

Interactive comment on “Cooperative effects of field traffic and organic matter treatments on some compaction-related soil properties” by Metin Mujdeci et al.

Anonymous Referee #2

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The paper entitled “Cooperative Effects of Field Traffic and Organic Matter Treatments on Some Compaction-Related Soil Properties” deals with a very classical subject about soil compaction in a agricultural land in Turkey. Paper is interesting, but it is not performed to be understood. Authors deals with well-known problem. Methods and conclusions are not new neither revolutionary. In paper missing data for better understanding the methods, very important for understanding the results. There is no data related to crop performance, or for stability of aggregates, although authors explain great part of their results through state of structural stability in treatments. Missing explanations of the methods used in the research. What volume had cylinders for bulk density? Why authors did not measure (or estimate?) quantity of common vetch incorporated

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into soil? In how many occasions organic amendments were incorporated into soil? The paper has no novelty/originality and I wonder how this paper can contribute to the community of readership? Some of conclusions are speculations and they are not supported with results. Specific comments are below. Page – line Page 1- line 6-7 – It is conclusion statement and should go on the end of paragraph. Page 1 – line 19 – try to use another word (e.g. mitigation). I have doubts that “Chasing” was the best choice. Page 1 – line 25 – Please define soil compaction before authors started the introduction. Page 1 – line 25-26 – Soil compaction occurs also trough natural processes as well, not only as consequence of anthropogenic activity Page 1 – line 27-28 – It depends about depth of compacted soil layer. There are crops that do not need deeper rhizosphere than 20 cm. Page 2 – line 4-6 – Definition of compaction goes at the beginning of Introduction section. Page 2 –line 6 – Please use term crop instead plant. Do that in whole manuscript. Page 2 – line 7-9 - Try to use newer literature sources, if possible. Page 2 – line 10 - put “differential porosity” instead “soil porosity”. Page 2 – line 11-13 – Sentence is unclear. Please reformulate. Page 2 – line 16 – What differences? Please define. Page 2 – line 17-18 – Authors should add more reference on this statement. This is very broad and attractive subject so please add more references if authors speak about international level. Page 2 – line 31 – Please add reference that supports this statement. This is common research on most of different textured soil types. Page 2 – line 33 – Authors missed to write hypothesis and specific objectives of paper. Explanation of paper novelty should also be valuable to the readers. Page 3 – line 7-11 – Did authors applied farmyard manure and green manure each year? If so please state that. Page 3 – line 16-17 - Please state a number of soil cores in total. Page 3 – line 19. Unclear. Penetrometer (Ejkelkamp) record soil strength at each centimetre. Page 3 – line 24 – authors should provide more detailed procedure for determination total porosity. Page 4 - Line 3-4 – Statistical analysis is not described well. Readers cannot follow used procedures about post-hoc test. Do your datasets follow normal distribution? Page 4 - Line 15 – Significance in not confirmed at all number of passes (Fig. 1) so this statement is incorrect. Page 5 – line 6 – Define “desirable

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penetration resistance” Page 5 – line 9 –Please write: increased soil compaction measured by penetration resistance. Page 5 –line 10-11 – define which depths. Page 5 – line 12 - Put source (Fig 1) and support the written information Page 5 – line 12-14 – This is speculation. Authors did not measure those parameters. I suggest putting reference that supports this statement. Page 5 – line 16 – Add:or by adoption soil management system with decreased annual traffic. Page 6 – line 28-29 – It will be of great benefit for the paper quality if authors could provide structural stability test. There are numerous of simple handled tests in literature. Page 6 – line 35 – define ag-lands Page 7 – please remove borders around figures. Also remove horizontal lines. Also state did significance was determined at 0.01 or 0.05 level? Page 8 – line 11-13 – Please add Fig number that supports this information. Page 8 –line 16-17 – It is very hard to follow discussion when it is not clear when organic amendment is incorporated in soil? 2010? 2013? Or each year? Page 10 –line 15 – Please add: “. . . to be dependent to addition and type of organic matter treatment.” Page 10 – line 15-16 – This is speculation. Where is author’s data that support your statement? Authors did not state amount of green manure incorporated into soil.

Interactive comment on Solid Earth Discuss., doi:10.5194/se-2016-84, 2016.

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