

## **BANVEL SGF FOR PREPLANT WEED CONTROL IN COTTON**

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### **Abstract**

With the use of current preplant weed control programs in cotton, populations of certain tough to control weeds such as cutleaf eveningprimrose, horseweed, smartweed and others have increased. The addition of Banvel SGF at 1 pint / acre to treatments of Roundup or Gramoxone has resulted in greatly increased control of many of these tough broadleaf weeds without risk of cotton injury.

### **Introduction**

The increase in no-till and limited till acres over the past several years has helped to educate farmers in the use of herbicides rather than tillage for preplant weed control. This practice helps to alleviate problems of soil compaction, erosion, and delayed planting due to increased water uptake in freshly plowed soil. The use of low cost herbicides in this market has helped to increase the acceptance of "burndown" or fallow bed herbicide applications. However, with the use of these herbicide programs, populations of cutleaf eveningprimrose, horseweed, pennsylvania smartweed and other weeds increased since they were not completely controlled by these herbicides. This hastened the introduction of other herbicides such as Harmony Extra for use in fallow bed applications to help control these weeds. These newer herbicides generally provide better control but do not solve all of the weed problems. In the last couple of years, 2,4-D has been used in cotton as a burndown herbicide, however this usage is not directly supported with federal registration. 2,4-D has been quite effective, however, this usage has been allowed due to loopholes in the federal label. Many researchers feel that this usage may not be approved by the EPA in the near future. In 1993, treatments of Banvel SGF plus Roundup were included in a few experiments to determine how it would fit into a preplant weed control system. Results from these experiments were followed up by further testing in 1994 and 1995.

### **Methods and Materials**

Treatments of Banvel SGF plus Roundup were included in over twenty trials conducted in Arkansas, Louisiana, Mississippi, Missouri and Tennessee in 1994 and 1995. The rates of some of the standard herbicide treatments varied among trials, however, only paired comparisons

were made within trials. Application timing of the herbicide treatments was generally determined by weed stage rather than planting date, except for tolerance trials where the applications were made at certain intervals prior to planting. Data from these trials are listed in Tables 1-3.

### **Results and Discussion**

Cutleaf eveningprimrose control was much better with combinations of Banvel SGF and Roundup than Harmony Extra + Roundup, Gramoxone Extra or Roundup alone (Table 1). Horseweed and swinecress control was essentially equal between all treatments of Roundup or Roundup combinations, which were significantly better than Gramoxone Extra. Curly dock control was significantly better with Roundup alone or combinations of Roundup than Gramoxone Extra. Combinations of Roundup and Banvel SGF resulted in better curly dock control than Roundup alone at 10 oz /A.

Table 2 lists comparisons of Banvel SGF and 2,4-D in combination with Roundup and Roundup alone. When comparing Banvel SGF and 2,4-D in combination with Roundup there were very few differences in control of cutleaf eveningprimrose, smartweed and curly dock, however, on species such as clovers, Banvel SGF provided significantly better control.

Combinations of Gramoxone Extra and Banvel SGF or 2,4-D provided significantly better control than Gramoxone Extra alone (Table 3). When comparing 2,4-D and Banvel SGF combinations with Gramoxone Extra there was very little difference in control of cutleaf eveningprimrose. However, with horseweed there seemed to be a trend toward better control with Banvel SGF combinations than with 2,4-D combinations.

While not listed, several trials were conducted to determine cotton safety with Banvel SGF. No injury was observed when Banvel SGF was applied at three weeks prior to planting or greater. When the planting interval was shortened to one or two weeks injury would sometimes occur. However, the injury at one or two weeks was very infrequent and seemed to be very dependent on rainfall. With the accumulation of one inch of rainfall between the time of application and planting, injury was very slight.

### **Conclusions**

The results from the trials conducted from 1993 to 1995 indicate Banvel SGF would be a great addition to a cotton preplant burndown weed control program. Broadleaf weed control with Banvel SGF combinations has been as good or better than all currently labeled products for this application timing.

Table 1. Percent control of cutleaf eveningprimrose, horseweed, swinecress and curly dock at 1-2 weeks prior to planting

| Treatment               | rate/A       | cutleaf | horseweed | swinecress | dock |
|-------------------------|--------------|---------|-----------|------------|------|
| Roundup                 | 10 oz        | 43      | 91        | 91         | 83   |
| Roundup                 | 20 oz        | 64      | 96        | 95         | 93   |
| Gramoxone Extra         | 2 pt         | 54      | 55        | 65         | 29   |
| Harmony Extra + Roundup | 1 oz + 10 oz | 58      | 96        | 94         | 90   |
| Banvel SGF + Roundup    | 1 pt + 10 oz | 93      | 99        | 96         | 96   |
| LSD 0.05                |              | 17      | 13        | 10         | 10   |

Table 2. Percent control of cutleaf eveningprimrose, smartweed, white clover and curly dock at 1-2 weeks prior to planting.

| Treatment            | rate/A     | cutleaf | smartweed | clover | dock |
|----------------------|------------|---------|-----------|--------|------|
| Roundup              | 1 X        | 62      | 55        | 65     | 79   |
| 2,4-D + Roundup      | 1 pt + 1 X | 97      | 94        | 51     | 87   |
| Banvel SGF + Roundup | 1 pt + 1 X | 97      | 95        | 98     | 89   |
| LSD 0.05             |            | 17      | 6         | 26     | 17   |

\* Roundup rates were different between trials, however only paired comparisons were made among treatments.

Table 3. Percent control of cutleaf eveningprimrose and horseweed at 1-2 weeks prior to planting.

| Treatment                    | rate/A     | cutleaf | horseweed |
|------------------------------|------------|---------|-----------|
| Gramoxone Extra              | 1 X        | 72      | 52        |
| 2,4-D + Gramoxone Extra      | 1 pt + 1 X | 96      | 80        |
| Banvel SGF + Gramoxone Extra | 1 pt + 1 X | 93      | 97        |
| LSD 0.05                     |            | 13      | 21        |

\* Gramoxone Extra rates were different among trials, however, only paired comparisons were made among treatments.