

Contents

- List of contributors, vii
- Preface, x
- About the editors, xii
- 1** Biotechnological applications to improve salinity stress in wheat, 1
Sami ullah Jan, Ghulam Kubra, Mehreen Naz, Ifrah Shafqat, Muhammad Asif Shahzad, Fakiha Afzal and Alvina Gul Kazi
- 2** Soybean under abiotic stress: Proteomic approach, 28
Arafat Abdel Hamed Abdel Latef, Sumaira Jan, Elsayed Fathi Abd-Allah, Bushra Rashid, Riffat John and Parvaiz Ahmad
- 3** Proteomic analysis of food crops under abiotic stresses in the context of climate change, 43
P. S. Sha Valli Khan, P. Osman Basha, G. Vijaya Lakshmi, M. Muniraja, K. Sergeant and J. F. Hausman
- 4** Transcriptome modulation in rice under abiotic stress, 70
Smita Kumar and Prabodh Kumar Trivedi
- 5** Sulphur: Role in alleviation of environmental stress in crop plants, 84
Dagmar Procházková, Daniela Pavlíková and Milan Pavlík
- 6** Proline and glycine betaine modulate cadmium-induced oxidative stress tolerance in plants: Possible biochemical and molecular mechanisms, 97
Mohammad Anwar Hossain, David J. Burritt and Masayuki Fujita
- 7** Enhancement of vegetables and fruits growth and yield by application of brassinosteroids under abiotic stresses: A review, 124
Bojjam Vidya Vardhini
- 8** Physiological mechanisms of salt stress tolerance in plants: An overview, 141
Hadi Pirasteh-Anosheh, Gholamhassan Ranjbar, Hassan Pakniyat and Yahya Emam
- 9** Heat stress in wheat and interdisciplinary approaches for yield maximization, 161
Sajjad Hussain, Muhammad Jamil, Abdul Aziz Napar, Rida Rahman, Asghari Bano, Fakiha Afzal, Alvina Gul Kazi and Abdul Mujeeb-Kazi
- 10** Effect of elevated CO₂ and temperature stress on cereal crops, 184
Ashutosh Tripathi, Devendra Kumar Chauhan, Gopal S. Singh and Niraj Kumar
- 11** Lipid metabolism and oxidation in plants subjected to abiotic stresses, 205
Adriano Sofo, Antonio Scopa, Abeer Hashem and Elsayed Fathi Abd-Allah
- 12** Physiological response of mycorrhizal symbiosis to soil pollutants, 214
Mercedes García-Sánchez, I. García-Romera, J. A. Ocampo and E. Aranda
- 13** Microbially derived phytohormones in plant adaptation against abiotic stress, 234
Dilfuza Egamberdieva
- 14** Synergistic interactions among root-associated bacteria, rhizobia and chickpea under stress conditions, 250
Dilfuza Egamberdieva, Anvar Abdiev and Botir Khaitov
- 15** Plant secondary metabolites: From molecular biology to health products, 263
L. F. De Filippis
- 16** Medicinal plants under abiotic stress: An overview, 300
Sameen Ruqia Imadi, Alvina Gul Kazi, Abeer Hashem, Elsayed Fathi Abd-Allah, A. A. Alqarawi and Parvaiz Ahmad

- 17** Signalling roles of methylglyoxal and the involvement of the glyoxalase system in plant abiotic stress responses and tolerance, 311
Tahsina Sharmin Hoque, Mohammad Anwar Hossain, Mohammad Golam Mostofa, David J. Burritt and Masayuki Fujita
- 18** Role of sedges (Cyperaceae) in wetlands, environmental cleaning and as food material: Possibilities and future perspectives, 327
Sanjay Mishra, Ashutosh Tripathi, Durgesh Kumar Tripathi and Devendra Kumar Chauhan
- Index, 339