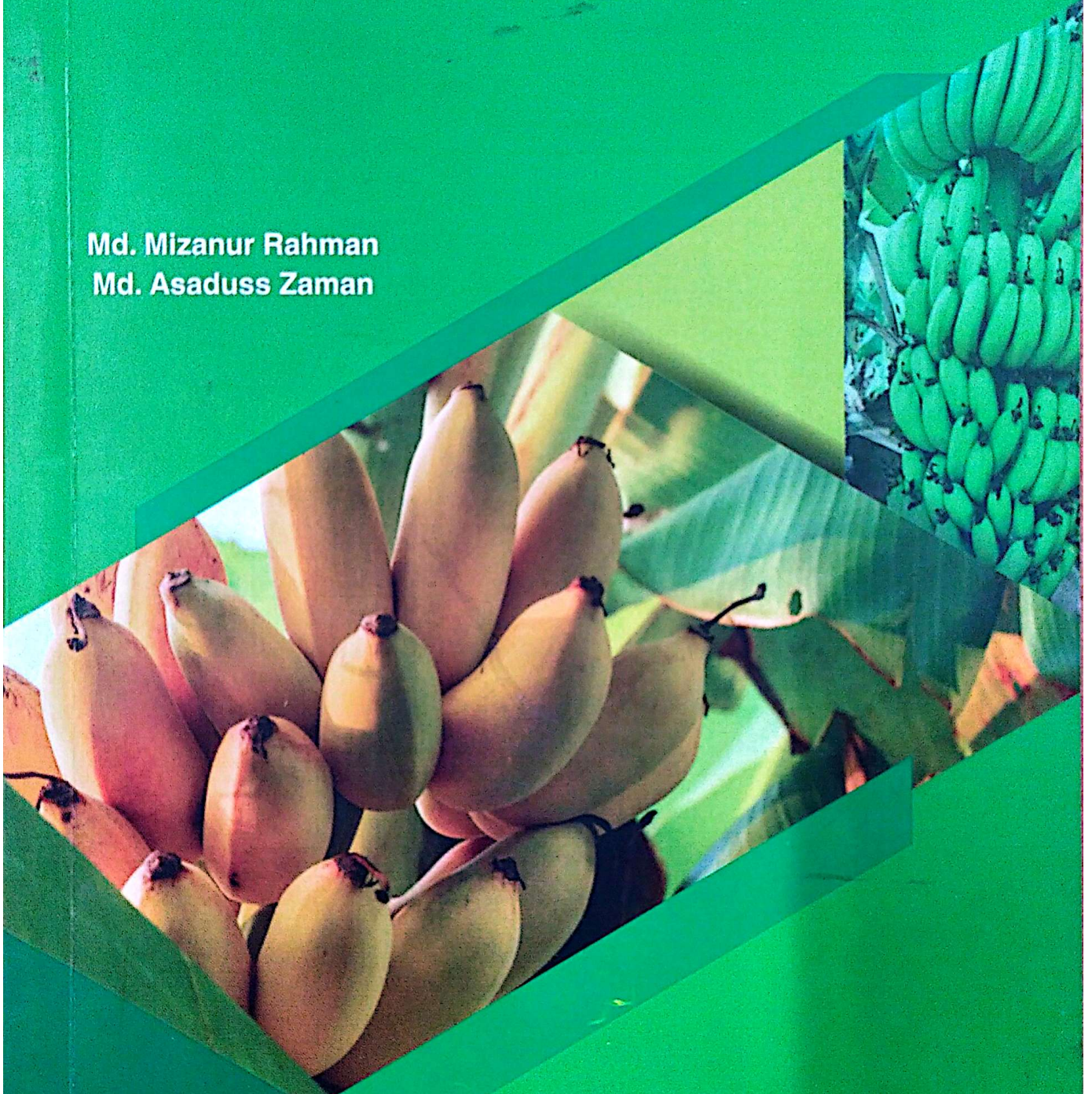


Production of disease free plantlets of Sagor, Sabri, Kobri, Chini Champa, Mehersagar, Agniswar, Gerasundari, Kanthali Kola, BARI Kola-1 cultivars of Banana (*Musa spp.*) through micropropagation

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Started his career as an Assistant Director at the Rural Development Academy, Bogura in November 2004. Since the inception of the RDA Biotechnology laboratory, he has been supervising all the activities including troubleshooting, preparation of production plan, production of plantlets through micropropagation (Potato, Gerbera, Gladiolus, Orchid, Stevia, and Strawberry), acclimatization and hardening for field adaptation of plants, cultivation in the field and marketing of laboratory products. He has expertise in producing different kinds of mushrooms and mushroom products. He has attended several training programs e.g. foundation training, ICT in rural development by CIRDAP; promotion of entrepreneurship through technology transfer by NIMSME, Hyderabad. He is a PRA (Participatory Rural Appraisal) practitioner and certified TQM (Total Quality Management) trainer.



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is working as Deputy Director (Faculty Position) at Rural Development Academy, Bogura since March, 2011. He obtained his graduation in Biotechnology and Genetic Engineering Discipline from Khulna University. He reasonably developed experience of working with different donors and international organizations. Presently he is acting as the In-charge of Biotechnology Laboratory and involve in disease free quality seed production of some commercially important crops such as potato, strawberry, gerbera, banana, orchid, Arabian dates, fig, papaya etc. He is also involved in preparing development project proposal. He has substantial number of publications in different journals, reports, and monographs. His research interest is mainly focused on production of disease free quality varieties of economically important crops. Mr. Asad is actively involved in co-ordination of different training courses, workshops, seminars, conference and conducting sessions for higher officials, different public representatives and grass root level people on various issues of rural development.

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Abstract

The present research was conducted at Biotechnology laboratory of Seed and Biotechnology Center (SBC), Rural development Academy (RDA), Bogura during the period from October 2020 to December 2021 to determine the best combinations of plant growth regulators and other conditions in order to achieve organogenesis and multiplication directly from shoot tips of banana (*Musa spp.*) without callus formation so as to avoid any possibility of undesirable genetic variability. MS medium supplemented with various combinations of cytokinins (6-Benzylaminopurine and Indole-3-acetic acid) were used in order to obtain the best combinations for multiple shoot induction. The best results found in combination with MS + 7.5 mg/l BAP + 0.5 mg/l IAA. Sub culturing the formed buds on liquid agitated multiplication medium supplemented with the above mentioned plant growth hormones have given the optimum average of buds number. For root initiation full strength MS medium supplemented with different levels of IBA (0, 0.5, 1.0 and 1.50 mg/l) and IAA (0, 0.5 and 1.0 mg/l) were used. Root numbers varied with different concentrations of IBA and IAA. The highest numbers of roots were produced by 0.5 mg/l IAA + 0.5 mg/l IBA. The highest length (2.93, 4.63 and 5.88 cm) was recorded at 10, 20 and 30 DAI in the same treatment which was statistically significant. Meristem derived rooted plantlets transferred to poly bags containing 1:1 (ground soil : cow dung) mixture after 10 days hardening in room temperature (28-30°C) and established plantlets finally planted to main field.

Key Words : Regeneration, micropropagation, plantlet.