Recent Advances in Cotton Weed Control

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Introduction

Since the introduction of herbicide tolerant cotton in 1997 (500 experimental acres) acreage has continued to increase. The first Roundup Ready varieties tested in California were not Acala types, but rather upland cotton varieties less adapted to our San Joaquin Valley growing conditions. Adoptions was slow, but acreage began to increase when the Acala Cotton Board changed direction and began allowing, what are now referred to as California Upland varieties to be plant in the San Joaquin Valley. After a year of experimental testing of 12,000 plus acres of Roundup Ready cotton in 1998, with growers experiencing very positive results, acreage increased to 85,000 in 1999. Besides limited small test acreage of BXN cotton in 1997-98 a small portion of the 1999 acreage included the California Upland variety Stoneville BXN 47.

In the 2000 production year, 295,000 acres of herbicide tolerant cotton was grown. The biggest increase in acreage occurred due to the release of an approved Acala Maxxa Roundup Ready variety (Riata) which amounted to 185,000 acres. Another 42,359 acres of Roundup Ready and stacked gene (Roundup + BT) cotton varieties were planted. The remainder of the acreage, 68,340, consisted of a SJV Experimental Acala, BXN Maxxa or Nova, (33,167A) and the California Upland variety Stoneville BXN 47 (35,172A).

Overall, grower experience as well as University studies, have been positive. Growers have been able to effectively control problem weeds while some have reduced or eliminated hand weeding and cultivation resulting in a considerable cost savings.

Herbicide tolerant cotton varieties are now an available option for California cotton growers. Along with the use of conventional herbicide programs such as preplant dinitroaniline herbicides (Treflan and Prowl), selective over-the-top grass herbicides (Poast, Fusilade and Prism), Staple, a selective over-the-top broadleaf herbicide, and layby herbicides such as Caparol and Goal, herbicide tolerant cottons allow growers to effectively and economically control their weed problems. Alternative production systems such as conservation tillage and ultra-narrow row cotton using herbicide tolerant cottons are also being studied to determine their economic and agronomic feasibility.

The decision to use transgenic herbicide tolerant cottons should be based on a number of factors including:

1. Weed species present (annuals vs. perennials).
2. Density and extent of weed population.
3. Is weed pressure enough to impact yield?
4. Can hand weeding be eliminated?
5. Cost of alternative herbicides.
6. Cost of technology fee and seeding rate.
7. Are there well-suited transgenic varieties with favorable agronomic characteristics?

Results

BXN (Buctril tolerant) Cotton

Results of University studies have indicated good to excellent control of most summer annual broadleaf weeds when Buctril is applied over-the-top of two to four-leaf cotton to weeds no larger than the four-to-six-leaf stage.

So far, the research has shown good performance in controlling many weeds but has also identified some problem areas requiring more research and alternative management practices. Buctril provided 95-100 percent control of Chinese thornapple, black and hairy nightshade, lambsquarter and velvetleaf with one application of the herbicide at .5 - 1.0 pound active ingredient per acre. There appeared to be no advantage in control of these weed species when Buctril was applied as a tank mix with either Staple or MSMA.

Buctril is selective on broadleaf weed species only, so tank mixes with selective grass herbicides such as Prism, Poast and Fusilade are necessary to achieve grass control. The research indicated no antagonism or loss of control with either annual (barnyardgrass) or perennial (johnsongrass) grasses when grass herbicides are tank mixed with Buctril. Reduced pigweed control has been seen in some locations when Buctril was tank-mixed with any of the grass herbicides.

Control of annual morningglory with Buctril has been slightly more difficult. Careful attention to application timing makes all the difference. When Buctril was applied to morningglory with four to six leaves and 4- to 12-inch stolons, control ranged from 20-60 percent at 7DAT. Best control was achieved when Buctril was applied to morningglory with two or fewer leaves and enhanced when the herbicide was tank mixed with MSMA. Best control - 90 percent at harvest was seen with an initial Buctril-MSMA tank-mix application at the two-leaf stage, followed by an application of Buctril at 1.0 lb ai/A in early July.

Studies to date have shown no evidence of cotton injury by Buctril at any stage of growth, even during hot temperatures. Buctril can be applied over-the-top and/or post-directed up to 75 days from harvest without effect to cotton growth and development.

