

**Review Form 1.6**

Journal Name:	<a href="#">International Journal of Plant &amp; Soil Science</a>
Manuscript Number:	Ms_IJPSS_87731
Title of the Manuscript:	Basic Concepts of High throughput Metabolomics in Plants
Type of the Article	Review 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)
<b>Compulsory</b> REVISION comments	<p>The review subjected to revision cover a very interesting and fast developing area of science i.e. plant metabolomics. This review summarizes a broad range of various aspects from sample collection to analytical methods. however, there some items that should be improved or explained.</p> <p><b>General remarks:</b></p> <p>There are some typing errors that should be removed.</p> <p>The style of language used on this text requires substantial improvement by a native speaker.</p> <p>What is the source of Figures? Are the prepared by Authors or took from other reports?</p> <p>Table and figures should be cited in the body of the text.</p> <p>There are plenty of sections that are prepared careless.</p> <p>All abbreviations where used for the first time should be explained.</p> <p>All Latin names should be written using Italic font and in full form when used for the first time.</p> <p>The references cited are in the majority over 10-year old.</p> <p>The quality of figures should be improved.</p> <p><b>Specific remarks:</b></p> <p>1) Abstract:</p> <p>"...different metabolite and chemical molecule.." only one molecule?</p> <p>"metabolome and the way they are altered in.." – please correct;</p> <p>"..stress resistance stress resistance studies.." – please correct;</p> <p>"High throughput metabolomics deals with all the techniques which are time efficient and can produce effective metabolite profiling." – please correct the style;</p> <p>"plant expression" – what is this?</p> <p>one sample is prepared?</p> <p>2) Introduction:</p> <p>"Fields utilizing metabolomics-" – this title of the subsection should be more precise, it is hard to understand what about this section is to be;</p> <p>"However, substantial research has been undertaken into the very complex and poorly understood secondary metabolite pathways." – substantial research or poorly understood?</p> <p>this sentence sounds awkwardly</p> <p>"Such pathways are frequently biologically important since they are linked to abiotic or biotic stress tolerance, as well as other environmental and organism interactions, food quality attributes like taste, organoleptic qualities and Use in medicine field and other things." – what about is this?</p> <p>"General procedure" – of what?</p> <p>"...variability in at least one genetic or enviromnmental variation.." – what about is this?</p> <p>The whole this section requires substantial correction.</p> <p>"...environment must be managed during culture..."; "...should be preferred to extraction and analytical. ..." – please explain in the text what about is this;</p> <p>"throughput" – of what?</p> <p>Harvest</p> <p>"For the metabolite studies, the harvesting techniques need to include several major points like at what age ,from which tissue and at what time the plant or plant part should be removed." – please correct, maybe this is clear for Author/s but not for the reader.</p> <p>"For keeping the metabolite intact in the sample , the enzymatic reactions must be Enzyme activity should be prevented (AP Rees and Hill, 1994)." - please correct;</p> <p>"80 C" - please correct;</p> <p>"...families of compounds utilising a mix of extractions..." – utilising? requiring?</p> <p>"..on full organs when tiny or tissue bits, samples can be kept as organs, tissue pieces, or powdered tissue at 80 C." – incomprehensible;</p> <p>"metabolomics samples" – please correct;</p> <p>"Chart 1 : High Throughput Metabolomics" – this is another figure, there is no need to enter</p>	<p>oted and corrected</p> <p>Noted</p> <p>Done</p>

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	<p>“Charts”; and the title should be descriptive as much as possible;  “Some important high throughput metabolomics techniques are explained in the following section  A) <b>Chromatography based Metabolomics</b>–“ – this all together requires substantial improvements in text organisation, including section title;</p> <p><b>“GC- MS Metabolite Profiling”</b> – what kind of compounds could be analysed using this method?  <b>Data preprocessing in GC-MS</b>  ” To construct numerical metabolite or chemical feature matrices for statistical computations, and to give a way of associating such chemical properties to a metabolite identification, automated data processing tools are required. Retention indices and mass spectra are employed in GC–MS profiling investigations for this reason..” – for what reason in fact? To construct matrices or to use automated tools? Please improve;  “In academia,...” - ?  “...caution must be exercised” – why?  “...which necessitates...” - ?  <b>“LC–MS Metabolite Profiling”</b>  “...allows you..” – just allows  <b>“Figure 4 -LC- MS chromatogram (base-peak intensity) of an aqueous-methanol extract from peel of ripe tomato fruit numbers at peaks indicate retention time and accurate mass on top of peak. (Iijima et al., 2008)”</b> – please correct, in present form it is unclear;  <b><sup>1</sup>H Nuclear magnetic Resonance (NMR)</b>  mathenol – please correct;  “For NMR based metabolite profiling. high-field devices with superconducting magnet coils operating at liquid helium temperature should be used.” – this one or two sentences?</p> <p><b>B) Chromatography-free metabolomics</b></p> <p>“Figure7 A) Direct infusion mass spectra of aqueous phase metabolite extracted from 4 different lines of Brassica napus seeds. B) The clustering heap map” – one metabolite?  “Youanquan et al. 2020” – is in fact Liu et al., 2020; and please improve this sentence, this is awkwardly written;  “and” – please correct;  “..pattern... as biomarkers...” - ?  allows for – to take into consideration or enable?  “...have not only enabled previously impossible experiments,...” – unclear;  “DART-MS (direct analysis in real time mass spectrometry) is a well-established technology..” – or technique?  “determine the identify of a product...” – unclear;  “Finally, reagent ions formed from atmospheric water or (solvent) vapour at the surface are subjected to analysis, where they cause a chemical ionisation process.” – please improve, this is unclear;  Table 1 “Source- Han et al. 2009” should be given in the table caption, not beneath of table.  Conclusion  “The complicated genetics commonly linked with crops poses a significant difficulty.” – please correct this sentence and improve the style of the whole section.</p>	Done
<b>Minor</b> REVISION comments		
<b>Optional/General</b> comments		

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**PART 2:**

	Reviewer's comment	Author's comment <i>(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)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	