

## Weed Management in Sorghum - 2008<sup>1</sup>

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Sorghum has the ability to tolerate short-term drought and a late summer sorghum crop may follow an early-season corn crop. Weed control in sorghum is essential if high yields and efficient harvest are to be achieved; however, good weed control in sorghum is often difficult to achieve.

Sorghum is a small seeded grass and is relatively slow growing in the first few weeks after emergence. In addition, sorghum will not tolerate many of the herbicides which can be effectively used on corn. The slow seedling growth combined with the limited number of herbicides and low rates which must be used, creates a problem in sorghum weed control. Another problem is that many of the herbicides normally used on sorghum either cannot be used or must be used at low rates due to the coarse texture of many Florida soils.

For these reasons it is essential that practices such as choice of hybrid, soil fertility, soil pH, moisture, and row spacing be optimized in an effort to give sorghum the best possible growing conditions to be as competitive as possible with weeds.

The most important consideration is control of grasses during emergence and seedling development of the sorghum. If grasses are not controlled at this stage and are as large as the sorghum, then cultivation will not control the grasses in the drill without killing the sorghum. Sorghum should not be planted in fields that are heavily infested with johnsongrass. If grasses can be controlled until the sorghum gets an initial height differential, cultivation can then be effective. If such a height differential is achieved, post-directed sprays can also be effective. Broadleaf weeds are a less serious problem since several materials can be effectively used for their control.

Table 2 should be used to determine which herbicides are most effective for the weeds anticipated or present in your situation. Then use Table 1 to determine rates and application recommendations. Proper calibration and application are essential since rates too low will result in poor control and rates too high may result in crop injury.

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Table 1. Weed management in sorghum.

| Trade Name and Rate of Commercial Product Per Acre                      | Common Name and Rate of Active Ingredient Per Acre | Remarks  |
|---|--|--|
| <b>PREEMERGENCE</b>   |  |  |
| Dual II Magnum<br>or<br>Dual Magnum<br>1.0 - 1.33 pt                    | S-metolachlor                                      | Use on on seed that has been treated with a chemical safner such as Concep. If seed is not properly treated, severe injury will occur. Good control of many grasses and certain small seeded broadleaf weeds. Apply after planting before weeds and sorghum emerge. It can also be applied with fluid fertilizer. <sup>2</sup>   |
| Stalwart, Parallel,<br>Me-too-lachlor<br>1 to 1.3 pt                    | metolachlor  | See above. Note that metolachlor products will commonly provide less soil residual control that those containing S-metolachlor.  |
| Outlook<br>13 oz  | dimethenamid                                       | Similar to S-metolachlor.  |
| <b>POSTEMERGENCE</b>  |  |  |
| AAtrex or Atrazine <sup>3</sup><br>(several formulations)               | atrazine<br>1 to 2 lb ai/A                         | Apply after sorghum reaches the 3-leaf stage and before broadleaf weeds are 4" tall. For ground applications add emulsifiable oil concentrate at 1 qt/A. Do not apply more than 2 lb per application and do not apply more than 2.5 lb/A/season. Do not graze or feed forage for 21 days following application. <b>A restricted use pesticide.</b>   |
| Aim EC<br>0.5 - 1 oz  | carfentrazone                                      | Can be applied to sorghum from 30 days prior to planting to the 6 leaf collar growth stage. Controls many broadleaf weeds, but good coverage is essential. Addition of non-ionic surfactant (0.25% v/v) is required, but crop oil is not recommended due to increased crop injury. Directed applications are recommended if rates higher than 0.5 oz will be used. Expect moderate leaf burning from over-the-top applications. Do not apply to sweet sorghum. |
| 2,4-D amine <sup>4</sup><br>(several brands)<br>2/3 to 1 pt of 4 lb/gal | 2,4-D  | Broadleaf weeds controlled. Sorghum is not as tolerant to 2,4-D as corn. Broadcast after sorghum is 6-8" tall. If sorghum is 10-15", use drop nozzles to direct spray toward base of plant. Over the top applications are most likely to result in herbicide injury. Do not treat sorghum in boot, tassel, or soft dough stage. Avoid drift.   |
| Banvel, Clarity, Sterling <sup>4</sup><br>0.5 pt                        | dicamba  | Broadleaf weeds controlled. Apply from the 3 leaf stage until plant reaches 8" tall. Plants that are between 8 and 15", apply only as a directed spray. Do not graze or feed treated sorghum, forage, or silage prior to mature grain stage. Avoid drift.  |
| Basagran<br>1.5 - 2.0 pt  | bentazon   | Apply ovetop before weeds exceed 4-6 inches in height. Grain sorghum should be fully emerged. Sorghum is very tolerant to bentazon, but do not apply to sorghum that is heading or blooming. Apply with a crop oil adjuvant at a rate of 1 qt/A.   |