Roundup Ready Studies

Research continues to indicate excellent control of summer annual broadleaves and grasses when applied to young seedlings. Larger weeds, including lambsquarter and Chinese thornapple, are not adequately controlled if 12-24 inches tall. Control of nightshade and morningglory is good to excellent. Season-long control or morningglory is achieved but two and sometimes three applications of Roundup are needed. Field bindweed can be effectively controlled with one or two timely applications of Roundup.
Cotton tolerance studies continue to indicate the importance of cotton’s stage of growth when Roundup is applied to Roundup Ready cotton. Over-the-top applications above the four-leaf stage results in deformed and lost bolls and, ultimately, yield reductions.

Studies indicated that Roundup can be safely applied to cotton beyond the 4th leaf stage with a hooded sprayer. In-season plant mapping data showed no significant difference when Roundup was applied post-directed in a hooded sprayer to cotton in the 8 or 13th node stage when compared to Roundup applied over-the-top at the two- and four-leaf stage.

Weed resistance is always a concern with any herbicide program, but with transgenic herbicide tolerant cotton, weed resistance is an added concern. Because Roundup and Buctril do such an excellent job of controlling weeds, there is a temptation to rely on only one or the other of these herbicides to solve weed problems. If weed control programs are developed which solely rely on one herbicide, weed resistance may become a problem. Growers need to implement resistance management strategies including crop rotation, herbicide rotation and control of weed escapes by tillage in order to prevent resistance from developing.

Other Studies

Nutsedge Studies

Evaluations of an experimental herbicide CCA 362622 for the control of both yellow and purple nutsedge provided mixed results. Cotton tolerance seemed to be acceptable but control varied from 30 to 78 percent in studies conducted at different locations. This herbicide did provide 95 to 98 percent control of annual morningglory.

Staple Surfactant Studies

Evaluations of Staple applied with various surfactants for the control of both nightshade and pigweed indicated no significant difference in control with any surfactant when compared to Staple applied alone. Control for both species in studies conducted in a number of different locations ranged from 70 to 100 percent. There were no differences or increases in cotton phytotoxicity due to various surfactants.

Post Directed Herbicide Studies

A number of herbicides including Shark, V-83482, Harvade, and Liberty were evaluated for control of various broadleaf weeds when applied post directed to cotton 20 to 36 inches tall. These herbicides were also evaluated in tank mix combination with Roundup, Staple and MSMA.

Shark, V-83482, and Harvade alone or in combination with Roundup, Staple or MSMA gave excellent control of annual morningglory at 21 DAT. Roundup and Touchdown only provided 60 to 70 percent control at 6 DAT, but at 21 DAT were providing 90-98 percent control. All treatments were exhibiting cotton injury up to 21 DAT except for the Harvade, Roundup and Touchdown treatments. Shark, Shark in combination with Roundup or Buctril and Liberty all provided acceptable control of barnyardgrass and pigweed.
Table 1. Weed Control in Riata (Roundup Ready) Cotton 2000, Ron Vargas, Farm Advisor, University of California Cooperative Extension

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Cotton No. Leaves</th>
<th>Rate/Acre</th>
<th>Barnyardgrass Control</th>
<th>Pigweed Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ai</td>
<td>Product</td>
<td>14 DAT</td>
</tr>
<tr>
<td>1. RO</td>
<td>2</td>
<td>1 lb</td>
<td>1 qt</td>
<td>100</td>
</tr>
<tr>
<td>2. RO + Agridex</td>
<td>2</td>
<td>1 lb + 0.5%</td>
<td>1 qt</td>
<td>96</td>
</tr>
<tr>
<td>3. RO + LI-700</td>
<td>2</td>
<td>1 lb + 0.5%</td>
<td>1 qt</td>
<td>91</td>
</tr>
<tr>
<td>4. RO + Hook</td>
<td>2</td>
<td>1 lb + 0.5%</td>
<td>1 qt</td>
<td>98</td>
</tr>
<tr>
<td>5. RO + R-11</td>
<td>2</td>
<td>1 lb + 0.5%</td>
<td>1 qt</td>
<td>100</td>
</tr>
<tr>
<td>6. RU</td>
<td>2</td>
<td>1 lb</td>
<td>1 qt</td>
<td>91</td>
</tr>
<tr>
<td>7. RU</td>
<td>4</td>
<td>1 lb</td>
<td>1 qt</td>
<td></td>
</tr>
<tr>
<td>8. RU B. RU</td>
<td>2 4</td>
<td>1 lb</td>
<td>1 qt 1 qt</td>
<td>55</td>
</tr>
<tr>
<td>9. RU</td>
<td>2</td>
<td>2 lb</td>
<td>2 qt</td>
<td>100</td>
</tr>
<tr>
<td>10. TD</td>
<td>2</td>
<td>1 lb</td>
<td>1 qt</td>
<td>100</td>
</tr>
<tr>
<td>11. TD</td>
<td>4</td>
<td>1 lb</td>
<td>1 qt</td>
<td></td>
</tr>
<tr>
<td>12. TD B. TD</td>
<td>2 4</td>
<td>1 lb</td>
<td>1 qt 1 qt</td>
<td>100</td>
</tr>
<tr>
<td>13. UTC</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

