



SDI Review Form 1.6

Journal Name:	International Journal of Plant & Soil Science
Manuscript Number:	2014_IJPSS_13036
Title of the Manuscript:	Pedo-transfer function for saturated hydraulic conductivity and soil losses under Vetiver alleys for soil fertility and aggregation
Type of the Article	

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	<p>Abstract</p> <p>The topic of the study suggests that the study will focus mainly on saturated hydraulic conductivity and soil losses but the author failed to mention how saturated conductivity was done in the methodological section of the abstract.</p> <p>Though the conclusion of the abstract focuses on ksat (line 21-22), none of it was mentioned in the results section of the abstract.</p> <p>The author failed to mention the usefulness of the key results or the study.</p> <p>The author should therefore review the abstract based on the topic of the research or vice versa</p> <p>The conclusion in the abstract is not clear. "This result proved that under vertiver soil conservation practice, the variability in the amount of Ksat might not be exclusively related to the amount of soil loss. But soil loss in the field also increases in precipitation of a particular day due to the antecedent moisture content and reduced 0.5 mm aggregates." Does this mean ksat does not influence soil loss?</p>	<p>Treated</p> <p>Treated</p> <p>Treated Some locations with low Ksat was expected to have high soil loss, but the reverse was true. Therefore, this result was attributed to other factors such as; precipitation of a particular, the antecedent moisture content and level of 0.5 mm aggregates. The result of this study informed that antecedent moisture (AMC) should by investigate using Principal</p>



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	<p>Introduction</p> <p>The author failed to review and acknowledge in the literature the relation between ksat and soil loss. Where the author tried to that on line 44 to 49, no citation was done. Moreover, this not enough. A thorough literature review must be done.</p> <p>Although the mentioned the level of effects of vetiver grass on soil and water conservation in Nigeria, the author failed to mention where it has been used with supported literature.</p> <p>There are other transfer functions such as (R)USLE, EUROSEM, LISEM that the author failed to review, and decided why these are not applicable in the study. See Owusu, G. (2012). A GIS-based estimation of Soil loss in the Densu Basin in Ghana. West African Journal of Applied Ecology, 20, 2 Available from http://www.ajol.info/index.php/wajae/article/view/86332, Access 18th November, 2013.</p> <p>The author should therefore convince the readers why a new study with ksat is needed.</p> <p>Results and discussion</p> <p>You may not give too much attention in presenting those physical properties there were not part of the</p>	<p>Component Analysis to compare the contribution of AMC and Ksat in the loading.</p>
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	<p>transfer function else it becomes boring reading the paper. Summarize those results prior to line 427: 'Saturated hydraulic conductivity (log Ks) and soil loss relationship'; this is the main part of the study, I guess.</p> <p>Use tables or log paper to summarize lines 306-326 i.e particle size distribution</p> <p>Use table to summarize Bulk density and Porosity</p> <p>You may rearrange your presentation by presenting "Saturated hydraulic conductivity (Ksat) at different vetiver spacing" on line 465 before "Saturated hydraulic conductivity (log Ks) and soil loss relationship" online 427</p> <p>The 46% explanation of variance of soil loss by ksat on figure 1 was not significantly tested.</p> <p>Equation 14 seems to be wrong because ksat is found on both sides. The parameters of the equation 14 and 15 are not defined</p> <p>I don't see the need for equation 15 if equation 14 explained 89% of ksat. Why didn't you include ksat and those variables not in equation 14. in equation 15?</p> <p>All the results lack discussion. If you estimated soil loss based on soil characteristics alone how does your</p>	<p>Treated</p> <p>I may not completely agree with this. If Ksat should explained 46% variance of soil loss, it therefore means that, 54% is spread among rainfall erosivity, erodibility, and other environmental elements and physical attributes.</p> <p>It is not wrong. What is on the left hand side is log Ksat (log normal),</p>
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	<p>study differ from Wischmeier & Smith (1978) soil loss $A = R * K * L * S * C * P$ where A is the annual soil loss in tonnes/hectare, R is the erosivity of rainfall, K is the erodibility of the soil, L is the slope length in metres, S is the slope in per cent, C is the cultivation?</p> <p>Use literature to discuss your results.</p> <p>Then revise your conclusion.</p>	<p>and inside the equation is the measured Ksat</p> <p>Equations 14 and 15 explained two different constants; Ksat and soil loss</p>
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<p>Minor REVISION comments</p>	<p>Method The study did well in measuring ksat instead of using analytic approximation of characteristic curve(Dingman, 2002, p. 232). If the study is therefore using field measurement then it must not spend too much time on presenting how other physical parameters were done, they were not involved in ksat determination. You can summarize that point in aTable</p> <p>Check usingwater on line 89 Check the period "." on line 101 Check the incomplete sentence on line 195 Check the " ," on line 216 Explain how the head difference was carried out on line 222 Check line 235 Check line 245</p> <p>Check equation 9 well against (Dingman, 2002, p. 224)</p> $\theta = \frac{M_{wet} - M_{dry}}{\rho_w \cdot V_s}$ <p>Equations 11 and 12 seem to be cut and paste; they are not visible.</p>	<p>Detailed Ksat will unnecessarily increase the volume of this work. More detail could be found in Klute and Dirksen, (1986)</p> <p>Corrected</p> <p>Corrected Corrected Corrected</p> <p>If ρ_w in Dingman's equation is the density of water which is equal to 1, it therefore means that Equation 9 and this equation of Dingman, (2002) are the same.</p> <p>Treated</p>
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<u>Optional/General</u> comments	A lot of work has gone through this research and the study looks promising with good scientific writing but there seems to be lack of clear coordination or relationships between the components of research such as saturated hydraulic conductivity, soil losses, porosity, bulk density, Vetiver alleys, soil fertility and aggregation. There are no strong logical connections between them. If the author cannot enter these variables into the function, then the author must concentrate on ks_{at} that was entered into pedo-transfer functions. However, the weak untested relationship between soil loss and ks_{at} is not enough. More literature review on the existing functions are also lacking. A major revision is therefore needed.	