

# Grain Sorghum Hybrids for Grain 2014



## Hybrid Selection

The LSU AgCenter conducts annual grain sorghum hybrid yield tests at several locations across the state. The data in Table 1 shows yields of grain sorghum hybrids from trials conducted during 2013 at six locations. It includes yields at each location along with averages from all locations. This aggregation is compiled to provide grain sorghum producers in Louisiana with unbiased information on hybrid performance for different soil types and conditions.

## Grain Yield

Most producers agree grain yield is the most important characteristic on which to base hybrid selection. Performance of top-yielding hybrids is indicated by footnotes in Table 1. Hybrids are listed in order of performance (average of all sites). Since hybrids do not perform the same in different environments, choose among the hybrids that performed well overall and the ones that performed well at the location that most closely fits your growing conditions.

## Maturity Group

Grain sorghum hybrids were tested during 2013 at research stations near Alexandria, Baton Rouge, Bossier City, Crowley, St. Joseph and Winnisboro. Grain sorghum growth and development are controlled primarily by exposure to accumulated heat units. This means days from planting to maturity may change based on seasonal temperature variations from year to year, from location to location, and may be influenced by date of planting at a given location. By noting the heading date (days from planting to heading) and the harvest moisture in Table 2, you can determine the relative maturity of the hybrid in question. For example, if two hybrids both have heading dates of 61 days, but hybrid A was harvested at 14 percent moisture and hybrid B was harvested at 12 percent moisture, hybrid B probably will mature earlier under normal field conditions.

## Other Agronomic Characteristics

Information on plant height, head type and days to heading is found in Table 2. Plant height is associated

with how well a hybrid can resist lodging, but it is not the only factor involved. Generally, shorter hybrids have greater ability to stand, but there are exceptions. Days to heading, along with harvest moisture, provide a relative measure of maturity among hybrids. There is not a perfect correlation between heading date and maturity date, however.

Head type, or compactness, is an important characteristic in Louisiana grain sorghum production. Normally, more open-headed hybrids will have fewer problems with grain mold, mildew and sprouting as the grain approaches maturity. More open-headed hybrids allow more air movement through the head and thus have a lower moisture level. This is especially important when sorghum is maturing during periods of high rainfall and relative humidity, which occur frequently in Louisiana. In addition, when it is necessary to apply an insecticide to the grain sorghum head, better control often is obtained with the more open-headed hybrids because they allow for greater penetration of the insecticide through the head.

## Fertilization

The soil pH should be at least 5.8 for optimal production of grain sorghum. Nitrogen can be applied before or at planting, or the split application method can be adopted. Nitrogen should be applied between the rates of 100-120 pounds per acre on upland soils. If split applications are made, the second application should be made by the six- to eight-leaf stage of growth. Phosphate and potassium applications should be made before or at planting when recommended by a soil test.



## Planting Rate and Depth

Grain sorghum should be planted at a rate of approximately 75,000 seed per acre. This is the equivalent to five to six seeds per foot of row on 40-inch rows, four to five seeds per foot of row on 30-36 inch rows or three to four seeds per foot of row on 20-inch rows. If rows are 10 inches or narrower, three seeds per foot of row should be adequate. It will be necessary to calibrate the planter to the proper planting rate rather than just planting a certain weight of seed per acre because hybrids can vary greatly in seed size – as much as 4 to 7 pounds of seed per acre. Seed should be placed deep enough to reach soil moisture but no deeper than 2 inches. The best depth typically is  $\frac{3}{4}$  inch to 1  $\frac{1}{2}$  inches deep.

## Planting Date

Plant grain sorghum as early as possible during the recommended planting date range. In south Louisiana, the recommended planting range is between April 1 and May 1. In north Louisiana, the range typically is between April 15 and May 15. Early planting is one of the most important cultural practices a producer can adopt to maximize grain sorghum yields, since yields decrease greatly with later planting dates. In addition, later planted crops normally will be subjected to more severe insect (especially sorghum midge) and disease pressures. When the option is to plant soybeans or grain sorghum after June 15, it usually is better to plant soybeans than grain sorghum.

