



SDI Review Form 1.6

Journal Name:	Biotechnology Journal International
Manuscript Number:	Ms_BJI_35996
Title of the Manuscript:	Investigation the effects of UV radiation on physiological characteristics of Moringa oleifera in vitro and in vivo.
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.

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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		
Minor REVISION comments	<p>The authors investigated the seeds and induced callus up to formation of shoots of <i>Moringa oleifera</i> species, the genus <i>Moringa</i>, family <i>Moringaceae</i>. When cultivated is a fast growing species up to a height of 10–12 m. They grow on slender, hairy stalks in spreading or drooping later flower clusters and in a cool clime, with constant seasonal temperatures and constant rainfall, flowering can happen twice or even all year. The fruit is a hanging, three-sided brown capsule of 20–45 cm size. <i>Moringa</i> is a useful food, that include immature seedpods, leaves, oil obtained from pressed mature seeds and roots. It contain high vitamin C and are a good source of dietary fiber, potassium, magnesium, and manganese. <i>Moringa</i> seed oil also has potential for use as a biofuel. The roots are shredded and used as a condiment with sharp flavor qualities derived from polyphenols. The Ultraviolet (UV) light, an electromagnetic radiation with a wavelength from 400 nm to 10 nm, divided in three wavelengths. UV-C (200-280 nm, extremely harmful to living organisms, but not relevant under natural solar irradiation). UV-B (280-320 nm, approximately 1.5 %, damaging effects in plants). UV-A (320-400 nm, 63% of the solar radiation and is the least hazardous part of UV radiation). The deleterious effect of UV-B is the reductions: in expression of photosynthetic genes, as Rubisco activity, changes in ion permeability of thylakoid membranes, and level of chlorophyll and carotenoids. For example in barley, wheat, oats, maize, soybean and cotton found that increases the level of proline in seedling vs increases UV-B radiation. In addition, when plant or seeds exposed to UV-B radiation reduces plant growth vigor, chlorophyll contents, carotenoids, amino acids, proteins, total sugars and starch. Nevertheless, induces the accumulation of flavonoids, proline, copherol and ascorbate. Since, the germination of immature seeds succeed 20 %. But in the callus induction of <i>Moringa oleifera</i> influenced by temperature, nutrients, pH and ascorbic acid; the shoot development of the epicotyl meristematic tissues cultured on Murashige and Skoog (MS) in semi-solid medium, amended with 1 mg/L benzylaminopurine (BAP) and 1 mg/L gibberellic acid (GA3), initiated shoot proliferation. The juvenile shoots cut into nodal sections of <i>M. oleifera</i> Lam. on MS solid basal medium supplemented with either 1 mg/L or 1.5 mg/L benzylaminopurine (BAP), the callus developed, differentiated into small shoots. The maximum number</p>	<p>Dear Sir/Madam</p> <p>Thank you very much for the valuable feedback. Sir, right Now I have reviewed the english language of the research, also the aim of the project and a conclusion was included in this work, but I have a small observations here, that the summary of the experiments I have done in this research were as follows:</p> <p>1- Seeds treatments with UV radiation in a different waveleangth (UV-A, UV-B and UV-C), then seeds were germinated <i>in vivo</i> (in the field) in order to study the effect of UV radiation on some physiological parameters of <i>Moringa Oliefera in vivo</i>.</p> <p>2- Seed sterilization, germination and callus induction <i>in vitro</i> (in the lab.)</p> <p>Where callus tissues were induced and multiplied <i>in vitro</i> to study the effect of ultraviolet radiation on the percentage of callus induction and callus fresh weight. As well as study the effect of ultraviolet radiation on the proline and carbohydrate concentrations either in the intact plants or in callus tissues and lam not regenerated plantlets from callus tissues or developed callus to shoots level.</p> <p>And the results showed that the physiological parameters studied <i>in vivo</i> reduced significantly at UV-B recording 1.5, 1.8, 3.4, 2.8 and 19.3cm No. germinated plants, No. Adventitious buds, No. axillary buds, No. apical buds and seedlings height respectively. UV-B recorded the highest mean values in relation to percentage of callus induction, callus fresh weight and proline concentration (100%, 112mg and 9.7µM/g respectively) compared to the control (72.3%, 93.3mg and 7.3µM/g respectively). A significant reduction in the mean carbohydrate concentration was observed in all UV treatments in both intact plants and callus cultures compared with control.</p>



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	<p>of shoots produced in 1 mg/L BAP, increased with repeated sub-cultures. The aim of this work is to use the UV light type A, B and C treatment to Moringa Oliefera seeds for 30 min, in order to obtain callus development, differentiation into small shoots with high production of proline. The authors found that, UV-B treatment produces the highest mean values in relation to percentage of callus induction, callus fresh weight and proline concentration (100%, 112 mg and 9.7 μM/g, respectively) compared to the control (72.3 %, 93.3 mg and 7.3 μM/g, respectively). Therefore, accept the Ms for publication in the Journal. English revision, the aim, and a conclusion must be included in this work. The authors found an interesting result using the harmful UV light treatment to Moringa seeds and callus development to shoots level.</p>	
<u>Optional/General</u> comments		