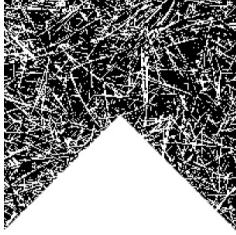


# IPM



## Grain Sorghum

Insect, Disease, and Weed Control  
Recommendations for 2012

### INSECT CONTROL

Insect pests can be a major limiting factor in grain sorghum productions in Alabama. Growers must be prepared to scout and prevent injury from insects in sorghum. The following publication provides information on the biology and management of sorghum pests in Georgia. Please refer to this publication “Sorghum Insects and Their Management” ([http://www.caes.uga.edu/applications/publications/files/pdf/B%201283\\_1.PDF](http://www.caes.uga.edu/applications/publications/files/pdf/B%201283_1.PDF)) by David Buntin, University of Georgia.

For specific insecticides that can be used on grain sorghum, refer to the Grain Sorghum Insect Control section ([http://www.ent.uga.edu/pmh/com\\_Grain\\_Sorghum.pdf](http://www.ent.uga.edu/pmh/com_Grain_Sorghum.pdf)) of the University of Georgia **Pest Management Handbook** (<http://www.ent.uga.edu/pmh>). Additional information on forage sorghum, millets, and sudangrass can be found in the Temporary Summer Grazing Insect Control section ([http://www.ent.uga.edu/pmh/Com\\_Temp\\_Grazing.pdf](http://www.ent.uga.edu/pmh/Com_Temp_Grazing.pdf)) of the University of Georgia Pest Management Handbook (<http://www.ent.uga.edu/pmh>).

## DISEASE CONTROL

Diseases may have a significant impact on the yield and grain quality of sorghum. While the risk of yield loss is greatest with the leaf blight and stalk (peduncle) rot phases of anthracnose, other diseases that can impact sorghum yield include Fusarium stalk rot and gray leaf spot. Forage sorghum varieties are particularly susceptible to anthracnose. Anthracnose, rough leaf spot, and zonate leaf spot are common and sometimes damaging diseases on sweet sorghum. Other than

frequent showers, factors that influence crop susceptibility to diseases include sorghum cropping frequency, tillage practices, and variety selection. During periods of extended drought stress, charcoal rot may reduce the yield and increase lodging in grain sorghum.

For a brief description of the diseases commonly found on sorghum in Alabama, see <http://www.aces.edu/dept/grain/sorghumDIS.php>.

**Table 1. Grain Sorghum Disease Control**

| Chemical Name                            | Rate per 1,000 Row Ft. | Comments   |
|--|------------------------|--|
| <b>Seed Rot and Seedling Disease</b>     |                        |  |
| azoxystrobin<br>QUADRIS FLOWABLE         | 0.4-0.8 fl.oz.         | <b>At-Plant In-furrow Spray for control of Rhizoctonia and Pythium seedling blight:</b> Apply in 3 to 7 gallons of water at planting and direct spray into the seed furrow before seed is covered. Use higher rate when conditions favor disease. May help suppress charcoal rot.  |
| <b>Leaf Spots and Blights</b>            |                        |  |
| azoxystrobin<br>QUADRIS FLOWABLE         | 6.0-15.5 fl.oz.        | <b>For control of anthracnose, charcoal rot, gray leaf spot on forage and grain sorghum.</b> Begin applications prior to disease development and repeat 14 to 21 days later as needed. Use higher rate when conditions are favorable for disease on susceptible host. Make no more than two <b>consecutive</b> applications of Quadris Flowable or other Group 11 fungicide (Qol). See label for additional information concerning resistance management with Qol fungicides. See label for additional instructions. |
| azoxystrobin +<br>propiconazole<br>QUILT | 14 fl.oz.              | <b>For control of anthracnose and gray leaf spot on forage and grain sorghum.</b> For anthracnose and gray leaf spot control, apply prior to disease development and repeat as needed. Make no more than two <b>consecutive</b> applications of Quilt or other Group 11 fungicide (Qol). See label for additional information concerning resistance management with Qol fungicides. See label for additional instructions.   |
| QUILT XCEL                               | 10.5-14 fl.oz.         | <b>For control of anthracnose, ergot, gray leaf spot, Northern corn leaf blight, ladder spot, and zonate leaf spot on sorghum.</b> Apply at first sign of disease and repeat after 14 days as needed. DO NOT apply more than 56 fluid ounces per acre of Quilt Xcel.   |
| pyraclostrobin<br>HEADLINE SC            | 6-12 fl.oz.            | <b>For control of anthracnose, gray leaf spot, Northern corn leaf blight, Southern leaf spot, and rust on sorghum.</b> Apply prior to disease development. DO NOT apply more than 12 fluid ounces per acre or make more than one application of Headline SC per year. See label for additional information concerning resistance management with Qol fungicides.   |

