

# Alternate Postemergence Strategies for Weed Control in Cotton

Since the late 1990s, glyphosate has been a staple in the agricultural industry for weed control. The use of glyphosate allowed growers to control a variety of weeds with limited inputs. However, the use of glyphosate for weed management in cotton has become more challenging due to supply shortages, manufacturing-related issues, and widespread glyphosate resistance in multiple difficult-to-control weed species. Current recommendations for weed control in cotton include an effective residual herbicide program. Effective preemergence herbicides include acetochlor (Warrant®), dimethenamid-p (Outlook®), fluometuron (Cotoran®, etc.), diuron (Diuron 4L, etc.), fluridone (Brake®), and pendimethalin (Prowl® H2O). However, broad

spectrum postemergence weed control is critical to maximizing cotton productivity. A number of products are available for broadcast-applied, postemergence weed control in cotton, including 2,4-D, clethodim (Select Max®, etc.), glufosinate (Liberty®, etc.), pyriithiobac (Staple® LX), quizalofop (Assure® II, etc.), sethoxydim (Poast®, etc.), or trifloxysulfuron (Envoke®). This publication presents control ratings for various herbicides for weeds commonly found in cotton. Ratings range from 1 to 10 with a score less than 6 considered less than ideal control; 7 to 8, good control; and 9 to 10, excellent control. This information was obtained from the 2023 *Weed Control Guidelines for Mississippi*.

**Control ratings for 2, 4-D (Navigate®, etc.) against common weeds.**

Weed	Activity level
Annual sedge	—
Barnyardgrass	—
Broadleaf Signalgrass	—
Cocklebur	9
Crabgrass	—
Fall panicum	—
Goosegrass	—
Johnsongrass – rhizome	—
Johnsongrass – seedling	—
Nutsedge – purple	5
Palmer, spiny amaranth, waterhemp	8
Pennsylvania smartweed	8
Prickly sida	8
Sicklepod	8
Smooth, redroot pigweed	8
Spurred anoda	9
Velvetleaf	3

**Control ratings for acetochlor (Warrant®) against common weeds.**

Weed	Activity level
Annual sedge	7
Barnyardgrass	8
Broadleaf Signalgrass	8
Cocklebur	2
Crabgrass	8
Fall panicum	—
Goosegrass	8
Johnsongrass – rhizome	—
Johnsongrass – seedling	8
Nutsedge – purple	5
Palmer, spiny amaranth, waterhemp	8
Pennsylvania smartweed	—
Prickly sida	2
Sicklepod	2
Smooth, redroot pigweed	8
Spurred anoda	—
Velvetleaf	2

**Control ratings for clethodim (Select Max®, etc.) against common weeds.**

Weed	Activity level
Annual sedge	—
Barnyardgrass	9
Broadleaf Signalgrass	9
Cocklebur	—
Crabgrass	9
Fall panicum	8
Goosegrass	9
Johnsongrass – rhizome	9
Johnsongrass – seedling	9
Nutsedge – purple	—
Palmer, spiny amaranth, waterhemp	—
Pennsylvania smartweed	—
Prickly sida	—
Sicklepod	—
Smooth, redroot pigweed	9
Spurred anoda	—
Velvetleaf	—

**Control ratings for dicamba (Banvel® II, etc.) against common weeds.**

Weed	Activity level
Annual sedge	9
Barnyardgrass	1
Broadleaf Signalgrass	1
Cocklebur	9
Crabgrass	1
Fall panicum	1
Goosegrass	1
Johnsongrass – rhizome	—
Johnsongrass – seedling	—
Nutsedge – purple	1
Palmer, spiny amaranth, waterhemp	8
Pennsylvania smartweed	8
Prickly sida	8
Sicklepod	8
Smooth, redroot pigweed	8
Spurred anoda	—
Velvetleaf	—

