



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	American Journal of Experimental Agriculture
Manuscript Number:	2013_AJEA_5322
Title of the Manuscript:	Synergistic interaction of sublethal doses of 2,4-D and glufosinate on glyphosate-resistant <i>Amaranthus palmeri</i>

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
A few questions remain and additional edits are needed to clarify and improve readability. It would be helpful if sub-heading titles were the same in the Materials and Methods and Results and Discussion sections. Otherwise, it is hard to refer back to the M&M when reading R&D. The dicamba dose-by-population interaction for injury was significant (L 270), yet it appears main effect LSDs instead of the interaction LSD was used to separate means. This requires clarification. L 31 Suggest replace crop growers with producers. L 45 Revise statement. HR biotypes arise from individual plants within a population, not small groups of plants. By the time groups of HR plants are noticed, the evolutionary process is well advanced. L 63 Why single-out LiberyLink technology as impacting GR management strategies? Won't commercialization of crops resistant to other herbicides mentioned (when available) also impact GR management strategies? L 90 Clarify that seed collection was from 10 to 20 plants <u>from each population</u>. L 91 Apostrophe after the s in growers means all growers. I doubt you sampled all grower fields in those counties. Just say grower fields. L 92 . . . Poinsett counties <u>in</u> Arkansas. L 120 Explanation is needed why greater differentiation (tolerance) to 2,4-D and dicamba than to tembotrione was expected within individual populations. This statement still does not adequately justify 0.5x and 1x rates of tembotrione and 1x and 2x rates of 2,4-D and dicamba. L 125 What is the justification for blocking reps in a controlled greenhouse experiment? Why wasn't analysis done as a factorial CRD, or split-plot within a CRD since there was no obvious need to block reps? If there was need for blocking, state the reason. L 165 The mean relative humidity (RH) <u>at the time of spraying greenhouse</u> and field experiments was 52 and 32%, respectively. L 186 I think this should read 14 -99% instead of 14-9%. L 187 Suggest reversing sentences to read, The PRA-C field had been in continuous GR-cotton for more than 10 years and had the highest frequency of GR plants. L 188-189 The word follow-up suggests additional work with glufosinte, except this is the first discussion of glufosinate results. And the latter part of the sentence makes no sense. Consider, Efficacy experiments found a few individuals ($\leq 12\%$) in most of the 12 <i>A. palmeri</i> populations that survived the 1x glufosinate dose, but those plants were highly injured and likely would not have recovered to produce seed (data not shown). L 190-191 Table 1 shows 71% injury leaving 29% survival, not 30% as written. As written, this implies an exception to the previous sentence that plants were highly	Subheadings are reconciled In view of lingering concern about using the 2x rate as the supplemental dose for testing the population response to 2,4-D and dicamba vs. using the 0.5X rate for obtaining additional population response data to tembotrione, we decided to drop these additional rates and focus on differential population response to the 1x rates of all herbicides. As a result, the dose X population interaction question no longer applies. L31 – replaced. L45 – revised L63 – Statement is revised L90 – Clarified L 91 – changed L 92 - changed L120 – This statement was deleted; no longer applicable, as we decided to report only data from the 1X doses to simplify things. L125 – We always block our experiments even in the greenhouse because there is a temperature gradient across the benches with distance from the cooling pads. Shade from adjoining greenhouse units also affect light intensity distribution, despite supplemental lighting. We need to block to account for these background, extraneous differences. L165 – modified L186 – corrected L187 – corrected L188-189 modified L190-191 Yes, Pra-C was indeed an exception. A phrase was inserted to clarify this.



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injured. I don't think that is what you intended. Clarification is needed. L 195 Is this statement true for both injury (Table 1) and mortality (Table 2)? If so, state that. L 197 Insert comma after evident. L 202 . . . followed by Mis-B and Mis-C. L 203-208 Awkward. Consider, The percentage of individual plants exhibiting less than 50% injury was greatest in populations STF-B (45%), STF-C (26%), and Mis-B (23%) (Fig. 1). Fewer than 10% of plants from populations Law-B, . . . and STF-A exhibited ≤50% injury, indicating that, if L 209 . . . would need an alternative control strategy L 248-250 . . . and the majority of survivors were injured 99% (Tables 1 and 2). Occasional lesser injured plants were unlikely to reproduce. Similarly, 2,4-D also showed L 253 Delete did. L 271 You don't need to say "an average of". It's understood that data for statistically-analyzed replicated studies are mean values. L 275 At which rate? L 287 . . . , and glufosinate performed better than 0.5x doses of each (Table 3). L 289 . . . and greater activity than 1x doses of dicamba L 291 This is misleading because there is no glufosinate data in Tables 1 or 2. L 295 . . . less solar radiation and fewer physical or environmental stresses. L 333 Delete already. L 334 Insert period after [12], and delete and in this research. Start sentence This was achieved L 338 You already established this is greenhouse data, so delete <u>in the greenhouse</u> at end of sentence. L 354 So, are you suggesting use of dicamba in LL soybeans? Revise this statement. L 401 You don't know that this is true for all populations, therefore limit the statement to the populations tested. Also, the study is past tense, so use past tense throughout the the manuscript, including the abstract. L 402 <u>The</u> Pra-C population . . . than the <u>other populations</u>. L 430 . . . from grower fields . . .	L195 – Tables 1 and 2 are now consolidated. This should make it easier to examine injury and mortality data for each population. L197 – Sentence was modified. L202 – changed L203-208 L209 – Changed to: . . . would need additional control measures . . . L248-250 changed as suggested L253 – deleted L271 – changed L275 – only 1x are reported L287 – changed L289 – changed L291 - The glufosinate efficacy data is shown in Tables 2 and 3 in the first row where no additional herbicide was used. L295 – changed L333 – deleted L334 – changed as suggested L338 – deleted L354 – revised L401 – changed L402 - changed L430 - changed
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