ACKNOWLEDGEMENT

I humbly acknowledge with gratitude, pleasure and indebtedness the worthy guidance of Prof. (Dr.) Shiba Prasad Rath. He constantly encouraged me throughout the entire work and has always been methodical, systematic and innovative. He has devoted his time by his intellect guidance and without his untiring supervision this write up could not have seen the light of the day.

I am greatly indebted to Prof. (Dr.) Santi Lata Sahoo, Present Head, and all other former Heads of P. G. Department of Botany, Utkal University, Bhubaneswar for providing me necessary laboratory facilities, and valuable suggestions throughout the progress of work.

I express my heartfelt gratitude and thanks to Prof. (Dr). Pradeep Kumar Chand, P. G. Department of Botany, Utkal University, Bhubaneswar for his valuable suggestions and help for completion of present work.

I express my sincere thanks to my colleagues Dr. (Mrs.) Deepa Srivastava, D.D.U Gorakhpur University, Gorakhpur and Dr. Priyambada R. Biswal (Asst. Prof), Trident Academy of Creative Technology, Bhubaneshwar for their help, co-operation and suggestions throughout the work.

I express my thanks to all the non-teaching staffs of P. G. Department of Botany, Utkal University, Bhubaneswar for their help and encouragement throughout the work.

This work would not have been possible without the moral support and everlasting encouragement extended by Mr. A.K Shukla (my father) and Prof. (Dr). Kalawati Shukla (mother). I am indebted to them for their constant encouragement and support.

I extend my warm regards to my in-laws for their kind help to complete this manuscript especially my husband, Alok Mishra. I also thank my daughter Rajlaxmi Mishra for being the source of inspiration, her loving co-operation and curiosity which doubled my drive for completing the work.

Above all I would like to owe my heartfelt gratitude to the supreme power of God for His blessings to accomplish this manuscript.

(TULIKA MISHRA)