## WEED CONTROL

**Table 2. Grain Sorghum Weed Control**

| Herbicide Trade Name<br>(Rate/Acre Broadcast)                    | Herbicide Common<br>Name<br>(Active Herbicide/Acre) | Comments  |
|--|---|---|
| <b>Preemergence</b>  |   |   |
| DUAL II MAGNUM<br>CINCH 7.64EC<br>(1-1.67 pt.)                   | metolachlor<br>(0.96-1.6 lb.)                       | Apply preplant incorporated or preemergence. Grain sorghum seed should have been treated with Concep to prevent injury. If sorghum seed have not been properly treated, Dual will severely injure the crop. Several commercial companies have treated seed for sale in Alabama. Dual will provide effective control of many annual grasses and small-seeded broadleaf weeds.<br>*MOA–Mitosis inhibitor  |
| INTRRO 4EC<br>MICRO-TECH<br>(1.5-2.5 qt.)<br>[4 lb./gal.]        | alachlor<br>(1.5-2.5 lb.)                           | Apply preemergence. Grain sorghum seed should have been treated Concep seed safener. If sorghum seed have not been properly treated,alachlor will severely injure the crop. Several commercial companies have treated seed for sale in Alabama. Alachlor will provide effective control of many annual grasses and small-seeded broadleaf weeds such as pigweed. Use low rate for coarse- and medium-textured soils. See label for use rate on fine-textured soils. Alachlor is a <b>RESTRICTED USE</b> pesticide.<br>MOA–Mitosis inhibitor |
| OUTLOOK<br>(12-21 fl.oz.)<br>[6 lb./gal.]                        | dimethenamid<br>(0.56-0.98 lb.)                     | Apply preemergence. Grain sorghum seed should have been treated with Concep seed safener. Use lower rates on coarse-textured soils and higher rates on medium- to fine-textured soils. Rate is also influenced by soil organic matter content. Under high soil moisture or cool conditions, application may cause temporary stunting or leaf wrapping of sorghum. MOA–Mitosis inhibitor   |
| <b>Postemergence</b>   |   |   |
| 2,4-D AMINE<br>(0.5-1 pt.)<br>[3.8 lb./gal.]                     | 2,4-D<br>(0.24-0.48 lb.)                            | May be applied broadcast over-the-top when weeds are small and when crop plants are 6 to 8 inches tall. Use drop nozzles to direct spray as soon as possible to keep spray out of whorls. <b>DO NOT</b> spray over-the-top when crop plants are over 8 inches tall. If sorghum is 8 to 15 inches tall, apply as directed spray. <b>DO NOT</b> apply when sorghum is in bloom or early-dough stage. <b>DO NOT</b> apply with adjuvants. MOA–Synthetic auxin  |
| AATREX/ATRAZINE 4L<br>(4 pt.)<br>or<br>AATREX 90WDG<br>(2.2 lb.) | atrazine<br>(2 lb.)                                 | Apply after sorghum completely emerges and weeds are no taller than 1.5 inches. Controls most annual broadleaf weeds and grasses. <b>DO NOT</b> use on coarse-textured soils. <b>DO NOT</b> use on any soil with less than 1-percent organic matter. <b>DO NOT</b> apply with liquid fertilizers or nitrogen solutions. Atrazine is a <b>RESTRICTED USE</b> pesticide.<br>MOA–Photosystem II inhibitor  |