RO = Roundup Original  
RU = Roundup Ultra  
TD = Touchdown
Table 2. Field Bindweed Control in Riata (Roundup Ready) Cotton 2000, Ron Vargas, Farm Advisory, University of California Cooperative Extension

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate/Acre</th>
<th>Field Bindweed Control</th>
<th>Seed Cotton Yield lbs/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ai</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Application</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; App</td>
</tr>
<tr>
<td>1. RU</td>
<td>1 lb</td>
<td>27</td>
<td>32</td>
</tr>
<tr>
<td>B. RU</td>
<td>1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RU</td>
<td>1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. RU</td>
<td>1 lb</td>
<td>30</td>
<td>36</td>
</tr>
<tr>
<td>B. RU</td>
<td>1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RU</td>
<td>1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. RU</td>
<td>1 lb</td>
<td>27</td>
<td>62</td>
</tr>
<tr>
<td>B. RU</td>
<td>1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RU + Caparol 4</td>
<td>1 lb + 0.8 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. RU</td>
<td>1 lb</td>
<td>29</td>
<td>33</td>
</tr>
<tr>
<td>B. RU</td>
<td>1 lb + 1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RU + Prowl</td>
<td>1 lb + 1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. RU</td>
<td>1 lb</td>
<td>27</td>
<td>52</td>
</tr>
<tr>
<td>B. RU</td>
<td>1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RU + Dual 8E</td>
<td>1 lb + .95lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. RU</td>
<td>1 lb</td>
<td>31</td>
<td>54</td>
</tr>
<tr>
<td>B. RU</td>
<td>1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RU</td>
<td>1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. RU</td>
<td>1 lb</td>
<td>29</td>
<td>47</td>
</tr>
<tr>
<td>B. RU</td>
<td>1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RU + Goal</td>
<td>1 lb + .2 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. RU</td>
<td>1 lb</td>
<td>29</td>
<td>50</td>
</tr>
<tr>
<td>B. RU</td>
<td>1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RU + Aim 40DF</td>
<td>1 lb + .0018 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. RU</td>
<td>1 lb</td>
<td>26</td>
<td>51</td>
</tr>
<tr>
<td>B. RU</td>
<td>1 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RU + Aim</td>
<td>1 lb + .0036 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. RO + Ag98</td>
<td>1 lb + .5%</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>B. RO + Ag98</td>
<td>1 lb + .5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RO + Caparol + Ag98</td>
<td>1 lb + .8 lb + .5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. RO + Staple + Ag98</td>
<td>1 lb + 1 oz + .5%</td>
<td>24</td>
<td>51</td>
</tr>
<tr>
<td>B. RO + Staple + Ag98</td>
<td>1 lb + 1 oz + .5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RO + Ag98</td>
<td>1 lb + .5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. RO + Staple + Ag98</td>
<td>1 lb + 1 oz + .5%</td>
<td>21</td>
<td>55</td>
</tr>
<tr>
<td>B. RO + Staple + Ag98</td>
<td>1 lb + 1 oz + .5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. RO + Staple + Ag98</td>
<td>1 lb + 1 oz + .5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. UTC</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

RU - Roundup Ultra    RO – Rounup Original
Table 3. Postemergence Weed Control in Riata (Roundup Ready) Cotton 2000, Steve Wright, Farm Advisor, University of California Cooperative Extension

