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Controlling Velvetleaf in Soybeans with Basagran

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Basagran (bentazon), a new herbicide known under experimental label only in 1973, was tested for velvetleaf control in soybeans at Columbus last year. Applied postemergence (after weeds and soybeans emerge), Basagran demonstrated the potential shown in Table 2.

The plot site where we tested Basagran is a Cherokee silt loam soil (1.4% organic matter). Three replications with plots 10 feet wide (four 30-inch rows) and 40 feet long are used. Treflan (0.75 pounds active ingredient per acre) was applied to all plots and incorporated June 3. The next day the area was seeded with velvetleaf, harrowed, and planted with inoculated Columbus soybeans (10 seeds per foot of row). Fertilizer, applied preplant, was 15 pounds N, 40 pounds P_2O_5 , and 60 pounds K_2O per acre.

Basagran was applied after soybeans emerged at various rates with and without a spreader-sticker and when velvetleaf was in various growth stages. Materials were applied in 28 gallons of water per acre under 40 pounds pressure per square inch.

Information in this report is for farmers, producers, colleagues, industry cooperators, and other interested persons. It is not a recommendation or endorsement and is from only one year of research.

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SOUTHEASTERN KANSAS BRANCH
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The plots were harvested (center two rows of each plot) October 20 using a massey Ferguson self-propelled combine equipped with Hesston headers.

Summary

Although drought and charcoal rot sharply reduced soybean yields, yield increases resulting from Basagran ranged from 56 to 100 percent. Percentage yield increases likely would be lower when velvetleaf populations are lower. Our no-treatment plots averaged 3.8 plants per square inch.

Basagran applied to three-leaf velvetleaf gave excellent control of emerged velvetleaf, but new velvetleaf emerged later and was not controlled (because Basagran is a "contact-type" herbicide). Results after spraying then were relatively poor. Applied to seven-leaf velvetleaf Basagran provided excellent burndown of velvetleaf, but regrowth reduced control. High Basagran rates plus a spreader-sticker gave the best control.

One year's data indicate that 1 pound of active ingredient (1 quart of Basagran) per acre should be applied using a spreader-sticker when velvet-leaf is small (4-6 leaves per plant). Additional velvetleaf will emerge so cultivation or another Basagran application will be needed.

Table 2. Soybean yields and velvetleaf control after using Basagran, Columbus, 1973.

| Lbs AI/a Basagran | Stage of growth ¹ | Soybean yield ² | % velvetleaf control ³ |
|-------------------------|------------------------------|----------------------------|-----------------------------------|
| No treatment | .. | 4.3 | 0 |
| 0.5 + CWT ⁴ | 3 | 5.4 | 6.7 |
| 0.75 + CWT ⁴ | 3 | 7.7 | 28.3 |
| 0.75 + CWT ⁴ | 5 | 8.3 | 75.0 |
| 1.0 + CWT ⁴ | 5 | 7.9 | 93.3 |
| 0.75 | 5 | 7.0 | 43.3 |
| 1.0 | 5 | 8.6 | 58.3 |
| 0.75 + CWT ⁴ | 7 | 6.6 | 21.7 |
| 1.0 + CWT ⁴ | 7 | 7.8 | 75.0 |
| LSD .05 | | 2.3 | 11.2 |

1. Number of leaves velvetleaf had when Basagran was applied.

2. Average of three replications, yields at 12.5% moisture; sharply reduced by drought and charcoal rot.

3. Average of three replications.

4. CWT refers to Citowett plus spreader-sticker @ 1/4 of 1% by volume. Supplied by BASF Wyandotte Corporation.

Table 1. Information related to Basagran applications at three indicated dates.

| Indicated factors | June 22 | July 2 | July 10 |
|---|---------|---------|---------|
| Time of day applied ¹ | 2 p.m. | 11 a.m. | 2 p.m. |
| Velvetleaf stage (no. of leaves) | 3 | 5 | 7 |
| Soybean stage (no. of trifoliolate leaves) | 2 | 4 | 6 |
| Soybean height (in.) | 4 | 7 | 10 |
| Rainfall first 24 hours after application (in.) | None | None | Trace |
| Rainfall first 10 days after application (in.) | 0.74 | 0.74 | 0.74 |
| Rainfall first 10 days after application (date) | July 15 | July 15 | July 15 |
| Date control rations were made | July 6 | July 9 | July 30 |

1. Wind was less than 10 mph for all three applications. It was sunny June 22, partly cloudy July 2 and 10.