World Academy of Science, Engineering and Technology
International Journal of Bioengineering and Life Sciences
Vol:8, No:12, 2014

New Strategy for Breeding of Artemisia annua L. for a Sustainable Production of the Antimalarial Drug Artemisinin

Authors : Nadali Babaeian Jelodar, Chan Lai Keng, Arvind Bhatt, Laleh Bordbar, Leow E Shuen, Kamaruzaman Mohamed

Abstract : Recently artemisinin (the endoperoxide sesquiterpene lactone) has received considerable attention because of its antimalarial activity. It is isolated from the aerial part of the Artemisia annua L. Artemisinin is very difficult to synthesise also its production by mean of cell, tissue or organ cultures is very low. Presently, only its extraction from A. annua L. plants remains the only source of the drug. The reported yield of artemisinin from leaves of A. annua L. is very low and unstable, with yields typically less than 1% of leaf dry weight. To increase the percentage of artemisinin, researchers have been engaged in developing new varieties. A review concerning the breeding of A. annua L. is presented. The aim of this review is to bring together most of the available scientific research papers about the breeding conducted on the genus A. annua L., which is currently scattered across various publications. Through this review the authors hope to attract the attention of breeders throughout the world to focus on the unexplored potential of A. annua L. species. Also the future scope of this plant has been emphasized with a view of the importance of breeding of A. annua L. for increasing of artemisinin content. By releasing of new cultivar of A. annua L. and cultivation of this plant offers the opportunity to optimize yield and achieve a uniform, high quality product.

Keywords : Artemisia annua L., breeding, artemisinin, cultivation, medicinal plant
Conference Title : ICMAP 2014 : International Conference on Medicinal and Aromatic Plants
Conference Location : Penang, Malaysia
Conference Dates : December 04-05, 2014