



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	American Journal of Experimental Agriculture
Manuscript Number:	2013_AJEA_8670
Title of the Manuscript:	Long-Term Fertilization Effect On Agronomic Yield And Soil Organic Carbon Under Semi-Arid Mediterranean Region

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments																																																				
The authors have failed to address the significant problems with this manuscript. For example, in lines 203-211 the authors go through a series of yield increases given a 1% increase in SOC, and the reader is referred to Figures 2-4. The authors claim yield increases with increasing SOC in all cases, yet in Figure 2 the control shows a yield decrease with increasing SOC and the compost treatment is basically a flat line, no yield change with changes in SOC. Figure 3 shows a flat line for the control and yield decreases with increasing SOC in the compost and compost+mycorrhizae treatments. Figure 4 shows a flat line for the control and yield decreases for the manure and compost+mycorrhizae treatments. I pointed this out in my first review. The authors say they have addressed this with a statement in their conclusions, but that does not resolve saying everything increases in the text of the manuscript and then showing graphs with very definite decreasing yields given increases in SOC for some of the treatments. The statements given in the text do not agree with the graphs! I pointed out in my earlier review that the authors talk about yield increases given a 1% increase in SOC, and that this is not statistically sound because most of their data shows much less than a 1% SOC increase, meaning they are projecting results beyond their data range. The authors responded that these yield increases given 1% SOC increases were literature information, not their findings. It is not presented that way in the manuscript. Lines 203-211 refer us to Figures 2-4, which are data from this study, and say that data shows that increases in SOC led to increases in yield. That does not read as if literature data is being presented. Furthermore, the "Results" section of one's paper is not an appropriate place to bring in some other study's data, those kinds of comparisons are done in the Discussion. One of two things is happening here – 1) the authors are presenting their own data and are doing so in a way that is not statistically sound, or 2) the presentation of the information is so poorly written that it's impossible to tell what is the authors' data versus what they have gotten from other sources. Either way, this is not publishable in its current form. Furthermore, if the authors are presenting literature data, their data does not agree with the literature data, yet they fail to ever address that. I still feel there is publishable information in it, but not as currently presented.	Thank you very much for your kind question and warning about relationship between SOC and Yield. We have used following table's regression equations. So in this case if you give me any more information I will be happy. <table><tr><th>Plant Species</th><th>Fertilizer Treatments</th><th>Regression equation</th><th></th></tr><tr><td rowspan="5">Wheat</td><td>Control</td><td>Y = -1,1831x + 3,8362</td><td>R² =0,2051</td></tr><tr><td>Mineral Fertilizer</td><td>Y = 4,907x + 0,2998</td><td>R²=0,3166</td></tr><tr><td>Compost</td><td>Y = 0,1887x + 4,9615</td><td>R²=0,019</td></tr><tr><td>Animal Manure</td><td>Y = 1,4015x + 3,2548</td><td>R²=0,7561</td></tr><tr><td>Com. + Mycorrhiza</td><td>Y = 1,546x + 3,7345</td><td>R²=0,4188</td></tr><tr><td rowspan="5">Pepper</td><td>Control</td><td>Y=0,6095x + 12,562</td><td>R²=0,001</td></tr><tr><td>Mineral Fertilizer</td><td>Y = 38,786x - 21,144</td><td>R²=0,994</td></tr><tr><td>Compost</td><td>Y = 5,2737x + 18,278</td><td>R²=0,25681</td></tr><tr><td>Animal Manure</td><td>Y = -4,0425x + 30,559</td><td>R²=0,2772</td></tr><tr><td>Com. + Mycorrhiza</td><td>Y=8,3305x + 33,063</td><td>R²=0,1681</td></tr><tr><td rowspan="5">Maize</td><td>Control</td><td>Y = -1,2792x + 7,5588</td><td>R²=0,0156</td></tr><tr><td>Mineral Fertilizer</td><td>Y = 3,6564x + 7,4971</td><td>R²=0,0673</td></tr><tr><td>Compost</td><td>Y = -2,3076x + 14,183</td><td>R²=0,1296</td></tr><tr><td>Animal Manure</td><td>Y = 1,2118x + 8,3551</td><td>R²=0,1651</td></tr><tr><td>Com. + Mycorrhiza</td><td>Y = -3,2461x + 14,566</td><td>R²=0,0484</td></tr></table> In present manuscript the line between 203 and 209 rewritten since in some treatments there were negative regression I removed in the text. The data presented in Fig 2. show that the increase in SOC concentration in 0-15 cm depth by 1% increased wheat grain yield by 5.21 Mg ha⁻¹, 5.15 Mg ha⁻¹, 4.66 Mg ha⁻¹ and 5.28 Mg ha⁻¹ for inorganic fertilizer, compost, manure, and compost mycorrhizae, respectively. Similarly increase in SOC concentration by 1% increased maize grain yield by 6.28 Mg ha⁻¹, 11.15 Mg ha⁻¹, 11.88, Mg ha⁻¹, 11.32 Mg ha⁻¹ for control, fertilizer, compost and compost+ mycorrhizae respectively (Fig. 3). Increase in SOC concentration by 1 % increased yield of pepper by 17.65 Mg ha⁻¹, 26.52 Mg ha⁻¹ for mineral fertilizer and manure respectively (Fig. 4). Second one, Since there is the same conflicts results in between yield and increasing SOC. Same time the results are conflicts with each other. We may be need to gather more data and do more research on long term experiments for better prediction. For several years since there were high or low yield there is no consisted increase and decrease with increasing SOC with time. I will be happy if you suggest any methodology.	Plant Species	Fertilizer Treatments	Regression equation		Wheat	Control	Y = -1,1831x + 3,8362	R ² =0,2051	Mineral Fertilizer	Y = 4,907x + 0,2998	R ² =0,3166	Compost	Y = 0,1887x + 4,9615	R ² =0,019	Animal Manure	Y = 1,4015x + 3,2548	R ² =0,7561	Com. + Mycorrhiza	Y = 1,546x + 3,7345	R ² =0,4188	Pepper	Control	Y=0,6095x + 12,562	R ² =0,001	Mineral Fertilizer	Y = 38,786x - 21,144	R ² =0,994	Compost	Y = 5,2737x + 18,278	R ² =0,25681	Animal Manure	Y = -4,0425x + 30,559	R ² =0,2772	Com. + Mycorrhiza	Y=8,3305x + 33,063	R ² =0,1681	Maize	Control	Y = -1,2792x + 7,5588	R ² =0,0156	Mineral Fertilizer	Y = 3,6564x + 7,4971	R ² =0,0673	Compost	Y = -2,3076x + 14,183	R ² =0,1296	Animal Manure	Y = 1,2118x + 8,3551	R ² =0,1651	Com. + Mycorrhiza	Y = -3,2461x + 14,566	R ² =0,0484
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