\*MOA=Mechanism of action. Herbicides with different MOAs should be used in weed resistance management. See Table 4.

| Herbicide Trade Name<br>(Rate/Acre Broadcast)  | Herbicide Common<br>Name<br>(Active Herbicide/Acre)  | Comments  |
|--|--|---|
| Postemergence (cont.)  |  |   |
| AATREX/ATRAZINE 4L<br>(2.4 pt.)<br>or<br>AATREX 90WDG<br>(1.3 lb.)<br>+<br>Crop Oil Concentrate<br>(1 qt.) | atrazine<br>(1.2 lb.)<br><br>+<br>crop oil concentrate                                       | Controls broadleaf weeds 2 to 4 inches tall and newly emerged annual grasses (one-leaf). To control broadleaf weeds less than 4 inches tall, apply as an over-the-top spray to sorghum that is at least in the three-leaf stage but before reaching 12 inches in height. <b>DO NOT</b> use oil if sorghum is in a stressed condition of any kind. <b>DO NOT</b> apply with liquid fertilizers or nitrogen solutions. Atrazine is a <b>RESTRICTED USE</b> pesticide.<br>MOA–Photosystem II inhibitor |
| AIM 2EC<br>(0.5-1 fl.oz.)<br>+<br>Non-ionic surfactant   | carfentrazone<br>(0.008-0.016 lb.)<br>+<br>non-ionic surfactant                              | May be applied postemergence to grain or forage sorghum after emergence to the six-leaf-collar growth stage. Directed application is recommended if rate higher than 0.5 fluid ounces per acre will be used. Addition of a non-ionic surfactant (1 quart per 100 gallons of spray mix) is required. Crop oil should not be used. Expect moderate leaf burning from low rate, over-the-top application.<br>MOA–PPO inhibitor   |
| BANVEL 4<br>CLARITY<br>(0.5 pt.)<br>[4 lb./gal.]   | dicamba<br>(0.25 lb.)  | Banvel/Clarity may be applied over-the-top of sorghum from the three-leaf stage until sorghum is 8 inches tall. If sorghum is 8 to 15 inches tall, herbicide should be applied as a directed spray. An application made later than 25 days after emergence and up through flowering will reduce yield. Make <b>ONLY</b> one application per season. <b>DO NOT</b> apply to sorghum grown for seed production.<br>MOA–Synthetic auxin  |
| BASAGRAN 4<br>(1.5-2 pt.)  | bentazon<br>(0.75-1 lb.)   | Apply early postemergence when sorghum has one to five leaves to control certain broadleaf weeds. Sorghum is tolerant to Basagran up to the early boot stage. Weeds generally should be small and actively growing at time of treatment. <b>DO NOT</b> apply more than 2 pints of Basagran per acre per year on sorghum. Add a crop oil concentrate (2 pints per acre) according to label directions for specific weeds. MOA–Photosystem II inhibitor   |
| PEAK 57WDG<br>(0.75-1 oz.)<br>+<br>Non-ionic Surfactant<br>or<br>Crop Oil Concentrate                      | pro sulfuron<br>(0.027-0.036 lb.)<br>+<br>non-ionic surfactant<br>or<br>crop oil concentrate | Controls many annual broadleaf weeds. Apply over-the-top of grain sorghum when it is between 5 and 20 inches tall. Apply as a directed spray when crop is 20 to 30 inches tall. Add a non-ionic surfactant at a rate of 2 quarts per 100 gallons of spray mix or a crop oil concentrate at a rate of 1 quart per acre. Rate to use depends on the weed problem and size at treatment. <b>DO NOT</b> use on forage sorghum. See label for recropping restrictions.<br>MOA–ALS inhibitor              |