**Control ratings for dimethenamid-p (Outlook®) against common weeds.**

Weed	Activity level
Annual sedge	7
Barnyardgrass	8
Broadleaf Signalgrass	7
Cocklebur	2
Crabgrass	8
Fall panicum	8
Goosegrass	8
Johnsongrass – rhizome	—
Johnsongrass – seedling	8
Nutsedge – purple	3
Palmer, spiny amaranth, waterhemp	8
Pennsylvania smartweed	—
Prickly sida	2
Sicklepod	2
Smooth, redroot pigweed	8
Spurred anoda	—
Velvetleaf	2

**Control ratings for diuron (Diuron 4L®, etc.) against common weeds.**

Weed	Activity level
Annual sedge	4
Barnyardgrass	5
Broadleaf Signalgrass	5
Cocklebur	4
Crabgrass	6
Fall panicum	5
Goosegrass	5
Johnsongrass – rhizome	2
Johnsongrass – seedling	5
Nutsedge – purple	4
Palmer, spiny amaranth, waterhemp	9
Pennsylvania smartweed	3
Prickly sida	4
Sicklepod	8
Smooth, redroot pigweed	9
Spurred anoda	3
Velvetleaf	3

**Control ratings for fluazifop (Fusilade DX®) against common weeds.**

Weed	Activity level
Annual sedge	—
Barnyardgrass	9
Broadleaf Signalgrass	9
Cocklebur	—
Crabgrass	9
Fall panicum	9
Goosegrass	9
Johnsongrass – rhizome	9
Johnsongrass – seedling	9
Nutsedge – purple	—
Palmer, spiny amaranth, waterhemp	—
Pennsylvania smartweed	—
Prickly sida	—
Sicklepod	—
Smooth, redroot pigweed	—
Spurred anoda	—
Velvetleaf	—

**Control ratings for fluometuron (Cotoran®, etc.) against common weeds.**

Weed	Activity level
Annual sedge	—
Barnyardgrass	6
Broadleaf Signalgrass	6
Cocklebur	5
Crabgrass	6
Fall panicum	6
Goosegrass	6
Johnsongrass – rhizome	—
Johnsongrass – seedling	6
Nutsedge – purple	1
Palmer, spiny amaranth, waterhemp	6
Pennsylvania smartweed	—
Prickly sida	5
Sicklepod	—
Smooth, redroot pigweed	6
Spurred anoda	—
Velvetleaf	—

**Control ratings for fluridone (Brake®, etc.) against common weeds.**

Weed	Activity level
Annual sedge	9
Barnyardgrass	—
Broadleaf Signalgrass	9
Cocklebur	8
Crabgrass	9
Fall panicum	9
Goosegrass	9
Johnsongrass – rhizome	2
Johnsongrass – seedling	9
Nutsedge – purple	—
Palmer, spiny amaranth, waterhemp	9
Pennsylvania smartweed	7
Prickly sida	9
Sicklepod	6
Smooth, redroot pigweed	9
Spurred anoda	7
Velvetleaf	6

**Control ratings for glufosinate (Liberty®, etc.) against common weeds.**

Weed	Activity level
Annual sedge	—
Barnyardgrass	8
Broadleaf Signalgrass	8
Cocklebur	8
Crabgrass	8
Fall panicum	—
Goosegrass	5
Johnsongrass – rhizome	2
Johnsongrass – seedling	8
Nutsedge – purple	4
Palmer, spiny amaranth, waterhemp	8
Pennsylvania smartweed	8
Prickly sida	7
Sicklepod	8
Smooth, redroot pigweed	8
Spurred anoda	9
Velvetleaf	7

**Control ratings for pendimethalin (Prowl® H2O) against common weeds.**

Weed	Activity level
Annual sedge	—
Barnyardgrass	9
Broadleaf Signalgrass	9
Cocklebur	—
Crabgrass	9
Fall panicum	9
Goosegrass	9
Johnsongrass – rhizome	5
Johnsongrass – seedling	9
Nutsedge – purple	—
Palmer, spiny amaranth, waterhemp	7
Pennsylvania smartweed	2
Prickly sida	—
Sicklepod	1
Smooth, redroot pigweed	8
Spurred anoda	—
Velvetleaf	—