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate ae/A</th>
<th>App. Code</th>
<th>7 DAT</th>
<th>15 DAT</th>
<th>21 DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Touchdown</td>
<td>.75 lb</td>
<td>B</td>
<td>18</td>
<td>62</td>
<td>93</td>
</tr>
<tr>
<td>2. Touchdown</td>
<td>.75 lb</td>
<td>C</td>
<td>0</td>
<td>60</td>
<td>97</td>
</tr>
<tr>
<td>3. Touchdown</td>
<td>.75 lb</td>
<td>B</td>
<td>20</td>
<td>88</td>
<td>100</td>
</tr>
<tr>
<td>4. Touchdown</td>
<td>.75 lb</td>
<td>C</td>
<td>20</td>
<td>83</td>
<td>100</td>
</tr>
<tr>
<td>5. Roundup Ultra</td>
<td>.75 lb</td>
<td>B</td>
<td>20</td>
<td>53</td>
<td>95</td>
</tr>
<tr>
<td>6. Roundup Ultra</td>
<td>.75 lb</td>
<td>C</td>
<td>0</td>
<td>53</td>
<td>100</td>
</tr>
<tr>
<td>7. Roundup Ultra</td>
<td>.75 lb</td>
<td>B</td>
<td>20</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>8. Roundup Ultra</td>
<td>.75 lb</td>
<td>C</td>
<td>23</td>
<td>94</td>
<td>100</td>
</tr>
<tr>
<td>9. Prowl</td>
<td>.825 lb AI</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Cotoran</td>
<td>1.0 lb AI</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Untreated</td>
<td>---</td>
<td>---</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4. Annual Morningglory Control in Roundup Ready Cotton 2000, Steve Wright, Farm Advisor, University of California Cooperative Extension

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Rate ai/A</th>
<th>6 DAT</th>
<th>14 DAT</th>
<th>21 DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shark</td>
<td>0.008 lb</td>
<td>88</td>
<td>80</td>
<td>93</td>
</tr>
<tr>
<td>2. Shark</td>
<td>0.015 lb</td>
<td>95</td>
<td>90</td>
<td>97</td>
</tr>
<tr>
<td>3. Shark + Roundup Ultra</td>
<td>0.015 lb + 0.56 lb</td>
<td>97</td>
<td>97</td>
<td>99</td>
</tr>
<tr>
<td>4. Shark + Staple</td>
<td>0.015 lb + 0.0625 lb</td>
<td>93</td>
<td>93</td>
<td>100</td>
</tr>
<tr>
<td>5. Shark + MSMA</td>
<td>0.015 lb + 2.0 lb</td>
<td>93</td>
<td>93</td>
<td>98</td>
</tr>
<tr>
<td>6. V-53482</td>
<td>0.063 lb</td>
<td>93</td>
<td>88</td>
<td>96</td>
</tr>
<tr>
<td>7. V-53482 + Roundup Ultra</td>
<td>0.063 lb + 1.0 lb</td>
<td>93</td>
<td>90</td>
<td>99</td>
</tr>
<tr>
<td>8. Harvade + MSMA</td>
<td>0.3 lb + 2.0 lb</td>
<td>87</td>
<td>87</td>
<td>93</td>
</tr>
<tr>
<td>9. Harvade + MSMA</td>
<td>0.55 lb + 2.0 lb</td>
<td>87</td>
<td>87</td>
<td>99</td>
</tr>
<tr>
<td>10. Harvade + Roundup Ultra</td>
<td>0.3 lb + 1.0 lb</td>
<td>87</td>
<td>87</td>
<td>98</td>
</tr>
<tr>
<td>11. Harvade + Roundup Ultra</td>
<td>0.55 lb + 1.0 lb</td>
<td>87</td>
<td>90</td>
<td>96</td>
</tr>
<tr>
<td>12. Roundup Ultra</td>
<td>1.0 lb</td>
<td>70</td>
<td>72</td>
<td>98</td>
</tr>
<tr>
<td>13. Touchdown</td>
<td>1.0 lb</td>
<td>60</td>
<td>68</td>
<td>90</td>
</tr>
<tr>
<td>14. Untreated</td>
<td>----</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LSD .05</td>
<td>----</td>
<td>0.08</td>
<td>0.13</td>
<td>0.07</td>
</tr>
<tr>
<td>% CV</td>
<td>----</td>
<td>4.8</td>
<td>8.5</td>
<td>4.3</td>
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</tbody>
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Table 5. Nova Cotton in Weed Control Study 2000, Ron Vargas, Farm Advisor, University of California Cooperative Extension

