

Pengaruh pemberian protektan dimetil sulfoksida (DMSO) 5% terhadap delapan strain nostoc [Vaucher 1803] Bornet et Flahault 1886 yang dipreservasi dengan metode freezing (-80oC) = The effect of protectant dimethyl sulfoxide (DMSO) 5% for eight strains nostoc [Vaucher 1803] Bornet et Flahault 1886 that preserved by freezing methods (-80oC) / Regy Ineke Ridart

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Abstrak

ABSTRAK

Preservasi koleksi kultur Nostoc dilakukan mengingat Nostoc merupakan salah satu mikroalga tanah yang penting dan berguna. Metode preservasi yang umum digunakan untuk Nostoc adalah dengan subkultur berkala dan freezing. Delapan strain Nostoc yang digunakan dalam preservasi dengan metode freezing pada suhu (-80oC) adalah CPG8, CPG24, BAD5, GIA13a, GIA12-03, TAB7d, BTM6-01 dan TAK23.

Penambahan protektan intraseluler DMSO 5% dilakukan untuk mengurangi efek dari proses freezing (cold stress) pada Nostoc. Sebagai pembanding, delapan strain tersebut juga dipreservasi tanpa menggunakan protektan (kontrol negatif) dalam medium BG 11 bebas unsur nitrogen, kemudian dipreservasi dalam deep freezer (-80oC) selama 7 hari (H7) dan 90 hari (H90). Hasil menunjukkan terdapat variasi respon tumbuh strain-strain Nostoc setelah dipreservasi. Strain yang dipreservasi menggunakan protektan DMSO 5% menunjukkan selisih diameter koloni yang lebih besar, kerusakan filamen lebih sedikit dan kadar klorofil lebih tinggi dibandingkan kontrol negatif.

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ABSTRACT

Preservation of culture collections Nostoc done considering that Nostoc is one of microalgae soil that important and useful. Preservation methods commonly used for Nostoc is with periodic subculture, but that methods have short comings vulnerable to loss of genetic stability. Beside that, freezing method is commonly used for Nostoc preservation. Eight Nostoc strains used in preservation by freezing method at temperature -80oC are CPG8, CPG24, BAD5, GIA13a, GIA12- 03, TAB7d, BTM6-01 and TAK23. The addition of the intracellular protectant DMSO 5 % was done to decrease the effects of freezing (cold stress) in Nostoc. For comparison, eight strains were also preserved without using protectant (negative control) in BG 11 nitrogen free medium, then preserved in a deep freezer (-80oC) for 7 days (H7) and 90 days (H90). Results showed variation in response to growing strains Nostoc after preservation. Strains were preserved using DMSO 5% protectant showed difference of colony diameter, filament has less damage and has higher chlorophyl value compared with negative control.