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Nota di contenuto	1.Strategies for enhancing alkaloids yield in Catharanthus roseus via Metabolic Engineering Approaches (Kexuan Tang and Qifang Pan) -- 2. In vitro biotechnological production & pharmacological studies of anti-leukemic alkaloids of Catharanthus roseus (Hebert Jair Barrales Cureño, Petra Andrade Hoyos, Alfonso Luna Cruz, Cesar Reyes Reyes, Salvador Chávez Salinas and Luis German Valdez López) -- 3.Plant efficiency and alkaloids production in Sadabahar (Catharanthus roseus L.): Role of potent PGRs and mineral nutrients (M. Naeem1, Tariq Aftab1, Mohd. Idrees, M. Masidur Alam, M. Masroor A. Khan and Moinuddin) -- 4. Role of Biotechnology in Alkaloids Production (Amjad Khalil) -- 5. Agricultural, pharmaceutical & Therapeutic Interior of Catharanthus Roseus (L.) (Md. Abul Barkat1, Harshita and Md. Akhlaquer Rahman) --

6.Elicitation enhances alkaloid yield in Catharanthus roseus (Dipti Tonk, A. Mujib, Muzamil Ali and Nadia Zafar) -- 7. Catharanthus roseus: The Cancer-fighting Medicine (D. Sathya Prabhu, V. Devi Rajeswari) -- 8. In vitro studies, biosynthesis of secondary metabolites and pharmacological utility of Catharanthus roseus (L.) Don. - A review (P. Senbagalakshmi1, M.V. Rao and T. Senthil Kumar) -- 9. Therapeutic efficacy of Catharanthus roseus in Type 1 and Type 2 diabetes mellitus in wistar rats (Rasineni Karuna1, Gujjala Sudhakar, Sagree Saisree, Putakala Mallaiah, Bongu Sasibhusana Rao, Bellamkonda Ramesh, S. Sreenivasa Reddy and Desireddy Saralakumari) -- 10. Biotechnological interventions to modulate terpenoid indole alkaloid pathway in Catharanthus roseus using in vitro tools and approaches (Priyanka Verma, Shamshad Ahmad Khan, Varsha Parasharami and Ajay Kumar Mathur) -- 11. Vincristine and Vinblastine anticancer Catharanthus alkaloids: Pharmacological applications and strategies for yield improvement (Masidur Alam, M. Naeem, M. Masroor A. Khan and Moin Uddin) -- 12. Role of PGRs in anticancer alkaloids (vincristine & vinblastine) production (Jagjit Kaur, Apoorva Singh, Teena Pathak and Kuldeep Kumar) -- 13. The accumulation and degradation of alkaloids in Catharanthus roseus supported by various external agents under different environmental conditions (Mohd Idrees, Israr Ul Hassan, M. Naeem, Akbar Ali, Tariq Aftab, M. Masroor A. Khan) -- 14. Catharanthus roseus: Detoxification and hepatic protection of Aflatoxin B1 (S. Patharajan1, S. Bala Abirami, R. Elangomathavan and S. Ramesh) -- 15. Potential of Catharanthus roseus (L.): phytoremediation of Heavy Metals (V. Subhashini* and A.V.V.S. Swamy) -- 16. Unraveling the cumulative effect of soil-applied Radiation-processed sodium alginate and polyacrylamide on growth attributes, physiological activities and alkaloids production in periwinkle [Catharanthus roseus (L.) G. Don] (Asfia Shabbir, Akbar Ali, Yawar Sadiq, Hasan Jaleel, Bilal Ahmad, M. Naeem, M. Masroor A. Khan and Moinuddin) -- 17. Catharanthus roseus – Cultivation under Stress Conditions (Sanjeev Pandey) -- 18. The study of the effect of nickelheavy metal on some growth parameters and production of alkaloid in Catharantus roseus (Matin Arefi Fard).

Sommario/riassunto

This book studies the production of indole alkaloids in the important medicinal plant Catharanthus roseus (L.) G. Don, commonly known as periwinkle. The anticancer alkaloids, viz. vinblastine and vincristine, are mainly present in the leaves of C. roseus and inhibit the growth of cancer cells by hindering the formation of mitotic apparatus during cell division. Further, vinblastine helps increase the chance of surviving childhood leukemia while vincristine is used to treat Hodgkin’s disease. Great efforts have been made to produce these alkaloids at a large scale by the culture of plant cells. In view of this worldwide demand for commercial use, this book explores how to maximize the production of anticancer alkaloids from C. roseus. This reference book will be helpful for research students, teachers, ethnobotanists, pharmacologists and herbal growers who have a strong interest in this anticancer medicinal plant of paramount importance.