Contents

Preface ix

Contributors xi

1. **Salicylic acid: Biosynthesis, metabolism and physiological role in plants** 1
S. Hayat, B. Ali and A. Ahmad

2. **Effects of salicylic acid on the bioproductivity of plants** 15
Alfonso Larqué-Saavedra and Rodolfo Martin-Mex

3. **Effect of salicylic acid on solute transport in plants** 25
M. S. Krasavina

4. **Role of hormonal system in the manifestation of growth promoting and antistress action of salicylic acid** 69
F. M. Shakirova

5. **Role of salicylic acid in the induction of abiotic stress tolerance** 91
T. Janda, E. Horváth, G. Szalai and E. Páldi

6. **The role of salicylates in *Rhizobium*-legume symbiosis and abiotic stresses in higher plants** 151
Fazli Mabood and Donald Smith

7. **Stress and antistress effects of salicylic acid and acetyl salicylic acid on potato culture technology** 163
H.A. Lopez-Delgado, I.M. Scott and M.E. Mora-Herrera

8. **Salicylic acid and reactive oxygen species in the activation of stress defense genes** 197
Loreto Holuigue, Paula Salinas, Francisca Blanco and Virginia Garretón

9. **The interplay between salicylic acid and reactive oxygen species during cell death in plants** 247
J.F. Dat, N. Capelli, F. Van Breusegem

10. **Salicylic acid as a defense-related plant hormone: Roles of oxidative and calcium signaling paths in salicylic acid biology** 277
Tomonori Kawano and Takuya Furuichi

11. Salicylic acid and local resistance to pathogens 323
Igor V. Maksimov and Lubov G. Yarullina

12. Salicylic acid in plant disease resistance 335
Ratnesh Chaturvedi and Jyoti Shah

13. Transcriptomic analysis of salicylic acid-responsive genes in tobacco BY-2 cells 371
I. Galis and K. Matsuoka

Index 397