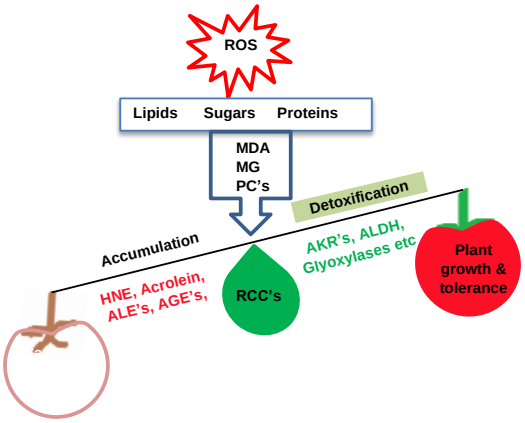
Carbonyl cytotoxicity affects plant cellular processes and detoxifying enzymes scavenge these compounds to improve stress tolerance

Research team headed by Dr. Ramu S Vemanna at DBT's Regional Centre for Biotechnology (RCB), Faridabad reviewed literature that provides an insight that sequence of events happening in the plants and their influence on plant physiology and subsequent effect on food. Further it also provided few important ways in which plants mitigate these cytotoxic compounds.



Overall the study provided insights in to development of strategies for healthy food production. The enzymes that were identified in plants have broad spectrum substrate; furthermore, it will also provide an option for chemists to develop therapeutic agents such as chiral alcohols etc. The basic understanding of the enzymes present in plants to detoxify these cytotoxic compounds provides option to exploit them as bio-factories at low cost.

Plants constantly exposed to stress and oxidative stress is ubiquitous. The downstream effect of oxidative stress in terms of generation of reactive carbonyl compounds (RCC), the glycation products was not explored well in plant biology. The review has been published in the *Journal of Agricultural and Food Chemistry*.

Link: https://pubs.acs.org/doi/10.1021/acs.jafc.0c02005