## Core block trials

Pairing information from the core block trials (Table 3) with the official variety trials can provide growers valuable information on how well the yield data translates between the two trials. This information should be used to supplement but not replace the official variety trial information.

## Acknowledgements

H.J. “Rick” Mascagni, Professor and Coordinator (LSU AgCenter Northeast Research Station)  
 Josh Lofton, Assistant Professor and Specialist (LSU AgCenter Macon Ridge Research Station)  
 Steve Harrison, Professor (LSU AgCenter School of Plant, Environmental and Soil Sciences)  
 Daniel Stephenson, Professor (LSU AgCenter Dean Lee Research Station)  
 Ronnie Levy, Assistant Professor (LSU AgCenter Dean Lee Research Station)  
 Clayton Hollier, Professor, (LSU AgCenter Department of Plant Pathology and Crop Physiology)  
 Dustin Harrell, Assistant Professor (LSU AgCenter Rice Research Station)  
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 Bill Waltman, Research Associate (LSU AgCenter Red River Research Station)  
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Table 1. Yields of grain sorghum hybrids in 2013 at six LSU AgCenter locations.

| Brand/Hybrid     | Alexandria      |          | Crowley  |          | St. Joseph<br>Commerce Silt<br>Loam |        | St. Joseph<br>Sharkey Clay |        | Bossier<br>City | Winnsboro | Average |
|------------------|-----------------|----------|----------|----------|-------------------------------------|--------|----------------------------|--------|-----------------|-----------|---------|
|                  | April 9         | April 29 | March 21 | April 23 | April 18                            | May 14 | April 9                    | May 17 | April 22        | April 17  |         |
|                  | pounds per acre |          |          |          |                                     |        |                            |        |                 |           |         |
| Pioneer 84G62    | 7,884           | 6,102    | 5,660    | 5,954    | 6,593                               | 6,160  | 7,719                      | 6,878  | 7,221           | 6,122     | 6,629   |
| Pioneer 84P80    | 6,978           | 5,960    | 5,310    | 6,132    | 7,357                               | 5,599  | 7,165                      | 5,978  | 7,617           | 6,078     | 6,417   |
| Dekalb DKS51-01  | 6,849           | 6,473    | 6,187    | 5,482    | 6,370                               | .      | 7,257                      | 5,658  | 7,381           | 5,903     | 6,396   |
| REV RV9782       | 6,664           | 5,520    | 6,227    | 6,056    | 6,773                               | 6,264  | 7,045                      | 6,625  | 6,903           | 5,816     | 6,389   |
| Pioneer 83P17    | 6,725           | 6,507    | 6,657    | 5,408    | 6,631                               | .      | 7,179                      | 4,972  | 7,982           | 5,355     | 6,380   |
| REV RV9924       | 6,723           | 6,373    | 5,188    | 6,193    | 6,517                               | 6,107  | 6,936                      | 6,478  | 7,414           | 5,282     | 6,321   |
| Dyna-Gro 765B    | 6,913           | 6,334    | 5,898    | 5,223    | 5,634                               | .      | 7,147                      | 5,812  | 7,931           | 5,705     | 6,289   |
| Dekalb DKS53-67  | 6,428           | 5,572    | 5,736    | 6,226    | 6,806                               | 3,766  | 6,848                      | 7,133  | 6,819           | 6,361     | 6,170   |
| REV RV9562       | 5,627           | 6,134    | 5,141    | 5,647    | 7,197                               | 5,621  | 6,863                      | 6,802  | 7,239           | 4,873     | 6,114   |
| Dyna-Gro M75GB39 | 6,445           | 5,435    | 4,924    | 5,928    | 6,462                               | 6,277  | 6,710                      | 6,712  | 7,049           | 4,871     | 6,081   |
| Dyna-Gro 771B    | 6,059           | 5,948    | 5,564    | 4,989    | 6,478                               | 6,095  | 6,510                      | 5,088  | 7,039           | 6,084     | 5,985   |
| REV RV9883       | 6,504           | 5,631    | 4,938    | 5,889    | 5,634                               | 5,623  | 6,584                      | 6,051  | 7,472           | 5,351     | 5,968   |

