



Plagiarism Checker X Originality Report

Similarity Found: 6%

Date: Wednesday, January 23, 2019

Statistics: 94 words Plagiarized / 1494 Total words

Remarks: Low Plagiarism Detected - Your Document needs Optional Improvement.

Agroradix Vol. 1 No.1 (2017) ISSN : 2621-0665 90 Replanting, Purification, and Preservation of Cercospora Dian Eka Kusumawati dan Istiqomah Program Studi Agroteknologi Fakultas Pertanian Universitas Islam Darul ' Ulum Lamongan Korespondensi : dianeka@unisda.ac.id ABSTRACT Cercospora is a group of Ascomycota fungi undergo meiosis after zygote formation of the short-lived and produce meiospores with the formation of free cells in a meiosporangium called ascus. Ascomycota indicates sexual compatibility bipolar and have cell walls composed of two layers (bi-layered).

Phylogenetic tree **based on 18S rDNA sequences** showed that the Ascomycota and Basidiomycota have divergence from one another in the Paleozoic era, about 500 million years ago. Cercospora fungus is also a fungus that can cause disease is quite common in plants. In culturing the fungus cercospora there are some processes that do the replanting, purification and preservation.

Replanting isolate of the fungus Cercospora replanting which is the work of moving the fungus Cercospora isolates from the old medium into a new medium with a very high level of accuracy. In this case replanting process is done by using the method of puncture. Purification is a process of purifying the fungus Cercospora isolates from other microorganisms (fungi and bacteria) who participated grow during the isolation process, usually done by taking the hyphae **at the very end of the** isolates.

Preservation is the storage and maintenance activities of the fungus Cercospora isolates using glycerol solution which will then be stored in the refrigerator in a certain period.

Keyword: fungi, cercospora, replanting, purification, and preservation INTRODUCTION Fungi Ascomycota zygotes undergo meiosis after the formation of the short-lived and

produce meiospores with the formation of free cells in a meiosporangium called ascus.

Ascomycota indicates sexual compatibility bipolar and have cell walls composed of two layers (bi-layered). Phylogenetic tree based on 18S rDNA sequences showed that the Ascomycota and Basidiomycota have divergence from one another in the Paleozoic era, about 500 million years ago. (Semangun, 2001).

Ascomycota is the defining characteristic of these fungi produce sexual spores in ASKI (single, ascus) sac-like, in contrast to the zygote fungi, sac fungi, in part contain the likelihood of their sexual stages in the macroscopic fruit bodies, or ascocarpus.

Ascomycetes reproduce asexually by producing asexual spores in very large quantities, which are often dispersed by wind.

Asexual spores are produced on the tip of hyphae, often in long chains or in groups. Spores are not formed in the sporangia, as well as on Zygomycota. Spores called conidia open like that, from the Greek word which means "dust" (Hollyday, 1980) As with other microorganisms cercospora is a fungus that can be bred through pure breeding with growing media such as PDA.

Microorganism growth medium is a material consisting of a mixture of nutrients (nutrients) required for the growth of microorganisms. Microorganisms utilize the nutrients in the form of media of small molecules that are assembled to construct components of cells. With the growth media can be done to isolate pure cultures of microorganisms and also manipulate the composition of growth media. (Indra., 2008).

Replanting of fungi or bacteria is the work of moving the fungus / bacteria from an old medium to a new medium with a very high level Agroradix Vol. 1 No.1 (2017) ISSN : 2621-0665 91 of accuracy. For the first replanting that all the existing tools in conjunction with a medium to keep it sterile, it is to avoid any contamination (Dwijoseputro, 1998).

Purification was purified from fungi and other microorganisms (fungi and bacteria) that participate to grow during the isolation process. The results of purification are pure fungal isolates. Preservation is the storage and maintenance of microbial activity within a specified period. The method chosen depends on the nature and purpose of preservation of microbes.

MATERIALS AND METHODS Replanting These methods include: preparation of the equipment to be used as LAF, needle stem loop, Bunsen burners, tissue, labels, masks, media PDA / MEA, alcohol, fungal isolates, parafilm. Replanting done inside, after the

LAF is ready to use input devices and materials to be used in subsequent LAF wear a mask and spraying alcohol on hand to keep it sterile. Needle- shaped heating loop Bunsen burner until the rod with a really hot, then take the media PDA / MEA.

After that take the isolates on the tube to the needle shaft use who do near burner Bunsen, who had been taken earlier isolates transferred to PDA media / new MEA, the transfer is done near the Bunsen burner, after the isolates were transferred to new media and then sealed and given parafilm the appropriate label. Purification Using a light microscope to isolate the fungus is a microscopic view so it looks hypha at the very outside, then take the hyphae of the fungus with a needle stem loop that is heated in the outer part because of the outer portion is the most good for the purification and has the smallest percentage for contamination , after taking the hyphae of the fungus isolates were then put on a PDA / MEA, after the isolates were transferred to the PDA / MEA is then sealed with parafilm and labeled accordingly.

