Contents

Strategies for Enhancing Alkaloids Yield in Catharanthus roseus
Via Metabolic Engineering Approaches ........................................................ 1
Kexuan Tang and Qifang Pan

In Vitro Biotechnological Production and Pharmacological Studies
of Antileukemic Alkaloids of Catharanthus roseus ................................. 17
Hebert Jair Barrales-Cureño, Petra Andrade-Hoyos,
Alfonso Luna-Cruz, Cesar Reyes-Reyes, Salvador Chávez-Salinas,
and Luis Germán López-Valdez

Plant Efficacy and Alkaloids Production in Sadabahar
(Catharanthus roseus L.): Role of Potent PGRs and Mineral Nutrients ..... 35
M. Naeem, Tariq Aftab, Mohd. Idrees, M. Masidur Alam,
M. Masroor A. Khan, and Moin Uddin

Role of Biotechnology in Alkaloids Production ........................................ 59
Amjad Khalil

Agricultural, Pharmaceutical, and Therapeutic Interior
of Catharanthus roseus (L.) G. Don ............................................................... 71
Md. Abul Barkat, Harshita Abul, and Md. Akhlaquer Rahman

Elicitors Enhance Alkaloid Yield in Catharanthus roseus ....................... 101
Dipti Tonk, A. Mujib, Muzamil Ali, and Nadia Zafar

Catharanthus roseus: The Cancer-Fighting Medicine .......................... 121
D. Sathya Prabhu and V. Devi Rajeswari

In Vitro Studies, Biosynthesis of Secondary Metabolites
and Pharmacological Utility of Catharanthus roseus (L.) G. Don.:
A Review ........................................................................................................ 153
P. Senbagalakshmi, M.V. Rao, and T. Senthil Kumar
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapeutic Efficacy of <em>Catharanthus roseus</em> in Type 1 and Type 2 Diabetes Mellitus in Wistar Rats</td>
<td>201</td>
</tr>
<tr>
<td>Karuna Rasineni, Sudhakara Gujjala, Saisree Sagaree, Malliaiah Putakala, Sasi Bhusana Rao Bongu, Ramesh Bellamkonda, Sreenivasa Reddy Singareddy, and Saralakumari Desireddy</td>
<td></td>
</tr>
<tr>
<td>Biotechnological Interventions to Modulate Terpenoid Indole Alkaloid Pathway in <em>Catharanthus roseus</em> Using In Vitro Tools and Approaches</td>
<td>247</td>
</tr>
<tr>
<td>Priyanka Verma, Shamshad Ahmad Khan, Varsha Parasharami, and Ajay Kumar Mathur</td>
<td></td>
</tr>
<tr>
<td>Vincristine and Vinblastine Anticancer <em>Catharanthus</em> Alkaloids: Pharmacological Applications and Strategies for Yield Improvement</td>
<td>277</td>
</tr>
<tr>
<td>M. Masidur Alam, M. Naeem, M. Masroor A. Khan, and Moin Uddin</td>
<td></td>
</tr>
<tr>
<td>Role of PGRs in Anticancer Alkaloids (Vincristine and Vinblastine) Production</td>
<td>309</td>
</tr>
<tr>
<td>Jagjit Kaur, Apoorva Singh, Teena Pathak, and Kuldeep Kumar</td>
<td></td>
</tr>
<tr>
<td>The Accumulation and Degradation of Alkaloids in <em>Catharanthus roseus</em> Supported by Various External Agents Under Different Environmental Conditions</td>
<td>321</td>
</tr>
<tr>
<td><em>Catharanthus roseus</em>: Detoxification and Hepatic Protection of Aflatoxin B1</td>
<td>331</td>
</tr>
<tr>
<td>S. Patharajan, S. Bala Abirami, R. Elangomathavan, and S. Ramesh</td>
<td></td>
</tr>
<tr>
<td>Potential of <em>Catharanthus roseus</em> (L.) in Phytoremediation of Heavy Metals</td>
<td>349</td>
</tr>
<tr>
<td>V. Subhashini and A.V.V.S. Swamy</td>
<td></td>
</tr>
<tr>
<td>Unraveling the Cumulative Effect of Soil-Applied Radiation-Processed Sodium Alginate and Polyacrylamide on Growth Attributes, Physiological Activities, and Alkaloids Production in Periwinkle [<em>Catharanthus roseus</em> (L.) G. Don]</td>
<td>365</td>
</tr>
<tr>
<td>Asfia Shabbir, Akbar Ali, Yawar Sadiq, Hassan Jaleel, Bilal Ahmad, M. Naeem, M. Masroor A. Khan, and Moin Uddin</td>
<td></td>
</tr>
<tr>
<td><em>Catharanthus roseus</em>: Cultivation Under Stress Conditions</td>
<td>383</td>
</tr>
<tr>
<td>Sanjeev Pandey</td>
<td></td>
</tr>
<tr>
<td>The Study of the Effect of Nickel Heavy Metal on Some Growth Parameters and Production of Alkaloids in <em>Catharanthus roseus</em></td>
<td>399</td>
</tr>
<tr>
<td>Matin ArefiFard</td>
<td></td>
</tr>
</tbody>
</table>
Catharanthus roseus
Current Research and Future Prospects
Naeem, M.; Aftab, T.; Khan, M.M.A. (Eds.)
2017, XII, 412 p. 43 illus., 30 illus. in color., Hardcover
ISBN: 978-3-319-51619-6