



SDI Review Form 1.6

Journal Name:	International Journal of Plant & Soil Science
Manuscript Number:	2013_IJPSS_8206
Title of the Manuscript:	Effect of bulk and nano cobalt on barley seedlings and remediation of CoCl ₂ toxicity using NaOCl
Type of the Article	Original Research 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:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



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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>This manuscript was to investigate the effect of cobalt oxid (pure and nano) on plant and the relationship of cobaltous chloride hexahydate and NaOCl on plant growth. The experimental design was basically reasonable. Results of this experiment are reliable for further investigation of remediation process.</p>	<p>1. The abstract section should pronounce the advantage of this research</p> <p>As pointed out, advantage of research has been added in the abstract section.</p> <p>2. The introduction section should describe about the relationship of NaOCl on Co uptake in plant and the toxicity of NaOCl in the nature.</p> <p>As suggested, the relationship of NaOCl on Co uptake in plant and the toxicity of NaOCl in the nature have been added in the introduction section.</p> <p>3. The material and methods section should add cobaltous chloride hexahydate and NaOCl concentration. It was good to briefly describe the experiment of cobaltous chloride</p>



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		<p>hexahydate and NaOCl</p> <p>As pointed out, cobaltous chloride hexahydate and NaOCl concentrations have been added in the materials and methods section.</p> <p>4. Why cobaltous chloride hexahydate was chosen for this research?</p> <p>Because of the ease of the hydration/dehydration reaction cobalt chloride helps in color change in glass industry, organic synthesis and electroplating objects, production of pigments in ceramics and as a mordant in dry cleaners. Cobalt chloride hexahydrate is a catalysts used for metal surface treatment also. The waste from these industries contains cobalt more than prescribed limit. Such industrial effluent when reached to the crop fields cause toxicity to plants. So, to remediate cobalt rich soil we have tried to use NaOCl for detoxification. The explanation has been added in the introduction.</p> <p>5. What is the relationship between Co</p>
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		<p>(pure and nano)’s experiment and cobaltous chloride hexahydrate and NaOCl ‘s experiment?</p> <p>Two salts of Co are used in industry on a large scale, cobalt oxide also known as Co (II,III) oxide or $\text{CoO} \cdot \text{Co}_2\text{O}_3$ (Co_3O_4, macro and nano scale particles which are insoluble in water) and cobalt chloride (CoCl_2, macroscale particles, water soluble). Nano cobalt is a recent discovery and needs to be investigated in detail. CoCl_2 is toxic at higher concentrations. The present work is aimed at studying the differential effects of macro and nano particles of cobalt oxide. Cobalt chloride hexahydrate is a catalysts used for metal surface treatment also. The waste from these industries contains cobalt more than prescribed limit. Such industrial effluent when reached to the crop fields cause toxicity to plants. So, to remediate cobalt rich soil we have tried to use NaOCl for detoxification. NaClO converts transition metal complexes into their oxides. Explanation has been given in the</p>
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		<p>introduction.</p> <p>6. What form of cobalt was used in the research?</p> <p>Cobaltous chloride hexahydrate is also known as Co (II) chloride.</p> <p>Cobalt (II,III) oxide also known as Cobaltic-cobaltous oxide;cobalto-baltic oxide;cobalto-baltic tetroxide; cobaltosic oxide; cobalt oxide (Co₃O₄); cobalt tetraoxide; tricobalt tetraoxide; tricobalt tetroxide. The forms of cobalt have been given in the text.</p> <p>All the suggestions of the referees have been incorporated in the text.</p>
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<p><u>Minor</u> REVISION comments</p>	<ul style="list-style-type: none"> - The abstract section should pronounce the advantage of this research - The introduction section should describe about the relationship of NaOCl on Co uptake in plant and the toxicity of NaOCl in the nature. - The material and methods section should add cobaltous chloride hexahydate and NaOCl concentration. It was good to briefly describe the experiment of cobaltous chloride hexahydate and NaOCl - Why cobaltous chloride hexahydate was chosen for this research?. - What is the relationship between Co (pure and nano)'s experiment and cobaltous chloride hexahydate and NaOCl 's experiment? - What form of cobalt was used in the research? L 84 showed cobalt (II, III) oxide nanopowder but it did not show in the material and methods. - L 91-95 was long, poorly organized and repetitive. - L100-104, the sentences were rather repetitive, could be more concise. - L 111 should (Table..) be Table. - L 136 should , be . - L 183, noth? - The author should declare the data presentation either the tables or figures. Which one (tables or figures) is suitable for the research? 	
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	- The scientific name should be italic characters.	
<u>Optional/General</u> comments	<ul style="list-style-type: none">- The author should show the different between this paper and with the other paper in discuss section.- The abstract, discussion and reference section should be adjusted as IJPSS's recommendation.	