SORGHUM (GRAIN): Sorghum bicolor (L.) Moench, 'Mycogen 3636 DG8101'

Red imported fire ant (RIFA): Solenopsis invicta Buren

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COMPARISON OF GAUCHO, ADAGE, AND LORSBAN FOR GRAIN SORGHUM STAND PRESERVATION IN THE PRESENCE OF THE RED IMPORTED FIRE ANT, 1999:

The efficacies of two seed treatments and one surface-applied spray were evaluated against the RIFA in grain sorghum at the Macon Ridge location of the Northeast Research Station near Winnsboro, LA. Grain sorghum was planted no-till at a rate of 70,000 seeds/acre with a John Deere 4050 planter into a bermuda-grass sod containing a high density of RIFA colonies. The test was planted on 27 May in a RCB design with 4-row plots (40-inch centers) x 20 ft and 4 replications. Lorsban 4E was applied as a pre-emergence surface spray (PRE) immediately after planting with a CO₂ charged system calibrated to deliver 10 gpa at 34 psi through 8003 nozzles (1/row) in a 20-inch band centered over the seed drill. Other treatments were applied as commercial seed treatments (SEEDT). RIFA densities were estimated on 11, 16, and 25 Jun using a single unruled index card (3 x 5 inches) baited with a teaspoon of peanut butter evenly distributed on one side of the card and was placed, baited side down, in each plot. The number of RIFA was recorded 30 to 60 minutes after placing the card in each plot. Mean values of the three samples are reported. Plant population densities were recorded on 8 Jul by sampling the entire 2 center rows of each plot. Plant heights were estimated on 8 Jul by measuring 20 randomly selected plants from the 2 center rows of each plot. Intra-row skips between plants were recorded on 8 Jul by counting the number of skips > 12 inches between plants in the 2 center rows. RIFA numbers were transformed \([\log (x + 1)]\) prior to ANOVA and LSD. Untransformed means are presented for RIFA density. Other data were subjected to ANOVA and LSD without transformation.

Plant densities were significantly improved in all insecticide-treated plots compared to those in untreated plots. Highest plant densities were observed in the Adage seed treatment compared to those in the Lorsban treatment and in the untreated control. All insecticide treatments significantly reduced the number of intra-row plant skips > 12 inches between plants compared to the untreated control. No significant differences were observed in plant height or in RIFA densities among all treatments.

<table>
<thead>
<tr>
<th>Treatment/formulation</th>
<th>Rate (\text{oz} (\text{Al})/\text{cwt, seed})</th>
<th>Application method</th>
<th>RIFA (no./card)</th>
<th>Plant density (no./40 ft)</th>
<th>Plant height (inches/plant)</th>
<th>Intra-row plant skips &gt; 12 inches (no./40 ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaucho 480FS</td>
<td>4.0</td>
<td>SEEDT</td>
<td>1117a</td>
<td>93ab</td>
<td>27.4a</td>
<td>16.1b</td>
</tr>
<tr>
<td>Adage 5FS</td>
<td>200b</td>
<td>SEEDT</td>
<td>859a</td>
<td>199a</td>
<td>28.0a</td>
<td>11.0b</td>
</tr>
<tr>
<td>Lorsban 4E</td>
<td>0.5c</td>
<td>PRE</td>
<td>790a</td>
<td>70b</td>
<td>27.9a</td>
<td>18.2b</td>
</tr>
<tr>
<td>Untreated check</td>
<td>—</td>
<td>—</td>
<td>1175a</td>
<td>31c</td>
<td>27.1a</td>
<td>29.6a</td>
</tr>
</tbody>
</table>

\((P > F)\)

Means in a column followed by a common letter are not significantly different (LSD; \(P = 0.05\)).

aSEEDT = Seed treatment; \(\text{PRE} = \text{Pre-emergence surface spray.}\)
b\(\text{g (Al)/100 kg seed.}\)
c\(\text{b (Al)/acre.}\)