Table 1 continued

Table continued

| Brand/Hybrid                                               | Alexandria      |          | Crowley  |          | St. Joseph<br>Commerce Silt<br>Loam |        | St. Joseph<br>Sharkey Clay |        | Bossier<br>City | Winnsboro | Average |
|------------------------------------------------------------|-----------------|----------|----------|----------|-------------------------------------|--------|----------------------------|--------|-----------------|-----------|---------|
|                                                            | April 9         | April 29 | March 21 | April 23 | April 18                            | May 14 | April 9                    | May 17 | April 22        | April 17  |         |
|                                                            | pounds per acre |          |          |          |                                     |        |                            |        |                 |           |         |
| REV RV9823                                                 | 5,913           | 6,179    | 5,418    | 5,608    | 6,290                               | 6,230  | 6,358                      | 5,949  | 7,348           | 4,210     | 5,950   |
| GA 5613                                                    | 6,509           | 5,207    | 4,252    | 5,971    | 6,207                               | 5,221  | 6,384                      | 6,400  | 6,963           | 5,306     | 5,842   |
| SP 7868                                                    | 6,758           | 5,250    | 5,716    | 5,513    | 5,285                               | 4,195  | 6,626                      | 6,267  | 6,973           | 5,337     | 5,792   |
| Dyna-Gro 766B                                              | 6,681           | 5,487    | 4,596    | 5,342    | 6,124                               | 5,067  | 6,330                      | 6,085  | 6,819           | 4,861     | 5,739   |
| REV RV9794                                                 | 6,348           | 6,036    | 4,882    | 5,155    | 6,180                               | 4,172  | 6,696                      | 5,867  | 7,344           | 4,690     | 5,737   |
| X865                                                       | 6,546           | 5,123    | 5,220    | 5,417    | 5,700                               | 4,322  | 6,179                      | 5,942  | 7,532           | 4,750     | 5,673   |
| Dyna-Gro<br>M77GB52                                        | 6,116           | 5,445    | 5,795    | 5,595    | 5,661                               | 4,576  | 6,219                      | 5,387  | 6,345           | 5,476     | 5,662   |
| NK 6638                                                    | 6,138           | 4,466    | 5,719    | 5,834    | 5,564                               | 3,935  | 6,470                      | 5,801  | 6,634           | 5,558     | 5,612   |
| REV RV9973                                                 | 6,006           | 4,497    | 6,623    | 5,598    | 5,672                               | .      | 6,875                      | 5,263  | 6,151           | 3,801     | 5,610   |
| X840                                                       | 6,709           | 5,412    | 5,129    | 4,568    | 4,546                               | .      | 5,858                      | .      | 6,697           | 5,182     | 5,513   |
| REV RV9803                                                 | 5,027           | 4,972    | 4,528    | 5,893    | 5,277                               | 5,177  | 5,741                      | 5,452  | 7,228           | 5,576     | 5,487   |
| NK 8416                                                    | 6,382           | 4,070    | 4,507    | 5,430    | 5,121                               | .      | 5,370                      | .      | 5,791           | 5,022     | 5,212   |
|                                                            |                 |          |          |          |                                     |        |                            |        |                 |           |         |
| Average                                                    | 6,445           | 5,589    | 5,409    | 5,627    | 6,087                               | 5,311  | 6,628                      | 6,027  | 7,079           | 5,319     |         |
| CV, Percentage                                             | 9.2             | 13.8     | 7.9      | 10.8     | 6.8                                 | 13.3   | 5.9                        | 12.8   | 5.6             | 16.6      |         |
| LSD (0.10)                                                 | 701             | 909      | 501      | 714      | 491                                 | 840    | 464                        | 908    | 415             | 927       |         |
| Missing data at St. Joseph was due to severe midge damage. |                 |          |          |          |                                     |        |                            |        |                 |           |         |
| All trials were on dry land.                               |                 |          |          |          |                                     |        |                            |        |                 |           |         |

