



THE WEED PATCH

Morningglory (Tie-Vine) Control at Layby in Sugarcane

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At layby, herbicides are applied broadcast and directed underneath the sugarcane canopy following the last cultivation. Spray coverage of row tops and middles is critical to provide weed control until the crop is harvested. Directed application is necessary to increase herbicide coverage of small weeds not destroyed by tillage and to avoid contact of newly emerging sugarcane leaves that can result in injury with some herbicides.

Morningglory Residual Control Research

Curtis Jones, while a graduate student in my program, investigated residual control of morningglory with various herbicides labeled for use at layby. Specifically he looked at control of red morningglory, one of the more common and problematic morningglory species found in Louisiana sugarcane fields. His finding that seeds of red morningglory can germinate throughout the growing season and that plants are able to grow under the shaded sugarcane canopy suggest that herbicides with long residual activity would be desirable. In his research conducted on a silt loam soil, herbicides were applied to the soil surface and rainfall for activation was received within 10 days after application. At 5, 7, 9, and 11 weeks after treatment (WAT) plots were rated for red morningglory control and glufosinate herbicide was applied to the entire experimental area to control all vegetation. This allowed for evaluation of long term control of red morningglory with the various herbicides and rates.

The table below summarizes data collected for red morningglory control with Spartan, Atrazine, DuPont K-4, Sencor, and Valor. To compare control for the various herbicides within each rating date (data in columns), values followed by the same lower case letter are not different from one another. To compare residual control for a specific herbicide treatment (data in rows), values followed by the same uppercase letter are not different from one another.

The inconsistent red morningglory control that has been observed in the past with Atrazine applied at the layby cultivation in May is related to its short residual activity. In our research, Atrazine controlled red morningglory equally at 2, 3, and 4 qt/A and control was 88 to 90% 5 WAT. However, by 7 WAT control with Atrazine was around 70% and dropped to around 50% 9 WAT. Lack of long term residual control was not unique to Atrazine. DuPont K-4 at 4 lb/A, Sencor at 3 lb/A, and Valor at 8 oz/A provided control similar to that observed for Atrazine 5 WAT, but control with Sencor was inferior to Atrazine 7 WAT. Of the herbicides evaluated, Spartan was most effective and at 4 oz/A provided 94% control 7 WAT and 78% 11 WAT. Indications are that Spartan will be either unavailable or in short supply this year.

Red Morningglory Residual Control

Herbicide	Rate	5 WAT	7 WAT	9 WAT	11 WAT
	Product/A	————— % —————			
Spartan 75 DF	3 oz	87 de A	80 b A	69 b B	64 b B
Spartan 75 DF	4 oz	96 abc A	94 a A	83 a B	78 a B
Spartan 75 DF	5 oz	97 a A	94 a A	84 a B	78 a C
Spartan 75 DF	6 oz	97 a A	94 a A	84 a B	78 a B
Spartan 75 DF	7 oz	98 a A	93 a A	84 a B	80 a B
Spartan 75 DF	8 oz	98 a A	94 a A	88 a B	82 a C
Atrazine 4L	2 qt	88 cde A	69 d B	50 de C	30 efg D
Atrazine 4L	3 qt	92 abcd A	69 d B	53 cde BC	44 cd C
Atrazine 4L	4 qt	90 abcde A	70 d B	53 cde C	39 cde C
DuPont K-4	4 lb	96 abc A	79 bc B	61 bc C	46 c D
Sencor 75DF	2 lb	89 bcde A	55 e B	37 g C	26 g D
Sencor 75 DF	3 lb	94 abcd A	54 e B	41 fg C	27 fg D
Valor 51WDG	2 oz	63 g A	44 f AB	39 fg B	26 fg B
Valor 51WDG	4 oz	92 abcde A	55 e B	45 efg BC	36 def C
Valor 51WDG	6 oz	93 abcd A	68 d B	56 cd BC	43 cd C
Valor 51WDG	8 oz	96 ab A	71 cd B	61 bc B	46 c C

The bottom line is that Atrazine, DuPont K-4, Sencor, and Valor did not provide long term red morningglory control. In fields with a high population of red morningglory, control for around 5 to 6 weeks can be expected with these herbicides when applied at the layby cultivation in May. To maximize the effectiveness of soil applied herbicides, the layby application can be delayed two to four weeks after cultivation and after rain has settled the soil. This delay in application will help to assure that sufficient herbicide is present in the soil later in the growing season when germination of red morningglory seed can be expected. If vines are present at application, a surfactant should be added. Morningglory can also be controlled late season with 2,4-D and Weedmaster, Kambamaster, and Brash (which contain 2,4-D), but only in areas where 2,4-D use is not restricted. Atrazine can also be applied overtop of sugarcane to control large vines. Clarity does not contain 2,4-D and can also be used overtop of sugarcane for morningglory control.

Please contact me if you have questions or comments. Weed control recommendations for sugarcane and other crops as well as other weed science research and extension information can be found at www.agronomy.lsu.edu/.

Dr. Jim Griffin is with the LSU AgCenter in the School of Plant, Environmental, and Soil Sciences and has research and extension responsibilities in the area of sugarcane weed management.