KOMBINASI ZAT PENGHAMBAT PENCOKLATAN DAN SUKROSA TERHADAP PERTUMBUHAN PLANLET PISANG MAS KIRANA (*Musa acuminata* C.) SECARA *IN VITRO*

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ABSTRAK

Pisang Mas Kirana *(Musa acuminata* C.) adalah salah satu tanaman buah tropis yang sudah populer di masyarakat, yang sangat potensial dikembangkan di Indonesia. Perbanyakan pisang secara vegetatif dapat dilakukan secara kultur jaringan. Permasalahan kultur jaringan pisang adalah pencoklatan pada media akibat zat fenolik sehingga perlu dilakukan penambahan zat penghambat pencoklatan. Penelitian ini dilakukan untuk mengetahui kombinasi pemberian zat penghambat pencoklatan dan sukrosa terhadap pertumbuhan planlet pisang mas kirana. Penelitian dilaksanakan di Laboratorium Bioteknologi Fakultas Pertanian Universitas Pembangunan Nasional "Veteran" Yogyakarta dimulai pada bulan Maret - Juni 2017. Metode penelitian dengan RAL (Rancangan Acak Lengkap) dua faktor + 1 kontrol. Faktor pertama terdiri atas 3 aras yaitu PVP 75 g/L, Vitamin C 0,50 ppm, Arang Aktif 1g/L ,sedangkan faktor kedua terdiri atas 3 aras yaitu sukrosa 15 g/L, 20 g/L dan 25 g/L. Setiap perlakuan diulang sebanyak 3 kali. Data diuji dengan anova dan uji dengan DMRT pada taraf 5%. Hasil penelitian menunjukkan bahwa tidak terdapat interaksi antara zat penghambat pencoklatan dan konsentrasi sukrosa pada pertumbuhan planlet. Pemberian zat penghambat pencoklatan dan sukrosa pada media MS nyata lebih baik dibandingkan kontrol ditunjukan pada persentase planlet hidup, panjang akar, jumlah tunas, bobot kering, tingkat pencoklatan. Pemberian zat penghambat pencoklatan Vitamin C menghasilkan jumlah tunas, berat basah, berat kering lebih tinggi dibandingkan dengan PVP (polyvinylpyrrolidone) dan arang aktif. Penambahan sukrosa dalam konsentrasi 20 g/L dan 25 g/L nyata lebih baik dibandingkan dengan pemberian konsentrasi 15 g/L, ditunjukan pada pertumbuhan panjang akar.

Kata Kunci : *Pisang mas kirana, Kultur jaringan, Zat Penghambat Pencoklatan ,Sukrosa*

COMBINATION OF SUBSTANCES INHIBITING THE GROWTH BROWNING AND SUCROSE PLANLET MAS KIRANA BANANA (*Musa acuminata* C.) IN VITRO

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ABSTRACT

Banana Mas Kirana (*Musa acuminata* C.) is one of the most popular tropical fruit plants in the community, which is very potential to be developed in Indonesia. Propagation of vegetative banana can be done by tissue culture. The problem of banana tissue culture is browning on the media due to phenolic substances so it is necessary to add browning inhibitors. This research was conducted to find out the combination of browning and sucrose inhibition on the growth of plantlet of banana mas kirana. The research was carried out at the Biotechnology Laboratory of the Faculty of Agriculture, University Pembangunan Nasional "Veteran" Yogyakarta beginning in March - June 2017. Research method with RAL (Complete Random Design) two factors + 1 control. The first factor consisted of 3 levels: PVP 75 g/L, Vitamin C 0,50 ppm, Active Charcoal 1g/L, while the second factor consisted of 3 levels, sucrose 15 g/L, 20 g/L and 25 g/L. Each treatment was repeated 3 times. Data were tested with anova and tested with DMRT at 5% level. The results showed that there was no interaction between browning inhibitors and sucrose concentration on plantlet growth. Awarding of browning and sucrose inhibitors on MS medium was significantly better than controls shown in percentage of live planlet, root length, shoot number, dry weight, browning level. Awarding of browning inhibitors Vitamin C results in the number of shoots, wet weight, higher dry weight than PVP (polyvinylpyrrolidone) and activated charcoal. The addition of sucrose in concentrations of 20 g/L and 25 g/L was significantly better than of 15 g/L concentrations, shown in root length growth.

Keywords : *Mas Kirana Banana, Plant tissue culture, Inhibiting Substance Browning , Sucrose*