

**DETERMINATION OF THE EFFECT OF
PRETREATMENT AND BEST MEDIUM FOR
ANTHER CULTURE OF SELECTED POTATO
VARIETIES (*Solanum tuberosum* L.)**

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture of
Uva Wellassa University
in partial fulfillment of the requirements for the award of the degree of
Bachelor of Science in Export Agriculture

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2013

ABSTRACT

This study was conducted to develop a protocol for anther culture of selected potato varieties. The effect of media manipulations and temperature in pretreatments on tetraploid potato anther cultures was investigated. Selected potato varieties are Golden Star, Granola, Desiree and Raja. Flowers produced only two varieties and the anther culture responses were examined in these two potato varieties. Anthers of Golden Star and Granola potato varieties used as explants. In first experiment explants in pre treatments at 4 °C and 6 °C were studied. The sterilized explants were cultured on MS medium and LS medium with six different hormone combinations of NAA, 2, 4-D and BAP to investigate the effect on callus induction. The pretreatment at 4 °C had the positive effect on anther culture and promoted callus formation while pretreatment at 6 °C had less effect in Golden Star variety. Both pretreatments had no positive effect on anther culture of Granola. With Golden Star variety, LS medium supplemented with the 6% sucrose, 1mg L⁻¹ 2, 4-D, 2.5mg L⁻¹ BAP, 0.1mg L⁻¹ IAA and 0.05% activated charcoal was found to be superior to other media manipulations. All six media manipulations had no positive effect on callus induction on Granola. Golden Star anthers pretreated at 6 °C for 48 hours was cultured in MS medium supplemented with 6% Sucrose, 2 mg L⁻¹ 2, 4-D, 1 mgL⁻¹ BAP, 0.1 mg L⁻¹ IAA and 0.5% activated charcoal showed the minimum days taken to callus formation (11 days). The maximum callus percentage (16.65±4.738%) and maximum diameter of the calli (3.88±0.495 mm) were observed in LS medium supplemented with 6% Sucrose, 1 mg L⁻¹ 2, 4-D, 2.5 mg L⁻¹ BAP, 0.1 mg L⁻¹ IAA and 0.05% activated charcoal.

Key words: Potato, Anther culture, NAA, Callus induction, 2, 4-D, BAP