Preface

A four-carbon non-proteinogenic amino acid, gamma-aminobutyric acid (GABA), initially discovered as a metabolite in plants during the mid-20th century in potato tubers. But, the focus shifted to animals after the revelation of its function in neurotransmission especially due to its role in calming anxiety. Recently, this was accompanied by the release of CRISPR-edited and GABA enriched tomatoes in the market. Eventually, the research has also been performed for elucidating function of GABA in plants after the finding of its active role in combating various biotic and abiotic stresses. Because of its unique cellular working, recently, GABA has also been identified as a signalling molecule regulating plant development and stress acclimation. Therefore, it would'nt be unexpected that this four carbon signalling molecule may play a very pivotal role in sustaining crop production in the present scenario of climate change.

The current global population is near 8 billion which is expected to increase to 10 billion by 2050. So, we will be in need of 30% extra crop yields. But current global crop production is severely hampered by the unexpected episode of climate change. Therefore, researchers should seek some strategies for increasing crop production for feeding the global population. Since GABA plays very promising roles in plant growth and development, and stress acclimation, this four carbon metabolite/signaling molecule could be a very promising agent in boosting crop productivity under changing environmental conditions.

In the present book we have tried to compile potential roles of GABA in plant biology from developmental and stress acclimation points of view. In this edited book, attempts has been made to put together plant GABA related research from leading laboratories around the globe in one place, in order to make it easily accessible to researchers, students, academicians, etc. In this book, 18 book chapters have been compiled. These book chapters encompass knowledge about discovery and biosynthetic mechanisms of GABA, GABA crosstalk with other signaling molecules during plant development, and biotic and abiotic stress tolerance, and GABA and plant derived therapeutics. We believe that this book will be useful for the readers from academic and non-academic backgrounds.

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