Preservation Preservation of fungi using a solution of glycerol and performed in the first LAF isolates fungus that is taken to be preserved and the straw is cut into pieces less than 5cm and make sure the straw is already sterilized, then create a block on the isolates by using a straw block for a total of 10 isolates . Straw fuel is already in use and take a new straw is inserted with a toothpick in it to take the isolates that have been block earlier by inserting a straw into the block as much as 5 to 1 glycerol, then take a small bottle of liquid glycerol on the already available and include isolates contained in the straw into the liquid glycerol with the aid of a toothpick. Once inserted in a glycerol solution bottle is then labeled and put in refrigerator for further storage.

RESULTS AND DISCUSSION Replanting Based on the literature (Winarni, 1997) replanting microorganisms can be done by several methods such as scratch method, stocking, puncture, and castings. By looking at how replanting above are included in the puncture method is by way of dripping the needle loop in which there are inoculum, then put in the new media to cultivate a microorganism. Picture 1. Isolates of the fungus *Cercospora* replanting *Agrogradix* Vol. 1 No.1

(2017) ISSN : 2621-0665 92 Purification Based on the literature (Anonymous, 2011e), which is purification / refining of these isolates were able to do some of the techniques of isolation technique and the technique calls monospore hyphae. Monospore isolation technique is one of the purification techniques are performed by isolating a single spore or take a single spore to be moved (inoculated) on the new medium. Monospore isolation technique requires high skills into practice, because it takes foresight in transferring a single spore in a new medium.

While the technique is the technique of hyphae making purification is done by taking some collection of fungal hyphae to be moved to a new medium. Hyphae retrieval technique is relatively easier than the isolation monospore. Picture 2. Isolates of the fungus *Cercospora* purification Preservation Storage of microorganisms in the refrigerator temperature of about -20 ° C to -85 ° C (cryopreservation / cryopreservation) is a good preservation method for most fungi, bacteria, and viruses.

One of the storage system is the simplest and most popular for fungi and bacteria involves the use of porous ceramic beads (cryobeads) are suspended in a cryopreservation fluid, such as glycerol, in a small plastic bottle. Once inoculated with the culture, the excess solution should be taken using sterile pipette and the vial was kept in the refrigerator.

Storage so that the method can survive long enough and well used to preserve isolates of the fungus *Cercospora*. Picture 3. Isolates of the fungus *Cercospora* preservation CONCLUSIONS *Cercospora* fungus is a fungal group Ascomycota zygotes undergo meiosis after the formation of the short-lived and produce meiospores with the formation of free cells in a meiosporangium called askus.

Cercospora fungus is also a fungus that can cause disease is quite common in plants. Replanting process is fungus / bacteria that is the work of moving the fungus / bacteria from an old medium to a new medium. Purification is a process of purifying the fungi / bacteria from other microorganisms (fungi and bacteria) that participate to grow during the isolation process, Preservation is a storage and maintenance of microbial activity within a specified period. REFERENCES Dwidjoseputro, D. 1998. Dasar-Dasar Mikrobiologi.

Djambatan : Malang. Hollyday, P. (1980), Fungus Diseases of Tropical Crops. Cambridge Univ. Press, Cambridge, 607 pp. Indra., 2008, <http://ekmon-saurus/bab-2-Media-pertumbuhan/.htm> . diakses pada tanggal 08 maret 2009, Makassar. Semangun, H. 2001. Pengantar Ilmu Penyakit Tumbuhan. Gadjah Mada University Press. Yogyakarta. 754 hlm. Winarni, D. 1997. Diktat Teknik Fermentasi. Program Studi D3 Teknik Kimia FTI-ITS : Surabaya.

INTERNET SOURCES:

1% - <https://www.futuremedicine.com/toc/bem/1/1>

1% - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3390824/>

1% - <https://www.sciencedirect.com/science/article/pii/S1087184507000898>
<1% -
<https://www.studyblue.com/notes/n/bio-111-study-guide-2011-12-glogowski/dec9730956>
<1% - <https://quizlet.com/101538824/classification-of-organisms-flash-cards/>
<1% - <https://quizlet.com/181543593/campbell-biology-chapter-31-fungi-flash-cards/>
1% -
<https://courses.lumenlearning.com/boundless-microbiology/chapter/culturing-bacteria/>
<1% - https://en.wikipedia.org/wiki/Living_cells
<1% - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4846335/>
<1% - https://issuu.com/aestheticsjournal/docs/aesthetics_november_2016
<1% -
http://www.tulipgroup.com/Common_New/HS_magazine_PDF/Hygiene_sciences%204.pdf
<1% - <https://id.scribd.com/doc/94454909/Merck-Microbiology-Manual-12th>
<1% - <https://quizlet.com/6305663/micro-test-flash-cards/>
<1% - <https://www.sciencedirect.com/science/article/pii/S0079642512000734>
<1% -
http://www.academia.edu/13164806/New_isolation_method_for_endophytes_based_on_enzyme_digestion
1% -
http://www.agriculture.gov.au/SiteCollectionDocuments/animal-plant/plant-health/publications/plant-pathogen/management_of_plant_pathogen_collections_english.doc