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| Trade Name and Rate of Commercial Product Per Acre  | Common Name and Rate of Active Ingredient Per Acre | Remarks  |
|---|--|--|
| Buctril 2EC<br>1 - 1.5 pt   | bromoxynil   | Apply to sorghum between the 3 leaf stage to 12" height or pre-boot stage to control most broadleaf weeds in 2-4 leaf stage of growth. Use 10 or more gallons of water per acre.   |
| Lorox 4L<br>1 - 2 pt  | linuron  | Apply as a directed spray after sorghum is 12" tall. Use low rate when sorghum is 12 to 15" tall, and a sprayer equipped with skids, shoes or shields. Use the high rate when sorghum is 15" tall and weeds are up to 4" in height. Make only one application per season. Add nonionic surfactant (1pt./25 gals. spray). DO NOT graze or feed plant parts to livestock within 3 months after application.  |
| Gramoxone Inteon<br>1 - 2 pt  | paraquat   | Controls grass and broadleaf. <b>Apply as a directed spray when sorghum is a minimum of 12" tall and weeds are less than 3" tall.</b> Do not spray higher than 3" on sorghum plant. Add nonionic surfactant at 1 qt per 100 gal of spray.  |
| Peak 57DF   | prosulfuron  | Provides postemergence and residual controls of many annual broadleaf weeds. Apply after sorghum reaches 5 inches in height and before 30 inches. Refer to label for specific weed sizes but as a general rule apply before weeds reach greater than 4-6 inches high. The use of a non-ionic surfactant or crop oil is recommended. May be tank-mixed with Banvel, 2,4-D, or atrazine. Do not apply Peak within 15 days to sorghum treated with foliarly applied organophosphate insecticides. Do not graze within 30 days, or harvest silage within 40 days, of application. Do not apply to sweet sorghum. Rotational restrictions include the following: wheat, barley, rye, oats - 0 months; field corn - 1 month; peanuts, tobacco, cotton - 10 months. |
| Sanda<br>2/3 - 1 oz   | halosulfuron                                       | May be applied from the 2 leaf stage through layby (before head emergence) to control nutsedge and other broadleaf weeds. Do not apply more than 1 oz/A/yr. Applications to a stressed crop will increase injury for 7-10 days.  |
| Pendimax, Prowl 3.3 EC<br>1.2 - 1.8 pt)<br><br>or<br><br>Prowl H20<br>1.5 pt<br>(culti-spray) | pendimethalin                                      | For extended control of late-season grasses, cultivate so that brace roots and stems are covered and protected when sorghum is 4" in height or in the 2-leaf stage. Immediately spray with Prowl. If rainfall (0.5") is not received within 7 days after application, incorporate with a sweep-type or rolling cultivator. Can be tank-mixed with atrazine.  |

**Table 1.** Weed management in sorghum.

| Trade Name and Rate of Commercial Product Per Acre | Common Name and Rate of Active Ingredient Per Acre | Remarks  |
|--|--|--|
|  |  | <p><sup>1</sup> Concep III, manufactured by Syngenta Corp., is a seed protectant which is applied to sorghum seed to minimize injury when the herbicides Dual Magnum or Dual II Magnum are used on sorghum for weed control. Screen, manufactured by Monsanto Company, is a seed protectant which is applied to sorghum seed to minimize injury when the herbicides Dual Magnum or Dual II Magnum are used on sorghum for weed control.</p> <p><sup>2</sup> Observations in wheat fields indicate crop damage when 2,4-D is tank mixed with liquid nitrogen. This also may be evident with other herbicide-nitrogen mixtures. To avoid possible damage and obtain better weed control, herbicides and nitrogen should be applied separately.</p> <p><sup>3</sup> <b>WARNING:</b> THE FOLLOWING STATEMENT HAS BEEN ADDED TO THE ATRAZINE LABEL. THIS STATEMENT SHOULD BE HEDED BY ALL PROSPECTIVE USERS AND STEPS SHOULD BE TAKEN TO COMPLY WITH THIS LABEL CHANGE.<br/>           ATRAZINE IS A CHEMICAL WHICH CAN TRAVEL (SEEP OR LEACH) THROUGH SOIL AND CAN CONTAMINATE GROUNDWATER AS A RESULT OF AGRICULTURAL USE. ATRAZINE HAS BEEN FOUND IN GROUND- WATER AS A RESULT OF AGRICULTURAL USE. USERS ARE ADVISED NOT TO APPLY ATRAZINE WHERE THE WATER TABLE (GROUNDWATER) IS CLOSE TO THE SURFACE AND WHERE THE SOILS ARE VERY PERMEABLE, i.e., WELL-DRAINED SOILS SUCH AS LOAMY SANDS. YOUR LOCAL AGRICULTURAL AGENCIES CAN PROVIDE FURTHER INFORMATION ON THE TYPE OF SOIL IN YOUR AREA AND THE LOCATION OF GROUND WATER. IN ADDITION, SOME PRODUCT LABEL STATEMENTS INCLUDE AS A FURTHER QUALIFICATION OF RISKY SOILS, SOILS CONTAINING SINKHOLES OVER LIMESTONE BEDROCK, SEVERELY FRACTURED SURFACES, AND SUBSTRATES WHICH WOULD ALLOW DIRECT INTRODUCTION INTO AN AQUIFER.</p> <p><sup>4</sup> See fact sheet SS-AGR-12 <i>Florida Organo-Auxin Herbicide Rule</i> for state rules pertaining to application of organo-auxin herbicides in Florida.</p> <p>Herbicide recommendations in this report are contingent upon their registration by the Environmental Protection Agency. If a registration is canceled, the herbicide would no longer be recommended.</p> |

