



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



شبكة المعلومات الجامعية
@ ASUNET



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

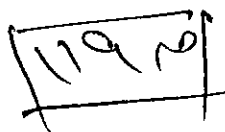
في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

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15-25- c and relative humidity 20-40%

بعض الوثائق الأصلية تالفة

بالرسالة صفحات لم ترد بالاصل

PRODUCTION OF VIRUS-FREE PLANTS



By

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B.Sc. (Agric. Microbiology), Ain Shams University (1989)

M.Sc. (Agric. Virology), Ain Shams University (1994)

A thesis submitted in partial fulfillment

of

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DOCTOR OF PHILOSOPHY

in

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**Department of Agric. Microbiology
Faculty of Agriculture
Ain Shams University**

2000

The first part of the paper discusses the importance of understanding the local context in which a project is implemented. This includes a thorough understanding of the community, its culture, and its needs. It is essential to engage with the community from the very beginning, to ensure that the project is relevant and sustainable.

The second part of the paper explores the challenges of implementing a project in a resource-poor environment. This includes issues such as lack of funding, limited access to services, and a high level of poverty. It is important to develop creative solutions to these challenges, such as using local resources and involving the community in the implementation process.

The third part of the paper discusses the importance of monitoring and evaluation. This involves setting up a system to track the progress of the project and to assess its impact. It is essential to involve the community in this process, to ensure that the project is meeting their needs and that they are taking ownership of it.

The fourth part of the paper discusses the importance of sustainability. This involves ensuring that the project is financially viable and that it can continue to benefit the community long after the initial implementation phase. This may involve developing a business plan or finding a way to generate income to cover the costs of the project.

The fifth part of the paper discusses the importance of communication. This involves keeping the community informed about the project and its progress. It is essential to use a variety of communication methods, such as meetings, posters, and radio, to reach as many people as possible.

The sixth part of the paper discusses the importance of partnerships. This involves working with other organizations and individuals who share the same goals and objectives. This can help to pool resources and expertise, and to increase the impact of the project.

The seventh part of the paper discusses the importance of flexibility. This involves being able to adapt the project to changing circumstances. It is essential to have a plan B, in case the original plan does not work out.

The eighth part of the paper discusses the importance of patience. This involves understanding that the process of implementing a project can take a long time. It is essential to stay motivated and to keep working towards the goal, even when progress seems slow.

The ninth part of the paper discusses the importance of celebrating success. This involves recognizing the achievements of the community and the project. This can help to build morale and to encourage others to get involved.

The tenth part of the paper discusses the importance of learning from experience. This involves reflecting on what has worked and what has not worked, and using this information to improve the project. It is essential to share this information with the community and with other organizations.

APPROVAL SHEET

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ABSTRACT

Sameh Dif Allah Thabet Attia "Production of Virus-free plants", unpublished Doctor of Philosophy Dissertation, University of Ain Shams, Faculty of Agriculture, Department of Agric. Microbiology, 2000.

PART I : Antisera preparation of banana bunchy top virus (BBTV) and banana mosaic virus (BMV).

Banana bunchy top virus (BBTV) and banana mosaic virus (BMV) were isolated from natural infected banana plants.

BBTV and BMV were partially purified using 10% polyethylene glycol and 1% NaCl and 6% PEG and 2% NaCl respectively and then highly purified using either differential centrifugation, or gel electrophoresis. The virus yield was 0.11 mg/kg infected tissue in case of BBTV, while in case of BMV it was 3.156 mg/kg infected tissue.

Electron microscopy examination showed that BBTV & BMV appeared to be spherical particles with 18-20 nm and 27-29 nm in diameter, respectively.

The induced antisera of highly purified BBTV and BMV using differential centrifugation and gel electrophoresis methods showed positive reaction against BBTV and BMV when examined using agar double diffusion test (Ouchterlony), and double antibody sandwich enzyme linked immunosorbent assay (DAS-ELISA).

PART II : Factors affecting production of virus-free plants.

Meristems of infected banana plants with BBTV and BMV were exposed to different treatments : meristem culture, thermotherapy and chemotherapy in order to obtain virus-free banana plantlets.

Data obtained showed that, whenever the infected meristems size was increased, the percentage of resulted virus-free plantlets were decreased.

Exposure the infected banana rhizomes with BBTv or BMV to dry-heat could be produce some virus-free banana plantlets in case of BMV but not in case of BBTv, while exposure the infected rhizomes to 40°C for 1,2 and 3 months followed by meristems excision with different size lead to increasing of the resulted virus-free plantlets.

6-benzyle-aminopurine have no effect on BBTv eradication, while it have a slight effect on the eradication of BMV from banana meristems.

PART III : Micropropagation of healthy banana plantlets.

Data of establishment of aseptic culture illustrated that: The growth rate of the cultured meristems was increased in case of excised meristems from plantlets derived by tissue culture, than from banana suckers, the best treatment of sterilization is to sterilize the shoot tips before meristems excision using hydrogen peroxide 10% for 20 minutes, the best result of preventing the browning was obtained by cultured the explants on liquid medium containing antioxidant.

Data of adaptation stage illustrated that the highest survival percentage of adapted plantlets was obtained using medium consists of sand (25%) + peat moss (12.5%) + clay (12.5%) + fine wood sawdust (50%).

Key Words: Banana bunchy top virus; Banana mosaic virus; Isolation; Electron microscope; Purification; Antiserum production; Virus eradication; Meristem size; Thermotherapy; Chemotherapy; Micropropagation.

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