AN IMPORTANCE OF VIRUS FREE SEED PRODUCTION SYSTEMS IN GEORGIA

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ABSTRACT

Ongoing Climate change and weather constraint's due to greenhouse-gas emissions is becoming increasingly important as a driver of loss Agrobiodiversity and the degradation of ecosystem services. The continued increase in greenhouse gases not only has profound implications for average temperatures, but also for precipitation, sea-level rise, ocean acidification and the frequency and magnitude of extreme events such as floods, droughts and wildfires.

Future climatic perturbations will inevitably have major consequences for natural and human systems, severely affecting biodiversity and incurring very high socio-economic costs on endemic plants and developing countries are among the most vulnerable Countries list.

INTRODUCTION

From a human perspective, the rapid climate change and accelerating biodiversity loss risks human security (e.g. a major change in the food chain upon which we depend, water sources may change, recede or disappear, medicines and other resources we rely on may be harder to obtain as the plants as they are derived from may reduce or disappear, etc.). Loss of biodiversity appears to impact ecosystems as much as climate change, pollution and other major forms of environmental stress, according to a new study from an international research team. In many developing countries, yields of root and tuber crops are significantly reduced below their potential due to seed-borne diseases and pests. Because these crops are generally clonally reproduced from cuttings, roots, or tubers, it is relatively easy for diseases to be transmitted through seed from generation to generation. The development and transfer of new methods and technologies for producing disease-free clonal seed can overcome this constraint and help unlock the significant yield potential of these crops.

MATERIAL AND METHOD

In vitro and in vivo Plants virus free Propagation also can play an important role in protecting conservation and restoration of most threatened Endemics and Agro Biodiversity. Loss of biological diversity of Vegetables, some fruits and trees due to species extinctions is going to have major impacts on our planet, better way prepare ourselves is to deal with them and prepare these plants in vitro virus free Banks. A number of disease-causing pathogens of vegetables, fruits and fruit trees, however, can remain as main problem of Farmers and Large Scale Industries'.

Main source is work on tissue cultures, for these plants, that are supported under sterile conditions in the laboratory, has revolutionized nuclear seed stock development. Most certification agencies currently operate tissue culture laboratories that produce the initial stocks of pathogen-free planting material. A number of private companies throughout the EU also produce meristem-derived, pathogen-free seed. These companies either market their seed stocks locally or on a national scale. Country high dependence on virus

free Seed is a big problem and local Farmers has limited access to buy them but available they can be produced local Laboratories.

RESULTS AND DISCUSSIONS

Conservation of Agrobiodiversity can, however, also help reduce the effects of climate change. Intact ecosystems are usually better able to provide ecosystem services to support adaptation, and the conservation of such ecosystems and the restoration of degraded ecosystems is an important element for Plants virus free propagation for accepting high resistance plants on different viruses, diseases and pathologies.

There have been instances when the disease problem was not detected until the seed lot was purchased by a commercial grower, resulting in severe economic losses. This resulted in the development and adoption of new laboratory testing and seed stock multiplication techniques that have dramatically affected the quality of certified seed potatoes. Today, nearly all certified virus free seed stocks originate from meristem tissue culture plantlets produced under laboratory conditions. Studies over the last two decades have demonstrated that more biologically diverse ecosystems are more productive. As a result, there has been growing concern that the very high rates of modern extinctions – due to habitat loss, overharvesting and other human-caused environmental changes – could reduce nature's ability to provide goods and services like food, clean water and a stable climate.

CONCLUSIONS

In in vitro culture, plants are multiplicated by cloning the plants themselves. In such manner, we can obtain a large number of specimens identical to each other and to the specimen introduced in vitro at the beginning of the process. For multiplication, the vegetative reproduction capacity of plants is used. To control this vegetative multiplication, plant hormones, particularly cytokine’s, are used. Day by day the Propagation of some plants has increased tremendously due to the demand for them as Farmers, Ag Cooperatives, large scale companies and industries, in addition to their usage for interior and exterior landscaping purposes. in vitro propagation techniques, which provide disease-free mass production options, have started to be used increasingly to fulfil the demand for these species in the market. In this study, the results of in vitro propagation studies for some economically valuable plants are provided.

Well developed in vitro propagation techniques are currently available in Georgia to help growers meet the demand of the virus free plants industry and these protocols are designed to provide optimal levels of carbohydrates, organic compounds (vitamins), mineral nutrients, environmental factors (e.g. light, gaseous environment, temperature, and humidity) and growth regulators required to obtain high regeneration rates of many plant species in vitro and thereby facilitate commercially viable micro propagation. Well-defined cell culture methods have also been developed for the production of several important secondary products. An overview of the regeneration of medicinal plants by direct and indirect organogenesis and by somatic embryogenesis from various types of explants is presented, and the use of these techniques combined with other biotechnological approaches to improve medicinal plants through somaclonal variation and genetic transformation is reviewed.

Once the laboratory has produced the desired number of plantlets for each variety, they are ready for tuber production. These plantlets can be planted outdoors directly into the

field if great care is taken but are most commonly planted into beds in a greenhouse or screen house for minituber production. Under the controlled conditions of a greenhouse or screenhouse, the plantlets can be carefully cultivated and monitored. Several months, after planting, minitubers can be harvested and stored until the following growing season. Virusfree plants seed production has biological and economic benefits for Farming.

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