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Study of low cost nursery technology of banana seeding by small scale growers

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Abstract

In this paper the Small Scale growers of banana can minimise the operational cost of cultivation of banana by Producing their own banana seedling in their own farm without working about inconsistent supply from private nurseries and buying expensive qualities banana seedling by tissue culture supplies. The small scale grower can produce their own quality banana seedling by using low cost nursery technology. It does not require specific lab and it can be established on own small farm and the growers can have readily available and easily accessible of banana seedling. A part of it, insuring of own nursery material it can also help to reduce the operating cost throughout every cycle of nursery.

Keywords: low cost nursery technology, banana seeding, small scale growers

Introduction

Banana is fourth most important fruit crop in the world which is grown in 132 countries worldwide more than any other fruit crop every grown year. It is believed that banana is originated from that south East Asia and it is well known among tropical countries around the world through the trading activities.

Banana is important fruit crop cultivated in Malaya sia However, there are constraints in the cultivation of banana when it caused it mostly reduces Banana production. The constraints and due to the diseases that caused damages to the banana tree to the banana seedling such as banana suckers often harbored pest and disease. Thus solution of the problem is that we need to produce tree free disease seedling by using Bio-Technological Process.

Currently, tissue culture is a well-known technique for mass propagation of banana with the help of free disease planting material. Tissue culture technique is also known as micro propagation technique which is used to propagate free disease technique planting materials of banana and also as a tool of mass propagation of the banana planting materials, in order to give consistent supply of banana planting materials. Tissue culture technique requires expensive instrumentals and also requires sophisticated technique, skill and caves to handle small holders. Small holders always cultivate banana on small scale. Normally, farmers get the banana seedling from tissue culture seedling which is sometimes expensive and susceptible to scorching under prolongs of exposure to direct sunlight during the transportation and handling. It is due to the requirement in the propagation of banana planting material through tissue culture, the small scale growers need to spend a lot of money for the lab establishment and attending the training for the tissue culture practices. Thus, the farmers requires affordable and easily accessible banana planting materials.

Further, there are no formal standards to regulate banana planting material using suckers as an alternative to reduce the lost of production rather than buying tissue culture banana seedlings. However, these suckers are prone to pest and disease attack although it is easily accessible. In conventional propagation there are two types of banana suckers being used; Sword sucker and water sucker sword suckers are recommended because it has better output yield. However water suckers is less suitable to be used as planting material because of its low quality. Thus a simple and cheaper technique is needed to produce banana seeding that have equivalent quality to tissue culture planting material.

Corm nursery technique for mass propagation banana seedling was innovated to overcome the problems of.

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Corm nursery technique is a macro-propagation method of banana which will not only help the small holder to cultivate the banana but they can also generate their income from producing banana seedling. Corm nursery technique of banana can provide the small holder withhold availability and accessibility of banana seedling. This technique can be installed in their farm and by performing this technique can farm.

They can mass propagate banana seedling in faster period. This macro-propagation technology can use while suckers; large pieces of parent corms or sword suckers to produce planting material.

In corm nursing technique, the material used in banana corm. This technique consists of several parts, corm preparation, corm seedling in poly bag and stacking of corm poly. In each technology, selection is made to grade a better quality of banana planting material. In conventional propagation of banana, whole one suckers is used while giving high growth rate but produce les. In corm nursery technology a whole one suckers corm nursery technique can mass propagate or not based on seedling emergence (emergence) Percentage and number of seedling produced and to identify growth performance of new incident from corm nursery technique.

It is important food crops in the world as well as in India. Commercial production of micro propagated banana is now common in many countries and it is estimated that 25 million plants are produced world-wide each year. One of the most important factors governing the in vitro shoot multiplication is largely determined by the composition of the culture medium (Roshid *et al*, 2002). Murashige and skoog (1962) is widely used for banana Propagation and a critical factor involved in the cost of the culture medium which required chemical that are often expensive in order to increase the tissue culture technology in Banana farming innovative approach are needed to lower the cost of micropropaguly production. Banana plant production via low cost technology in which cost reduction is achieved by improving process efficiently and better utilization of resources is reported by Savangikav (2002). Low cost option should lower the cost of production without compromising the quality of the micropropagules and plants (Prakash *et al*, 2002)

it is necessary to develop low cost technologies by improving the process efficiently and better utilization or resources. Keeping the above facts in view. This study was aimed to reduce the cost of banana tissue culture nutrients by using alternative nutrients sources.

Materials and Methods

Cost Analysis: The cost of each compound used was calculated based on the quantities used per liter of the medium. Amount used in culture medium (g) \times price of amount bought (Rs.) / Amount bought (g) the differences in cost between the conventional and alternative nutrient sources were then determined and their percentages evaluated.

Plant Materials: In the present study, Banana Vav, Pooyan and Months maintained in the college garden were used as a sword of mother plant and in this, the sword suckers were used as a source material.

Media Preparation: Two types of media was prepared, one is conventional Murshige and skoog (1962) media which is used as a control and the other media.

Technology Developments

- i) **Cleaning Stertication of the corm:** The selected banan corm were steritised in to kill micororganism insect and nematode. The corms were soaked into sodium hypochloride with 50% concentration for 15 minutes and were washed with placin water. After the sterkcation process, the treated corms were exposed to the sunlight for drying process of I day.
- ii) **Corm nursery technology:** The treated corm were graded according to size and then it was sliced horizontally from side of the corm the treated corms were layout on the bed with the mixture of coco peat and compost with the rato 3:1. The bed with established treated corms was then corened with polythene tarp (EP) which it creates the dark environment and retain the humidity.

Conclusion

With the simple technique of corm nursery technique. It is a low cost technique which could help the small scale grower to produce their own banana. Planting material for banana cultivation without warring to buy expensive and good quality banana seedling, Besides that, this technique is on farm planting material production system which it helps the small scale growers in terms of readily available and easily accessible of the banana seedling. Moreover, they create their own enterprise by selling the banana seedling apart from banana cultivation. Over all, this technique can be implemented to help in poverty eradication program.

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