**Control ratings for pyriithiobac (Staple® LX) against common weeds.**

Weed	Activity level
Annual sedge	—
Barnyardgrass	—
Broadleaf Signalgrass	—
Cocklebur	7
Crabgrass	—
Fall panicum	—
Goosegrass	—
Johnsongrass – rhizome	3
Johnsongrass – seedling	6
Nutsedge – purple	5
Palmer, spiny amaranth, waterhemp	6
Pennsylvania smartweed	9
Prickly sida	7
Sicklepod	5
Smooth, redroot pigweed	7
Spurred anoda	9
Velvetleaf	9

**Control ratings for sethoxydim (Poast®, etc.) against common weeds.**

Weed	Activity level
Annual sedge	—
Barnyardgrass	8
Broadleaf Signalgrass	9
Cocklebur	—
Crabgrass	9
Fall panicum	9
Goosegrass	9
Johnsongrass – rhizome	9
Johnsongrass – seedling	7
Nutsedge – purple	—
Palmer, spiny amaranth, waterhemp	—
Pennsylvania smartweed	—
Prickly sida	—
Sicklepod	—
Smooth, redroot pigweed	—
Spurred anoda	—
Velvetleaf	—

**Control ratings for S-metolachlor / metolachlor (Dual®, etc.) against common weeds.**

Weed	Activity level
Annual sedge	7
Barnyardgrass	8
Broadleaf Signalgrass	8
Cocklebur	2
Crabgrass	8
Fall panicum	—
Goosegrass	8
Johnsongrass – rhizome	—
Johnsongrass – seedling	8
Nutsedge – purple	5
Palmer, spiny amaranth, waterhemp	8
Pennsylvania smartweed	—
Prickly sida	2
Sicklepod	2
Smooth, redroot pigweed	9
Spurred anoda	—
Velvetleaf	—

**Control ratings for trifloxysulfuron (Envoke®) against common weeds.**

Weed	Activity level
Annual sedge	9
Barnyardgrass	2
Broadleaf Signalgrass	2
Cocklebur	9
Crabgrass	2
Fall panicum	—
Goosegrass	2
Johnsongrass – rhizome	5
Johnsongrass – seedling	7
Nutsedge – purple	9
Palmer, spiny amaranth, waterhemp	7
Pennsylvania smartweed	—
Prickly sida	2
Sicklepod	9
Smooth, redroot pigweed	8
Spurred anoda	—
Velvetleaf	9

**Control ratings for quizalofop (Assure® II, etc.) against common weeds.**

Weed	Activity level
Annual sedge	—
Barnyardgrass	9
Broadleaf Signalgrass	9
Cocklebur	—
Crabgrass	9
Fall panicum	9
Goosegrass	8
Johnsongrass – rhizome	9
Johnsongrass – seedling	9
Nutsedge – purple	5
Palmer, spiny amaranth, waterhemp	8
Pennsylvania smartweed	—
Prickly sida	2
Sicklepod	2
Smooth, redroot pigweed	8
Spurred anoda	—
Velvetleaf	2

## Conclusion

Effective alternatives to glyphosate for weed control in cotton are available. For broadleaf weed control, growers may want to consider an XtendFlex® or Enlist™ trait package where the use of dicamba or 2,4-D may be utilized for postemergence weed control. For grass control, clethodim or fluazifop (Fusilade®) application will be more effective than pyriithiobac. This information can be useful for alternative strategies for managing weeds in cotton when dealing with herbicide-resistant populations and global supply challenges. The information presented is only a guide and is for educational purposes. References to commercial products or trade names are made with the understanding that no endorsement is implied and that no discrimination against other products or suppliers is intended. Always refer to the label for additional information.

For more information regarding alternative strategies for weed control, visit [http://extension.msstate.edu/sites/default/files/publications/publications/P1532\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P1532_web.pdf)

## References

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