

WEED MANAGEMENT

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Evaluation of Gramoxone Tank Mixes on Ryegrass

A study was conducted at the Sugar Research Station in St. Gabriel to evaluate the impact of the tank mixing partners Tricor, Atrazine, Brash, and Tricor + Brash with Gramoxone. Treatments were applied on March 4th to 10-15" Italian ryegrass which was beginning to initiate seed production. Italian ryegrass control 3 days after application (daa) was greatest for the Gramoxone (3pt/a) treatment (80%), and control was significantly reduced when Gramoxone was tank mixed with Tricor (2 lb/a)(54%), Atrazine (2 qt/a)(69%), Brash (1.5 pt/a)(71%), and Tricor + Brash (2 lb + 1.5 pt/a)(53%) (Table 1). The reduction in weed control was not apparent when plots were evaluated 10, 18, 31, and 45 daa, regardless of herbicide treatment. Italian ryegrass control 10 and 18 daa was >80% for all treatments; however, the majority of the ryegrass recovered and control was reduced to 60%, 31 daa and was further reduced to 30%, 45 daa.

Tolerance and Efficacy of Armezon (topramezone) in Sugarcane

Three herbicide trials were initiated in spring to evaluate the tolerance and efficacy of Armezon (topramezone) in sugarcane. All trials were conducted at the LSU AgCenter's Sugar Research Station in St. Gabriel, LA. Trial one investigated the efficacy of Armezon on emerged annual grasses and winter broadleaf weeds. Sugarcane injury 13 daa ranged from 5 to 10% when Armezon (1 – 2 oz/a) was applied alone or in combination with currently utilized spring herbicides and MSO surfactant. The injury was noted as segmented leaf chlorosis; however, sugarcane quickly recovered, and no injury was noted 29 daa. When herbicide treatments were applied on April 5, 2016, the predominate weeds included 2-4" crabgrass, 8-10" Virginia pepperweed, and 4-6" sowthistle. When Armezon was applied alone or in combination with TriCor 75DF plus Prowl H2O, crabgrass control 29 daa was at least 85% and broadleaf weed control was at least 77%. When Armezon was applied in combination with Prowl H2O or with the combination of Prowl H2O plus Atrazine, crabgrass control was reduced by 20-30% as compared to Armezon alone. Trial two investigated the efficacy of multiple applications, rates, and herbicide combinations of Armezon on bermudagrass. On March 16th, the first application of Armezon was applied to plots and herbicide rates ranged from 1 to 2 oz/a. All of these treatments also included additional herbicides including Prowl H2O, Prowl H2O + Atrazine, or TriCor. No sugarcane injury was noted regardless of treatment 13 daa, and bermudagrass control ranged from 49 to 60%. Bermudagrass control was reduced 7.5 to 11% for the Armezon + Tricor (1oz + 1lb/a) treatment, as compared to the other treatments excluding the nontreated check. The second application of Armezon was applied 3 weeks later and sugarcane injury was observed 13 daa for Armezon when applied at 2 and 4 oz/a. Bermudagrass control was 71%, 13 days after the second application for the Armezon + Prowl H2O (2 oz + 96 oz/a) (first app.) followed by Armezon (2 oz/a) (second app.). Only selected treatments received a third

application of Armezon on April 19th. No injury was noted 15 daa. Bermudagrass control for the treatments which received a third application of Armezon ranged from 59 to 64%. Trial three investigated the effect of multiple applications of Armezon at differing rates on sugarcane yield. Sugarcane yield was not statistically affected by multiple applications of Armezon. Sugarcane yield per acre ranged from 37 tons/a for the nontreated check down to 32 tons/a for the Armezon 4 oz + 4 oz + 4 oz/a (April 5th, April 19th, and May 10th) treatment.

Preemergence Control of Itchgrass with Lumax EZ, Acuron, and Alion

Two itchgrass studies were conducted in 2016 to evaluate the efficacy of Lumax EZ, Acuron, and Alion, as well as currently labeled herbicides to control itchgrass (*Rottboellia cochinchinensis*) prior to emergence. The first study was conducted in Abbeville, LA and treatments were applied to a fallow sugarcane field on March 27th. Lumax EZ (3.25 qt/a) and Acuron (3 qt/a) provided minimal control of itchgrass (30 and 20%, respectively) 32 daa (Table 2). Alion (3.75 oz/a) provided 49% control; however, the industry standards, Prowl H2O (2.6 qt/a) and Velossa (1.66 pt/a) provided 88 and 73% itchgrass control, respectively. The second study was conducted in Jeanerette, LA and treatments were applied to newly planted sugarcane on September 9th. Likewise, Lumax EZ (3.86 qt/a) and Acuron (3 qt/a) provided poor itchgrass control (30 and 26%, respectively) (Table 3). Alion (3.75 oz/a) provided 53% control; however, the industry standard, Prowl 3.3EC (3.6 qt/a) provided 83% itchgrass control. A postemergence herbicide study to investigate the efficacy of Armezon to control itchgrass was conducted in Abbeville, LA and treatments were applied to a fallow sugarcane field on May 11th. Armezon at the 1 and 2 oz/a rates, provided no control of itchgrass, whereas, Asulam (4 qt/a) provided 80% control.

