



Exploring Plant Cells for the Production of Compounds of Interest

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Biotechnological Production of Antistress Compounds: Current Status and Future Prospects

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Abstract

Stress and stress-related disorders are a major cause of diseases in modern times and contribute to around 75% of all

Application of Radiation for the Management of Mosquito Vectors

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Kiran Bala Bhuyan, Arpita Arsmika Sahu, T. Sarita Achari, and
Tapan Kumar Barik

Abstract

Eradication and elimination of mosquito vector populations have been proved to be the most effective option to reduce the transmission of vector-borne diseases. The vector control with the help of chemical strategies all over the world is complicated and ineffectual with many disadvantages like environmental pollution, effect on non-target species, and resistance selection obstructing its efficacy. Therefore, there is an urgent need for identification of an upgraded plan of action to control those which could be efficacious for growing insecticide and drug resistance. The main focus of this chapter is to revisit control tactics based on the genetics of mosquito population and the current molecular biological technique and field tests that assure to prevent diseases caused by vector through radiation induced sterilization. In most of the research works on genetic control of mosquito vector, both X rays and gamma rays have been used but there is insufficient information about the use of electron beams. Radioisotope Cobalt-60 is regularly used because it is more easily contrived than Caesium-137 for gamma rays. As the handling of pupae is easier than handling the delicate adult mosquitoes, the use of mosquito pupae seems to be the ideal stage for irradiation. Also, the effect of radiation on different biological parameters of mosquito vectors, sterility caused by radiation is discussed in this chapter. The controls of mosquito's trials have failed to attain their goal because of the great reproductive capacity and genomic flexibility of mosquitoes, therefore, there is an urgent need of developing a stable technique for the control of mosquito vector is the call of the hour.

Kiran Bala Bhuyan and Arpita Arsmika Sahu contributed equally

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Book

Full-text available

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3.4.4 Number of books and chapters in edited volumes/books published per teacher during the last five years (5)

3.4.4.1: Total number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings year wise during last five years

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Year of publication	ISBN/ISSN number of the proceeding	Whether at the time of publication Affiliating Institution Was same Yes/NO	Name of the publisher
1	Kiranbalabhuyan	Molecular Identification of Mosquito Vectors and their Management, Springer International (Ed.)	Application of Radiation for the Management of Mosquito Vectors		2021	ISBN 978-981-15-9455-7	YES	Springer International
2	J.N. Patnaik	Exploring Plant Cells for Production of Compounds of Interest, Springer Nature, Switzerland, Pp 171-193 (2021)	Antistress Compounds: Current Status and Future Prospects		2021	ISBN 978-030-58271-5		Springer Nat Switzerland
3.	Balochan Behera	Digital Health in India Evolution of Health Informatics			2021	ISBN - 978-93-91248-12-3		MKSE S.K.C.G. Paralakhemundi

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