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate</th>
<th>Product</th>
<th>Timing</th>
<th>Barnyardgrass Control</th>
<th>Pigweed Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb ai</td>
<td>Product</td>
<td></td>
<td>14 DAT</td>
<td>28 DAT</td>
</tr>
<tr>
<td>1. Buctril</td>
<td>0.5 lb</td>
<td>1 pt</td>
<td>DAY 1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. Prism</td>
<td>0.125</td>
<td>17 oz</td>
<td>DAY 1</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>3. Buctril + Prism</td>
<td>0.5 lb + .125</td>
<td>1 pt + 17 oz</td>
<td>DAY 1</td>
<td>100</td>
<td>95</td>
</tr>
<tr>
<td>4. Poast</td>
<td>0.188</td>
<td>16 oz</td>
<td>DAY 1</td>
<td>99</td>
<td>100</td>
</tr>
<tr>
<td>5. Buctril + Poast</td>
<td>0.5 lb + 0.188</td>
<td>1 pt + 16 oz</td>
<td>DAY 1</td>
<td>100</td>
<td>95</td>
</tr>
<tr>
<td>6. Fusilade</td>
<td>0.188</td>
<td>12 oz</td>
<td>DAY 1</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>7. Buctril + Fusilade</td>
<td>0.5 lb + 0.188</td>
<td>1 pt + 12 oz</td>
<td>DAY 1</td>
<td>89</td>
<td>88</td>
</tr>
<tr>
<td>8. Buctril + Prism</td>
<td>0.5 lb 0.125</td>
<td>1 pt 17 oz</td>
<td>DAY 1 DAY 7</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td>9. Buctril + Poast</td>
<td>0.5 lb 0.188</td>
<td>1 pt 16 oz</td>
<td>DAY 1 DAY 7</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td>10. Buctril + Fusilade</td>
<td>0.5 lb 0.188</td>
<td>1 pt 12 oz</td>
<td>DAY 1 DAY 7</td>
<td>86</td>
<td>95</td>
</tr>
<tr>
<td>11. Buctril</td>
<td>1 lb</td>
<td>1 qt</td>
<td>20 A Band @ 2TL</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>12. Buctril</td>
<td>0.5 lb</td>
<td>1 pt</td>
<td>Broadcast @ 2TL</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>14. UTC</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: All treatments receive COC @ 1% v/v
Table 6. Johnsongrass Control in BXN Cotton 2000, Steve Wright, Farm Advisor, University of California Cooperative Extension

<table>
<thead>
<tr>
<th>Johnsongrass % Control</th>
<th>Rate/A</th>
<th>7 DAT</th>
<th>14 DAT</th>
<th>21 DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Buctril</td>
<td>16 oz</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. Buctril + Prism</td>
<td>16 oz  17.02 oz</td>
<td>50</td>
<td>75</td>
<td>80</td>
</tr>
<tr>
<td>3. Buctril + Fusilade</td>
<td>16 oz + 12.03 oz</td>
<td>40</td>
<td>75</td>
<td>77</td>
</tr>
<tr>
<td>4. Buctril + Poast</td>
<td>16 oz + 16.04 oz</td>
<td>50</td>
<td>53</td>
<td>37</td>
</tr>
<tr>
<td>5. Buctril B. Prism</td>
<td>16 oz  17.02 oz</td>
<td>0</td>
<td>70</td>
<td>72</td>
</tr>
<tr>
<td>6. Buctril B. Fusilade</td>
<td>16 oz  12.03 oz</td>
<td>0</td>
<td>67</td>
<td>68</td>
</tr>
<tr>
<td>7. Buctril B. Poast</td>
<td>16 oz  16.04 oz</td>
<td>0</td>
<td>37</td>
<td>35</td>
</tr>
<tr>
<td>8. Prism</td>
<td>17.02 oz</td>
<td>40</td>
<td>78</td>
<td>75</td>
</tr>
<tr>
<td>9. Fusilade</td>
<td>12.03 oz</td>
<td>43</td>
<td>80</td>
<td>75</td>
</tr>
<tr>
<td>10. Poast</td>
<td>16.04 oz</td>
<td>17</td>
<td>60</td>
<td>48</td>
</tr>
<tr>
<td>11. Untreated</td>
<td>------</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LSD .05</td>
<td>---</td>
<td>1.2</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>% CV</td>
<td>---</td>
<td>103</td>
<td>54</td>
<td>57</td>
</tr>
</tbody>
</table>

1% v/v Agridex was tank mixed with all the treatments