| Herbicide Trade Name<br>(Rate/Acre Broadcast)  | Herbicide Common<br>Name<br>(Active Herbicide/Acre)           | Comments  |
|--|---|---|
| <b>Postemergence (cont.)</b>   |   |   |
| PROWL 3.3EC<br>(1.8-3.6 pt.)<br>or<br>PROWL H <sub>2</sub> O<br>(1.5-3 pt.)<br>[3.8 lb./gal.)      | pendimethalin<br>(0.74-1.5 lb.)<br><br>(0.71-1.42 lb.)        | Cultivate with sweep or rolling cultivators to throw at least 1 inch of soil over the base of the sorghum plants prior to application. Apply as a <b>directed spray</b> after grain sorghum is 6 inches tall. Must be incorporated using cultivators or irrigation water. Set cultivators to provide maximum soil mixing, and move treated soil into the crop rows. Effective on late-emerging problem grasses such as fall panicum and Texas panicum. See label for specific instructions. MOA–Mitosis inhibitor |
| SANDEA 75DF<br>(0.67-1 oz.)<br>+<br>Non-ionic Surfactant   | halosulfuron<br>(0.03-0.047 lb.)<br>+<br>non-ionic surfactant | Controls many annual broadleaf weeds and suppresses nutsedge. Apply when weeds are small after the two-leaf stage of sorghum growth but before grain head emergence. Add a non-ionic surfactant at the rate of 2 quarts of surfactant per 100 gallons of spray mix. Use rate depends on the weed problem and size at treatment. <b>DO NOT</b> apply more than 1 ounce of Sandea per acre per year. MOA–ALS inhibitor  |
| <b>Postemergence (Post Directed)</b>   |   |   |
| GRAMOXONE INTEON 2<br>(16 fl.oz.)<br>or<br>FIRESTORM 3<br>(11 fl.oz.)<br>+<br>Non-ionic Surfactant | paraquat<br>(0.25 lb.)<br><br>+<br>non-ionic surfactant       | For use as a <b>POSTEMERGENCE DIRECTED SPRAY</b> when sorghum is at least 15 inches tall. Spray no higher than the lower 3 inches of the sorghum stalk. Paraquat will control many broadleaf weeds and grasses less than 3 inches tall. Add a non-ionic surfactant at the rate of 1 quart per 100 gallons of spray mixture. <b>DO NOT</b> spray on windy days. <b>DO NOT</b> breathe spray mist. Gramoxone and Firestorm are <b>RESTRICTED USE</b> pesticides. MOA–Photosystem I inhibitor                        |
| LOROX 50DF<br>(1-2 lb.)<br>+<br>Non-ionic Surfactant   | linuron<br>(0.5-1 lb.)<br>+<br>non-ionic surfactant           | For use as a <b>POSTEMERGENCE DIRECTED SPRAY</b> when grain sorghum is at least 15 inches tall and weeds are 2 to 4 inches tall. Spray no higher than the lower 3 inches of the sorghum stalk. Add non-ionic surfactant at the rate of 2 quarts per 100 gallons of spray mixture. <b>DO NOT</b> graze or feed treated plants to livestock within 3 months of application. MOA–Photosystem II inhibitor  |

| Herbicide Trade Name<br>(Rate/Acre Broadcast)  | Herbicide Common<br>Name<br>(Active Herbicide/Acre)          | Comments  |
|--|--|---|
| <b>Harvest Aid</b>   |  |   |
| AIM 2EC<br>(1 fl.oz.)  | carfentrazone<br>(0.016 lb.)                                 | For the preharvest desiccation of weeds such as pigweed and morningglory. Apply at least three days before harvest. Use with a crop oil concentrate (1 gallon per 100 gallons spray mix) or a non-ionic surfactant (2 pints per 100 gallons spray mix). Use sufficient spray volume for adequate coverage. Coverage is essential for satisfactory performance. Can be tank mixed with glyphosate to improve spectrum of weed control. MOA–PPO inhibitor |
| SODIUM CHLORATE<br>(3 lb./gal.)<br>(2 gal.)<br>or<br>SODIUM CHLORATE<br>(6 lb./gal.)<br>(1 gal.) | sodium chlorate<br>(6 lb.)<br><br>sodium chlorate<br>(6 lb.) | Apply from 7 to 10 days before harvest. Apply in 15 to 20 gallons of water with ground equipment or 5 to 10 gallons of water by air. Apply on a bright, sunny day when temperature is above 85°F and relative humidity is below 65 percent. Grasses will be desiccated, but broadleaf weeds may only be defoliated (little desiccation).<br>MOA–N/A   |
| ROUNDUP<br>WEATHERMAX<br>POWERMAX<br>(22-44 fl.oz.)<br>[5.5 lb./gal.]                            | glyphosate<br>(0.94-1.9 lb.)                                 | Apply when grain sorghum is less than 30 percent moisture. Allow a minimum of 7 days between application and harvest. <b>DO NOT</b> use on grain sorghum grown for seed production. Not all glyphosate formulations may be labeled for this use. Refer to specific product label for rate and the need for addition of non-ionic surfactant.<br>MOA–ESP synthesis inhibitor   |

