



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.

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		
Minor REVISION comments	The authors investigated the seeds and induced callus up to formation of shoots of Moringa oleifera species, the genus Moringa, family Moringaceae. 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. Moringa 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. Moringa 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 Moringa oleifera 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 M. oleifera 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 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	



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	proline concentration (100%, 112 mg and 9.7 μ M/g, respectively) compared to the control (72.3 %, 93.3 mg and 7.3 μ M/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.	
Optional/General comments		

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