



## Quantification of the Response of Soyabean to Short-Term Multiple Stresses Related to Flood, Drought & High Temperature

Shweta Amrita Lakra \*

*Centre for Environment Science & Climate Resilient Agriculture (CESCRA), IARI, New Delhi-110012, India*

**Address for Correspondence:** Shweta Amrita Lakra; [amrita260606@gmail.com](mailto:amrita260606@gmail.com)

**ABSTRACT:** A field study was conducted with soybean during monsoon season of 2011 to quantify the response of soybean to short-term multiple stresses related to floods, drought and high temperature. For this the treatments of flooding, drought and high temperature alone and in five different combinations at different phases of crop growth viz., Irrigated as and when required; Rainfed; Rainfed-High temperature-Excess water –Drought; Rainfed-High temperature; Rainfed-Excess water-Drought-High temperature; Rainfed-Drought-High temperature-Excess water; Rainfed-Moderate drought were imposed on crop 30 days after sowing (DAS). For the first 30 days all plots were under rainfed condition. The first stress was imposed from 30-50 DAS; the second stress was imposed from 50-70 DAS and third from 70-90 DAS as per the sequence mentioned above. Overall results on phenology, leaf area index, biomass accumulation and distribution, yield and yield components indicate that the plants responded differentially to sequential stresses depending on the coincidence of the occurrence of type of stress. Results also indicate that soybean can withstand high temperature stress if water is not limiting. However, high temperature with water stress can adversely affect the yields. In seasons when heavy rainfall events coincide with vegetative growth period followed by dry spells during flowering and then good rainfall events in the pod filling period (PFP) will not affect the crop yield. On the other hand, dry spells during vegetative period, high temperature with good rains during flowering and heavy rains during PFP significantly reduces the yield. © 2014 iGlobal Research and Publishing Foundation. All rights reserved.

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**Conference Proceedings: International Conference on Life Sciences, Informatics, Food and Environment;  
August 29- 30, 2014**

*Indo Global Journal of Pharmaceutical Sciences( ISSN 2249 1023 ; CODEN- IGJPAI; NLM ID: 101610675) indexed and abstracted in EMBASE(Elsevier), SCIRUS(Elsevier),CABI, CAB Abstracts, Chemical Abstract Services(CAS), American Chemical Society(ACS), Index Copernicus, EBSCO, DOAJ, Google Scholar and many more. For further details, visit <http://iglobaljournal.com>*