

## Chemical Control of Tadpole Shrimp 2016

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### Methods

#### *Agronomic information*

- Location Rice Experiment Station, Biggs, CA
- Rice variety M-206. Seed was soaked for 1 h in 5% bleach.
- Seeding Plots were water seeded on 5/31. Seeding rate was 150 lbs/A.
- Irrigation Field flooded on 5/29, kept continuously flooded for the duration of the trial, and drained before harvest.
- Plots Each plot was individually leveed. The area seeded in each plot was 200 ft<sup>2</sup> (20 ft l x 10 ft w). The area flooded (area seeded plus ditches next to levees) was 299 ft<sup>2</sup> (23 ft l x 13 ft w).
- Fertilization Applied 34-9-5 pre-plant at 450 lbs/A on 5/21 for a total of 153 lbs of N, 40.5 lbs of P<sub>2</sub>O<sub>5</sub> and 22.5 lbs of K<sub>2</sub>O.
- Pesticides Cerano at 10 lbs/a on 5/31  
Granite GR at 15 lbs/a on 6/10  
SuperWham at 5 qt/a on 7/4
- Harvest All plots were harvested using a small plot combine on 10/22. The area harvested per plot was approximately 125 ft<sup>2</sup>. Yields were converted to lbs/a at 14% grain moisture.

#### *TPS infestation and evaluation*

On 6/6, two cages (5 x 6.25 x 4.5 inches) made of fine netting containing 1 inch of soil were submerged on each plot, one on each of the length sides. On each cage, 5 TPS were introduced. TPS were collected from nearby fields and ranged in shell length from 7.5 to 12 mm, with an average of 9.3 mm. The cage netting kept the TPS in but allowed water movement through the cage. At each evaluation date, the cages were removed from the water and TPS quickly counted.

## Treatments

Treatment	Rate/a
Untreated	-
Warrior II	2.56 fl oz
Belay	4.5 fl oz
Entrust SC	10 fl oz
Pyganic	64 fl oz
AzaDirect	2 pints
Dimilin	16 fl oz

Treatments were applied 6/7. Pesticides were applied manually or using a pressurized, CO<sub>2</sub> backpack sprayer. The calculation of the material applied per plot was made using the whole plot (area seeded and ditches next to levees). The materials were distributed evenly throughout the whole plot.

## Field evaluations

- Number of TPS 0, 1, 2 and 3 days after treatment
- Two stand counts on a one square foot area per plot were taken on 6/28
- Yield

## Statistics

The experiment was conducted as a randomized complete block with 7 treatments and 4 replications. Analysis of variance was used to detect differences among treatment means for stand, TPS counts and yield. Tukey's honestly significant difference (HSD) test was used to compare means of significant effects. The level of  $\alpha$  used for all analyses was 0.05.

## Results and Discussion

One day after the introduction of TPS in the cages, before the treatments were applied, the number caged TPS per plot was similar for all treatments (table 1). There was a significant ( $P < 0.001$  for all) effect of the treatments in the number of caged TPS 1, 2 and 3 days after the treatments were applied.

Table 1. Average number of live caged TPS per plot.

Treatment	Rate/a	0 DAT	1 DAT	2 DAT	3 DAT
Untreated	-	5.0 a	4.4 a	3.8 a	3.6 a
Warrior II	2.56 fl oz	5.1 a	0 b	0 c	0 b
Belay	4.5 fl oz	5.1 a	0 b	0 c	0 b
Entrust SC	10 fl oz	5.1 a	1.1 b	0 c	0 b
Pyganic	64 fl oz	5.1 a	0 b	0 c	0 b
AzaDirect	2 pints	5.1 a	4.6 a	4.3 a	4.1 a
Dimilin	16 fl oz	5.1 a	3.7 a	1.6 b	0.5 b

Warrior, Belay and Pyganic controlled TPS 1 day after treatment. Some TPS survived the application of Entrust after one day of the treatments (fig. 1), but died the following days. Aza Direct and Dimilin did not control TPS (Table 1 and fig. 1).

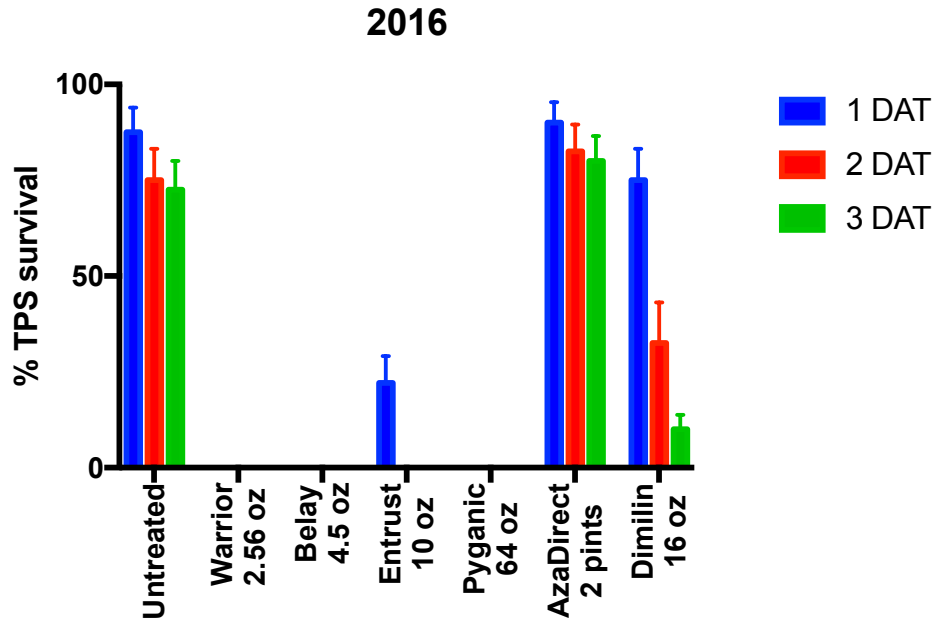


Fig. 1. Percentage TPS survival after application of treatments.

Stand was significantly ( $P < 0.002$ ) affected by the treatments (table 3). Untreated plots and treated plots with AzaDirect had a significantly lower stand than plots treated with Belay. Stand in other plots was similar. Yields were not affected by the treatments.

Table 3. Stand and yield.

Treatment	Stand (plants/ft <sup>2</sup> )	Yield (lbs/A)
Untreated	18.63 a	9,871
Warrior II	20.38 ab	10,013
Belay	26.88 b	10,232
Entrust SC	23.50 ab	10,350
Pyganic	20.62 ab	9,827
AzaDirect	16.62 a	9,433
Dimilin	23.75 ab	9,563