Table 2. Agronomic data for grain sorghum hybrids in 2013.<sup>1</sup>

|                   | Moisture<br>Percentage            | Test Weight<br>Bushels per acre | Midge <sup>a</sup><br>Percentage | Bird Damage <sup>a</sup><br>Percentage |
|-------------------|-----------------------------------|---------------------------------|----------------------------------|----------------------------------------|
| Pioneer 84G62     | 19.2                              | 59.0                            | 3.3                              | 6.3                                    |
| Pioneer 84P80     | 18.3                              | 59.7                            | 3.3                              | 2.5                                    |
| DEKALB DKS51-01   | 19.4                              | 58.3                            | 1.7                              | 6.3                                    |
| REV®RV9782™       | 16.5                              | 58.5                            | 1.7                              | 5.0                                    |
| Pioneer 83P17     | 16.9                              | 58.2                            | 3.3                              | 10.0                                   |
| REV®RV9924™       | 17.0                              | 59.4                            | 3.3                              | 6.3                                    |
| Dyna-Gro 765B     | 17.8                              | 58.5                            | 3.3                              | 5.0                                    |
| DEKALB DKS53-67   | 16.0                              | 58.9                            | 5.0                              | 5.0                                    |
| REV®RV9562™       | 16.7                              | 59.1                            | 3.3                              | 6.3                                    |
| Dyna-Gro M75GB39  | 17.7                              | 58.8                            | 1.7                              | 5.0                                    |
| Dyna-Gro 771B     | 18.0                              | 58.7                            | 1.7                              | 6.3                                    |
| REV®RV9883™       | 17.1                              | 58.9                            | 1.7                              | 3.8                                    |
| REV®RV9823™       | 20.1                              | 57.5                            | 1.7                              | 6.3                                    |
| Golden Acres 5613 | 18.0                              | 59.4                            | 1.7                              | 5.0                                    |
| SP7868            | 16.8                              | 59.3                            | 1.7                              | 2.5                                    |
| Dyna-Gro 766B     | 15.2                              | 59.9                            | 6.7                              | 8.8                                    |
| REV®RV9794™       | 16.9                              | 58.9                            | 1.7                              | 5.0                                    |
| NKX865            | 18.1                              | 58.2                            | 1.7                              | 2.5                                    |
| Dyna-Gro M77GB52  | 16.0                              | 59.4                            | 1.7                              | 3.8                                    |
| NK6638            | 17.7                              | 58.9                            | 1.7                              | 5.0                                    |
| REV®RV9973™       | 17.2                              | 58.9                            | 3.3                              | 5.0                                    |
| NKX840            | 16.6                              | 58.8                            | 3.3                              | 8.8                                    |
| REV®RV9803™       | 18.7                              | 57.8                            | 1.7                              | 3.8                                    |
| NK8416            | 17.9                              | 59.2                            | 1.7                              | 2.5                                    |
|                   |                                   |                                 |                                  |                                        |
|                   | Second Planting Date <sup>c</sup> |                                 |                                  |                                        |
| Pioneer 84G62     | 21.2                              | 54.0                            | 15.0                             | 5.0                                    |
| Pioneer 84P80     | 20.5                              | 55.8                            | 8.3                              | 3.3                                    |

