DEVELOPMENT OF A PROTOCOL FOR *IN VITRO* PROPAGATION OF BLACK PEPPER (*Piper nigrum* L.) LOCAL SELECTIONS

A dissertation submitted to the

Faculty of Animal Science and Export Agriculture

Uva Wellassa University

In partial fulfillment of the requirements for the award of

Bachelor of Science in Export Agriculture

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Export Agriculture Degree Programme

Faculty of Animal Science and Export Agriculture

Uva Wellassa University of Sri Lanka

2014

ABSTRACT

Black pepper (*Piper nigrum* L.) belongs to family *Piperaceae* and is one of the most economical important spice crops in the world. Unavailability of sufficient mother plant stock in the field, obtaining basal runners for propagation and less success and multiplication rate of the high yielding local pepper cultivars are major problems occurred in large scale plant production. *In vitro* propagation as a promising option, this study focused to develop a suitable protocol for *in vitro* propagation of black pepper local selections. Different surface sterilizations with Clorox and $HgCl_2$ were tested for disinfection of black pepper shoot tips for culture establishment. Culture establishment was carried out with two types of media (1/2 WPM and 1/3 MS medium). Shoot multiplication was carried out using Woody Plant Medium supplementing with Kinetin (0.1, 0.2 mg/L) and Naphthalene Acetic Acid (0.5, 1.0 mg/L) with 3 mg/L 6- Benzyl Adenine (BA). Leaves were cultured on full and 1/2 MS media supplementing Kinetin (1.0, 1.5 mg/L) and NAA (0.5, 1.0mg/L) for callus initiation. Shoot tip disinfected using 0.04 % $HgCl_2$ for five minutes resulted that higher percentage (66.6 %) of survival. Shoot tips cultured on 1/2 WPM showed higher mean survival (0.49). WPM supplemented with 3mg/L BA, 1.0 mg/L NAA and 0.2 mg/L Kinetin was the best hormonal combination for shoot multiplication. Either full or 1/2 MS medium supplement with 1.0 mg/L NAA and 1.5 mg/L Kinetin is the best medium for callus formation from leaves. For *in vitro* propagation of black pepper local selections, above surface sterilization, culture establishment, shoot multiplication and callus induction are established in the protocol.

KEY WORDS: *In vitro* propagation, Black pepper, Local selections, Culture medium, shoot multiplication, callus initiation