Rate of herbicides are given for broadcast application. Band application reduces the amount needed per acre of crop and can be determined by the formula:

$$\frac{\text{Band Width}}{\text{Row Width}} \times \text{Broadcast Rate} = \text{Band Rate.}$$

For example, the amount of AATrex 4L needed for a broadcast application to a light sandy soil is 2 quarts. The amount needed to treat a 20-inch band on a 40-inch row would be:

$$\frac{20}{40} \times 2 \text{ qt.} = 1 \text{ qt.}$$

**Table 3. Estimated Effectiveness of Herbicides Recommended for Grain Sorghum on Common Weeds in Alabama <sup>1</sup>**

| WEEDS                    | HERBICIDES       |                        |               |                    |                        |                       |
|--------------------------|------------------|------------------------|---------------|--------------------|------------------------|-----------------------|
|                          | Cinch Dual (PRE) | Micro-Tech Intro (PRE) | Outlook (PRE) | 2,4-D amine (POST) | AAtrex/Atrazine (POST) | Banvel Clarity (POST) |
| <b>GRASSES</b>           |                  |                        |               |                    |                        |                       |
| Broadleaf Signalgrass    | 8                | 8                      | 7-8           | 0                  | 2                      | 0                     |
| Crabgrass                | 9                | 9                      | 9             | 0                  | 7                      | 0                     |
| Crowfootgrass            | 9                | 9                      | 9             | 0                  | 6                      | 0                     |
| Fall Panicum             | 8                | 8                      | 8             | 0                  | 4                      | 0                     |
| Goosegrass               | 9                | 9                      | 9             | 0                  | 5                      | 0                     |
| Johnsongrass (rhizomes)  | 0                | 0                      | 0             | 0                  | 0                      | 0                     |
| Johnsongrass (seedlings) | 5                | 5                      | 7             | 0                  | 2                      | 0                     |
| Texas Panicum            | 4                | 4                      | 4             | 0                  | 0                      | 0                     |
| <b>SEDGES</b>            |                  |                        |               |                    |                        |                       |
| Purple Nutsedge          | 1                | 1                      | 0             | 0                  | 0                      | 0                     |
| Yellow Nutsedge          | 7                | 5                      | 7             | 0                  | 0                      | 0                     |
| <b>BROADLEAF WEEDS</b>   |                  |                        |               |                    |                        |                       |
| Bristly Starbur          | 0                | 0                      | 0             | 7                  | 9                      | 8                     |
| Cocklebur                | 0                | 0                      | 0             | 9                  | 9                      | 9                     |
| Florida Beggarweed       | 6                | 6                      | 6-7           | 7                  | 8                      | 8                     |
| Florida Pusley           | 9                | 9                      | 9             | 8                  | 8                      | 7                     |
| Morningglory             | 0                | 0                      | 0             | 9                  | 8                      | 9                     |
| Pigweed                  | 8                | 9                      | 9             | 9                  | 8                      | 9                     |
| Prickly Sida             | 6                | 6                      | 6             | 7                  | 8                      | 8                     |
| Sicklepod                | 5                | 7                      | 5             | 8                  | 8                      | 9                     |

**continued**

<sup>1</sup> Effectiveness ratings are based on observations of research plots and field use under average weather conditions for several years by weed control workers in Alabama.

**KEY TO CONTROL RATINGS AND ABBREVIATIONS**

Ratings on a scale of 0 to 10: 0 = No control; 10 = 100% control.

