marginal:

Curly Dock, Carolina Geranium, Henbit

Weakness:

Cutleaf Evening Primrose



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Tank-Mix Partners

Thifensulfuron + Tribenuron (*Harmony Extra*):

- Use rates 1/2–2/3 oz/A
- Primarily added to improve smartweed and curly dock control
- Do not apply within 45 days of planting

2,4-D Formulations:

- Use rates 1/2-1 1/2 pt/A (based on 4 lb a.i./gallon formulation)
- Primarily added to improve cutleaf evening primrose and curly dock control
- Do not apply within 30 days of planting

Oxyfluorfen (*Delta Goal*):

- Use rates 1-2 pt/A (based on 2 lb a.i./gallon formulation)
- Primarily added to glyphosate to improve Carolina geranium and henbit control and added to paraquat to improve Carolina foxtail control
- Can provide up to 4 weeks of residual control
- Do not apply within 7 days of planting
- Beds should be worked thoroughly to a depth of at least 2 inches prior to planting

Recommendations

- Scout for weeds now
- Match burndown herbicides and timings to weed species present
- Apply when weeds are actively growing
 - Delay applications 4 to 5 days after the passage of significant cold weather
 - Allow 1 to 2 days of active growth to insure uptake and translocation prior to the arrival of significant cold weather
- Adequate and uniform coverage is essential
- Do not apply 2,4-D within 30 days of planting
- Observe all other label recommendations concerning restrictions and guidelines for burndown applications.

Expected Response From Pre-Plant Herbicides for Winter Weeds Common to Arkansas Cotton Production (Excerpt from MP-44)

	Annual Bluegrass	Carolina Foxtail	Carolina Geranium	Chickweeds	Curly Dock	Cutleaf Evening Primrose	Henbit	Horseweed (Marestail)	Little Barley	Mustards	Prickly Lettuce	Purslane Speedwell	Virginia Pepperweed	Slender Aster	Coreopsis	Swinecress	Sow Thistle spp.	Ryegrass	Vetch Cover	Wheat Cover
Roundup/Touchdown/Glyphosate ¹	10	8	7	10	7	6	7	9	10	10	9	10	10	8	4	6	8	7	6	9
Roundup ¹ + Harmony Extra ²	10	8	9	10	10	7	9	9	10	10	10	10	10	8	4	6	8	7	8	9
Gramoxone Max ³	9	7	9	10	5	7	8	5	9	10	6	6	0	6	8	4	6	5	7	7
2,4-D (labeled formulations)	0	0	5	0	9	8	0	9	0	6	8	-	2	7	7	6	7	0	10	0
Roundup ¹ + Goal	10	10	9	10	8	7	10	9	10	10	9	10	8	8	4	6	8	7	7	9
Gramoxone Max ³ + Goal	10	10	10	10	7	8	10	6	10	10	8	7	6	6	8	4	6	5	7	7

¹Roundup rates are 1 qt/A based on 4 lb a.i./gallon (some formulations may require additional surfactant at 0.25% v/v)

²Harmony Extra rates are 2/3 oz/A and label requires at least 45 days prior to planting

³Gramoxone Max rates are 1.5 pt/A and requires 0.25% v/v surfactant or 1% v/v crop oil concentrate