

Texas A&M University-Corpus Christi
8th Annual Undergraduate Research Symposium
Abstract Submission Form

ABSTRACTS DUE BY 5:00 PM FRIDAY, OCT 17, 2008

Send as email attachment to: Sergio Olivares (Sergio.Olivares@tamucc.edu)

Please check the type of presentation: Oral Poster

Both presenters and attendees MUST pay the \$5 fee.

Title	Effects of Foliar Biochemicals on toxicity of Arsenic to <i>Helianthus argophyllus</i>
Authors¹	Soto, Eric, Grisé, David, Cammarata, Kirk
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Abstract Text⁴	<p>Our project goal is to understand the response of sunflowers to arsenic and to see if the responses can be altered by foliar application of biochemicals. Previous research has shown that sunflower plants (<i>Helianthus argophyllus</i>) exposed to arsenic after specific foliar amino acid treatment exhibited lessened and/or delayed toxicity compared to those without treatment. Sunflower plants were grown in a growth chamber in 4" pots, and fertilized weekly with 1/4X Hoagland's solution. When approximately 12" tall, 47 sunflower plants were divided into a control group (A) of three plants receiving no arsenic and foliar biochemicals, and 4 groups of 11 plants receiving sodium arsenate (2mM). Groups B-E additionally received, respectively, control, glycine (20mM), proline (20 mM) or salicylic acid (1mM) foliar treatments. Arsenic treated plants began to die on the thirty second day of treatment. Glycine treated plants displayed a small delay in toxicity, in contrast to proline treatments which had no beneficial effect. Salicylic acid may have had a small delaying effect as well. The effect of glycine was much smaller than previously observed, perhaps due to growth conditions. A second experiment was conducted to determine if arsenate had any affect on photosynthetic rates. The arsenate treatments exhibited an inhibitory effect on photosynthetic rates beginning at one week of treatment. These experiments need to be repeated under different conditions.</p>
Supported by⁵	TAMUCC Research Enhancement Grant

¹ Please use the following format: Author 1 (Last name, first name); Author 2 (Last name, first name); Author 3 (Last name, first name)...

² Please provide the email address of the presenter.

³ If you did your research at an institution other than TAMUCC, please add that institution's name.

However, YOUR PRIMARY AFFILIATION is Texas A&M University-Corpus Christi.

⁴ Abstract can be a maximum of 250 words, Microsoft Word format.

⁵Name the granting agency supporting work and grant number