PRE = Preemergence; POST = Postemergence.

**Table 3. Estimated Effectiveness of Herbicides Recommended for Grain Sorghum on Common Weeds in Alabama <sup>1</sup> (cont.)**

| WEEDS                    | HERBICIDES         |                |                  |                   |                                  |                |
|--------------------------|--------------------|----------------|------------------|-------------------|----------------------------------|----------------|
|                          | Basagran<br>(POST) | Peak<br>(POST) | Sandea<br>(POST) | Aim<br>(POST,PDS) | Gramoxone/<br>Firestorm<br>(PDS) | Lorox<br>(PDS) |
| <b>GRASSES</b>           |                    |                |                  |                   |                                  |                |
| Broadleaf Signalgrass    | 0                  | 0              | 0                | 0                 | 8                                | 7              |
| Crabgrass                | 0                  | 0              | 0                | 0                 | 8                                | 8              |
| Crowfootgrass            | 0                  | 0              | 0                | 0                 | 8                                | 8              |
| Fall Panicum             | 0                  | 0              | 0                | 0                 | 8                                | 8              |
| Goosegrass               | 0                  | 0              | 0                | 0                 | 8                                | 8              |
| Johnsongrass (rhizomes)  | 0                  | 0              | 0                | 0                 | 3                                | 4              |
| Johnsongrass (seedlings) | 0                  | 0              | 0                | 0                 | 8                                | 7              |
| Texas Panicum            | 0                  | 0              | 0                | 0                 | 8                                | 7              |
| <b>SEDGES</b>            |                    |                |                  |                   |                                  |                |
| Purple Nutsedge          | 0                  | 0              | 7-8              | 0                 | 4                                | 4              |
| Yellow Nutsedge          | 7                  | 0              | 7-8              | 0                 | 4                                | 4              |
| <b>BROADLEAF WEEDS</b>   |                    |                |                  |                   |                                  |                |
| Bristly Starbur          | 9                  | 0              | 8                | --                | 6                                | 8              |
| Cocklebur                | 9-10               | 8-9            | 8                | 7                 | 6                                | 9              |
| Florida Beggarweed       | 0                  | 4              | 4                | --                | 8-9                              | 8              |
| Florida Pusley           | 0                  | 8              | 0                | --                | 5                                | 8              |
| Morningglory             | 4                  | 7              | 6                | 8                 | 6-8                              | 8              |
| Pigweed                  | 4                  | 8              | 7-8              | 7-8               | 8                                | 9              |
| Prickly Sida             | 7                  | 3              | 6                | --                | 6                                | 8              |
| Sicklepod                | 0                  | 2              | 4                | 0                 | 8-9                              | 8              |

<sup>1</sup> Effectiveness ratings are based on observations of research plots and field use under average weather conditions for several years by weed control workers in Alabama.

KEY TO CONTROL RATINGS AND ABBREVIATIONS Ratings on a scale of 0 to 10: 0 = No control; 10 = 100% control.

POST = Postemergence; PDS = Postemergence Directed Spray; -- = Information not available

**Table 4. Herbicide Classification by Mechanism of Action**

| Mechanism of Action      | Herbicides                                       |
|--------------------------|--|
| ALS inhibitor            | Peak, Sandea                                     |
| ESP synthesis inhibitor  | Roundup  |
| Mitosis inhibitor        | Dual, Intrro/Micro-Tech, Prowl/Pendimax, Outlook |
| Photosystem I inhibitor  | Gramoxone Inteon/Firestorm                       |
| Photosystem II inhibitor | Atrazine, Basagran, Lorox                        |
| PPO inhibitor            | Aim  |
| Synthetic auxin          | 2,4-D, Banvel/Clarity                            |

## GRAIN SORGHUM MANAGEMENT CHECKLIST

The grain sorghum producers who get maximum returns from their investments pay special attention to certain key management practices. This grain sorghum checklist will improve your sorghum management system. If you cannot mark off each of these points for your own farm, you may be missing out on potential income.