Table 2 continued

|                     | Moisture<br>Percentage | Test Weight<br>Bushels per acre | Midge <sup>a</sup><br>Percentage | Bird Damage <sup>a</sup><br>Percentage |
|---------------------|------------------------|---------------------------------|----------------------------------|----------------------------------------|
| DEKALB DKS51-01     | 21.6                   | 53.9                            | 11.7                             | 1.7                                    |
| REV®RV9782™*        | 19.7                   | 54.2                            | 6.7                              | 1.7                                    |
| Pioneer 83P17       | 18.7                   | 54.9                            | 1.7                              | 8.3                                    |
| REV®RV9924™         | 21.2                   | 56.4                            | 3.3                              | 0.0                                    |
| Dyna-Gro 765B       | 20.0                   | 55.0                            | 6.7                              | 1.7                                    |
| DEKALB DKS53-67*    | 18.9                   | 55.0                            | 1.7                              | 3.3                                    |
| REV®RV9562™         | 20.7                   | 54.6                            | 13.3                             | 1.7                                    |
| Dyna-Gro M75GB39    | 21.8                   | 54.8                            | 28.3                             | 0.0                                    |
| Dyna-Gro 771B       | 22.6                   | 53.7                            | 38.3                             | 1.7                                    |
| REV®RV9883™         | 21.7                   | 54.1                            | 1.7                              | 3.3                                    |
| REV®RV9823™         | 22.3                   | 53.4                            | 30.0                             | 1.7                                    |
| Golden Acres GA5613 | 19.4                   | 57.4                            | 1.7                              | 5.0                                    |
| SP7868              | 19.2                   | 57.2                            | 1.7                              | 6.7                                    |
| Dyna-Gro 766B       | 18.3                   | 57.5                            | 1.7                              | 6.7                                    |
| REV®RV9794™         | 19.5                   | 56.3                            | 1.7                              | 8.3                                    |
| NKX865              | 20.4                   | 55.1                            | 6.7                              | 3.3                                    |
| Dyna-Gro M77GB52    | 19.2                   | 55.5                            | 1.7                              | 5.0                                    |
| NK6638              | 19.4                   | 56.2                            | 3.3                              | 3.3                                    |
| REV®RV9973™         | 19.8                   | 55.5                            | 1.7                              | 5.0                                    |
| NKX840              | 18.0                   | 56.6                            | 1.7                              | 8.3                                    |
| REV®RV9803™         | 21.4                   | 54.8                            | 25.0                             | 1.7                                    |
| NK8416              | 22.0                   | 55.6                            | 15.0                             | 1.7                                    |

<sup>a</sup>Midge and bird damage collected from Alexandria and Bossier City, as well as both Commerce silt loam and Sharkey clay at Saint Joseph.

<sup>b</sup>Planting dates were Alexandria, April 9; Crowley, March 21; Commerce silt loam-Saint Joseph, April 18; Sharkey clay-Saint Joseph, April 9; Bossier City, April 22; and Winnsboro, April 17.

<sup>c</sup>Planting dates were Alexandria, April 29; Crowley, April 23; Commerce-Saint Joseph, May 14; and Sharkey clay-Saint Joseph, May 17.

Table 3. Grain sorghum results from the core block demonstrations for 2013.

| Hybrid            | Saint Joseph             | Bossier City | State Averages |
|-------------------|--------------------------|--------------|----------------|
|                   | Yield (bushels per acre) |              |                |
| Dyna-Gro 780B     | 123                      | 106          | 114            |
| Dyna-Gro 778B     | 106                      | 84           | 95             |
| Dyna-Gro 771B     | 114                      | 99           | 106            |
| Dyna-Gro M75G1339 | 101                      | 65           | 83             |
| Dyna-Gro M77GB52  | 106                      | 102          | 104            |
| Dyna-Gro 766B     | 98                       | 92           | 95             |
| Dekalb DKS 5400   | 92                       | 59           | 76             |
| Dyna-Gro 765B     | 93                       | 60           | 77             |
| Pioneer 84G77     | 93                       | 55           | 74             |
| Terral Rev 9782   | 109                      | 66           | 87             |
| Terral Rev 9562   | 105                      | 77           | 91             |
| Location Average  | 104                      | 79           | 91             |
|                   |                          |              |                |



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Pub. 2831 1/14 Rev.

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