Table 2. Estimated Effectiveness of Herbicides on Common Weeds in Florida Sorghum.<sup>1</sup>

| WEEDS                    | Herbicide           |          |                   |                    |                 |                 |        |     |      |         |
|--------------------------|---------------------|----------|-------------------|--------------------|-----------------|-----------------|--------|-----|------|---------|
|                          | Dual or Outlook     | Basagran | Pendimax or Prowl | AAtrex or Atrazine | Banvel or 2,4-D | Gramoxone Extra | Sandea | Aim | Peak | Buctril |
| Time of Application      | POT/<br>culti-spray | POT      | PRE               | POT                | POT/PDS         | PDS             | POT    | POT | POT  | POT     |
| <b>BROADLEAF</b>         |                     |          |                   |                    |                 |                 |        |     |      |         |
| Bristly starbur          | P                   | G        | P                 | E                  | G               | G-E             | G      | -   | -    | F       |
| Cocklebur                | P                   | E        | P                 | E                  | E               | E               | E      | F   | G    | E       |
| Florida beggarweed       | F-G                 | F        | F-G               | G                  | G               | G-E             | P      | -   | -    | F       |
| Florida pusley           | G-E                 | G        | G-E               | E                  | G               | G               | -      | -   | -    | G       |
| Morningglories           | P                   | P        | P                 | E                  | E               | G               | P      | G   | F    | G       |
| Pigweed                  | E                   | P        | E                 | E                  | E               | G-E             | G      | F   | G-E  | F       |
| Ragweed                  | F                   | F        | F                 | E                  | E               | G-E             | G      | F   | G    | F       |
| Sicklepod                | P                   | P        | P                 | E                  | E               | G-E             | P      | P   | F-G  | P       |
| <b>GRASS</b>             |                     |          |                   |                    |                 |                 |        |     |      |         |
| Crabgrass                | E                   | P        | E                 | G                  | P               | E               | P      | P   | P    | P       |
| Goosegrass               | E                   | P        | E                 | G                  | P               | E               | P      | P   | P    | P       |
| Johnsongrass (from seed) | F                   | P        | F                 | G                  | P               | E               | P      | P   | P    | P       |
| Sandbur                  | G                   | P        | G                 | G                  | P               | E               | P      | P   | P    | P       |
| Texas panicum            | P                   | P        | P                 | F-G                | P               | E               | P      | P   | P    | P       |
| <b>SEDGE</b>             |                     |          |                   |                    |                 |                 |        |     |      |         |
| Purple Nutsedge          | P                   | P        | P                 | P                  | P               | F-G             | G-E    | P   | P    | P       |
| Yellow Nutsedge          | F                   | G        | F                 | P                  | P               | F-G             | G      | P   | P    | P       |

**Table 2.** Estimated Effectiveness of Herbicides on Common Weeds in Florida Sorghum.<sup>1</sup>

<sup>1</sup> Estimated effectiveness based on herbicide rates recommended in this report. Effectiveness may vary depending on factors such as herbicidesize of weeds, time of application, soil type, and weather conditions.

Time of Application

PRE = Preemergence

POT = Postemergence broadcast

PDS = Directed postemergence

Weed Control Symbols

E = 90-100% control

G = 80-90% control

F = 60-80% control

P = Less than 60% control