- Soil test for fertility and follow recommendations.** Sample each field in the fall for fertility and lime needs. Liming soils to a pH above 6.0 helps produce healthy, uniform crop stands and high yields. Apply phosphorus and potassium according to recommendations. Generally, apply about 80 pounds of nitrogen per acre either at planting or as a split application with the second application applied before sorghum is 8 inches tall.
- Use a preemergence herbicide to control grass weeds.** In fields with a history of grass weed problems, use a preemergence herbicide at the labeled rate for the soil type. This is the best opportunity to control grass weeds in this crop. You must use seed treated with herbicide "safeners" in areas where a preemergence herbicide is applied.
- Plant early when soil temperature is correct for optimum yields.** Planting as early as possible usually gives best yields. As a general rule, plant grain sorghum as soon as the soil temperature at 2 inches warms to 65°F. Early planting usually allows for better growing conditions and good moisture, and the crop usually escapes most insect pressure and can be harvested sooner.
- Plant adapted varieties.** Plant varieties that have characteristics for suitable growth and development in southern environments. Important factors to consider when selecting a hybrid are: yielding ability; susceptibility to lodging; maturity; head exertion; head compactness; and damage from birds, insects, and diseases.
- Avoid high-density stands.** Many problems are associated with excessive plant populations, such as increased disease problems, reduced drought tolerance, and lower yields. A plant population of approximately 60,000 to 80,000 plants per acre is most desirable. This will usually require about 5 pounds of seed per acre, but the weight of seed planted is not a good measure of plant population because seed size varies considerably with various hybrids. Carefully calibrate your planter to deliver the correct number of seeds per foot of row. For 30-inch rows, four to six seeds per foot of row will be adequate.
- Use residual postemergence herbicides to control problem broadleaf weeds.** Apply postemergence residual herbicides over-the-top of grain sorghum when it is at least 3 inches tall and weeds are small. Weeds such as sicklepod, cocklebur, and morningglory can be controlled by the timely application of a herbicide such as atrazine. Follow label directions for the proper use rate based on soil type.
- Use post-directed herbicide if needed.** The herbicides available for post-directed spray application are more effective on a wide range of weeds and are relatively inexpensive. Grain sorghum must be at least 12 inches tall at time of treatment, and only the lower 3 inches of the sorghum stem should be contacted by the spray. Directed sprays can give good burndown of small weeds and some grasses.
- Base insect management decisions on thorough field scouting.** Scout fields and treat only where an economically damaging level of insects has been reached. General guides to economic treatment levels have been established for insects such as sorghum midge, corn earworms, and armyworms. Remember, good scouting is required in order to match the recommended insecticide to damaging insect(s).
- Apply insecticides, herbicides, and fungicides only as labeled and recommended.** Calibrate sprayers and follow recommended methods. Misapplication is costly; it results in waste of expensive chemicals and/or damage to the crop.
- Maintain a field-by-field record or map of weed problems.** In the late summer before harvest, prepare a field record or map of each field. Include a list of weeds present with their general location in the field, and estimate the size or magnitude of the different problem weeds present. Use these maps or records to plan for the next year's weed control program.
- Harvest when crop is ready.** Start harvesting grain sorghum when the heads are mature and seed approach an average of 20- to 22-percent moisture. Drying sorghum seed will be necessary to reach a moisture percentage of 12 to 14 percent. Field drying of grain sorghum often results in significant harvesting losses, crop shattering, and increased disease problems.
- Develop marketing strategies.** Consider contracts or other marketing methods for handling your crop well ahead of harvesttime. Don't get caught by the low cash prices available at harvesttime.

**2012 IPM-0429**

**For more information**, contact your county Extension office. Visit <http://www.aces.edu/counties> or look in your telephone directory under your county's name to find contact information.

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Use pesticides **only** according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label.

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The pesticide rates in this publication are recommended **only** if they are registered with the Environmental Protection Agency or the Alabama Department of Agriculture and Industries. If a registration is changed or canceled, the rate listed here is no longer recommended. Before you apply **any** pesticide, check with your county Extension agent for the latest information.

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Trade names are used **only** to give specific information. The Alabama Cooperative Extension System does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

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