Evaluation of Lumax EZ, Acuron, Alion, Authority Elite, and Spartan Charge At-planting

An at-planting study was conducted in 2016 to evaluate the efficacy of Lumax EZ, Acuron, Alion, Authority Elite, and Spartan Charge in Cheneyville (Table 4.). Weeds present in the nontreated check included browntop millet, barnyard grass, and broadleaf weeds. No injury to sugarcane was noted 28 daa. All products except Spartan Charge provided excellent preemergence grass and broadleaf weed control at 28 and 50 daa. The weed control for Spartan Charge was poor, only controlling approximately 20% of grass and broadleaf weeds.

Tolerance and Efficacy of Alion (indaziflam) in Sugarcane

A spring preemergence study was conducted to evaluate the tolerance and efficacy of Alion (Indaziflam) in sugarcane. Treatments were applied to plantcane at the Sugar Research Station in St. Gabriel on March 18th and May 10th. Upon evaluation of plots in mid-April, no weeds were present in the nontreated control, as well as, Alion treatments. The layby application of Alion on May 10th provided excellent grass control. Alion applied at 1.25 oz/a provided 78% control of barnyard grass and browntop millet 42 daa. Control was increased to 85% at the 2.5 oz/a rate and again increased to 93% at the 3.75 oz/a rate.

Postemergence Control of Merrill's Nightshade

Merrill's nightshade (*Solanum merrillianum* Liou) has become a problematic weed in many Louisiana sugarcane fields. A spring postemergence herbicide study was conducted in Napoleonville, LA. Average Merrill's nightshade control for the herbicide treatments Trycera (triclopyr) (1.39 qt/a), Clarity (dicamba)(1 qt/a), and Callisto (mesotrione)(3 oz/a) + Atrazine

(atrazine)(2 qt/a) were 99, 89, and 90%, respectively 27 daa. Brash (2,4-D + dicamba)(1 qt/a) controlled 35% of Merrill's nightshade.

Table 1. Mean percentage POST control of 10 to 15 inch Italian ryegrass in St. Gabriel, LA in 2016.

Treatment ¹	Rate/a	% Italian ryegrass control				
		3 DAT ²	10 DAT	18 DAT	31 DAT	45 DAT
Gramoxone	3 pt	80 a ³	84 a	81 a	63 a	31 a
Gramoxone + Tricor	3 pt + 2 lb	54 c	85 a	83 a	66 a	31 a
Gramoxone + Atrazine	3 pt + 2 qt	69 b	85 a	83 a	60 a	30 a
Gramoxone + Brash	3 pt + 1.5 pt	71 b	80 a	80 a	59 a	30 a
Gramoxone + Tricor + Brash	3 pt + 2 lb + 1.5 pt	53 c	83 a	81 a	64 a	31 a
Check		0 d	0 b	0 b	0 b	0 b

¹ Treatments applied 3/4/16. Non Ionic Surfactant Induce 0.25% v/v added to all treatments.

² DAT = Days After Treatment.

³ Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

Table 2. Mean percentage PRE control of Itchgrass in Abbeville, LA in 2016.

Treatment ¹	Rate/a	% Itchgrass Control 32 DAT ²
Prowl H ₂ O	2.6 qt	88 a ³
Prowl H ₂ O	3.1 qt	91 a
Velpar S	1 qt	65 bc
Velossa	1.6 pt	73 ab
Callisto	6 oz	19 ef
Lumax	3.25 qt	30 de
Acuron	3 qt	20 ef
Alion	3.75 oz	49 cd
Zidua	7.5 oz	54 bcd
Check		0 f

¹ Treatments applied 3/27/16 to fallow ground.

² DAT = Days After Treatment.

³ Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

Table 3. Mean percentage PRE control of Itchgrass in Jeanerette, LA in 2016.

Treatment ¹	Rate/a	% Itchgrass Control 27 DAT ²
Prowl EC	3.6 qt	83 a ³
Velossa	1.66 pt	53 ab
Lumax	3.86 qt	30 b
Acuron	3 qt	26 b
Alion	3.75 oz	53 ab
Command	3 pt	64 a

¹ Treatments applied 9/9/16 to plantcane.

² DAT = Days After Treatment.

³ Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

Table 4. Mean percentage PRE control of Browntop Millet, Barnyardgrass, and Broadleaf Weeds in Cheneyville, LA in 2016.

Treatment ¹	Rate/a	% Control 50 DAT ²		
		Browntop Millet	Barnyardgrass	Broadleaf Weeds
TriCor	3 lb	91 a ³	99 a	86 a
Sinbar	1 lb	78 a	89 a	73 a
Alion	3.75 oz	84 a	83 a	83 a
Lumax EZ	3.25 qt	94 a	100 a	88 a
Acuron	3 qt	95 a	95 a	75 a
Spartan Charge	15.2 oz	20 b	19 b	21 b
Authority Elite	41.1 oz	99 a	98 a	93 a
Check		0 b	0 b	0 b

¹ Treatments applied 8/10/16 to plantcane.

² DAT = Days After Treatment.

³ Means within a column followed by the same lowercase letter are not significantly different at P=0.05.