Effect of Indole 3-Acetic Acid on in vitro germination of *Albizia amara* (Roxb.)B.

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ABSTRACT

Albizia amara drought tolerant tree found in dry forests of India, belonging to the family Fabaceae. Plant growth regulators play an important role in seed germination. Auxin mediates the development processes in plants. The present study was conducted in an attempt to conserve by in *vitro*seed germination of *Albizi aamara* with various concentrations of growth regulator IAA. A significant result was obtained for IAA at (5 ppm, 4 ppm and 3 ppm) compared to other treatments. Regenerated plants were successfully acclimatized and transferred to the green house with significant survival rate.

Key words:*Albiziaamara, In vitro* seed germination, Indole-3-acetic acid.

INTRODUCTION

Albizia amara an deciduous tree, belongs to Leguminosae Gamble (1935)regeneration rate of leguminous trees in natural habitats is low.Seed germination a primary spot in plant life cycle Johnson (2000). *In vitro* tissue culture obtains a large numbers of individual Hung CD and Trueman (2010); Silva et al., (2010, 2011) medicinal plants economically important Malik et al., (1993); Prakash et al., (1994); Bhuyan et al., (1997); Arya et al., (1999); Das et al., (1999); Hussain et al., 92008) for conservation and micropropagation of *A. amara* Indravathi and Pullaiah (2013).

The leaves of *Albizia amara* contain 4'O–menthylrutin and Budmunchiamines,sperminemacrocyclic alkaloid Mar et al., (1991) from the seeds of *Albizia amara* possess pharmaceutical activity viz., stomach cancer, common cold, diarrhoea, intestinal ailments, dandruff, wounds, skin diseases, gonorrhoea and animal fodder Ayyanar and Ignacimuthu, (2005); Karer*uet al.*,(2008). Fruits and seed are used as anti-emetic and for treating

coughs and malaria Woongchon *etal.*,(1991). The plant extracts of *Albizia amara* are in traditional medicine Reddy *et al.*,(1967) for treating boils, eruptions and swellings, also regarded as an emetic and as a therapy for coughs, ulcer, dandruff and malaria Zhang *et al.*,(2011); Higuchi *et al., (*1992).

Plant growth regulators enhance the growth of plants Calvo et al., (2014) controlled by various environmental conditions Du Jardin (2015);Radkowski and Radkowska (2013);Colla (2014). Application of tissue culture techniques to genetic upgrading of economically important plants Scowcraft(1977).Studies on in vitro culture of different species of *Albizia* have been reported including *A. julibrissin* Sankhla *et al*., (1993); *A. lebbeck* Varghese and Kaur(1988), Tomar and Gupta (1988b),*A. procera* Ghosh and Chatterjee (1992), *A. richardiana* Tomar and Gupta (1988a). *In vitro* regeneration of this species using seeds paves way for the genetic improvement of this woody species. The objectives of the present study was to evaluate the effect of seed germination of *A. amara* by *in vitro* method.

MATERIAL AND METHODS

Plant material, Media preparation and culture conditions

Seeds of *Albizia amara* were collected from Erode district, Tamil Nadu,India.The seeds were washed with distilled water for 5 times, followed by treatment of 5%sodium hypochloride for 15 min anddisinfected with 0.1 % $HgCl_2$ for 2 min and it was rinsed four times with sterile distilled water.Experimental seeds were inoculated aseptically over Murashige and Skoog (MS) basal mediumwith various concentrations of IAA (0, 1, 2, 3, 4, 5 ppm) forseed germination.The cultures were maintained in the culture room at 25±2°C under cool white fluorescent light intensity of 3000 lux.

RESULT AND DISSCUSSION

The present study propagated seed in MS medium atdifferent concentration of Indole 3-AceticAcid. Among the five different ppm of IAAwe observed the significant regeneration rateat 5 ppm, 4ppm and 3ppm.The plant hormone auxin has been prominently associated with numerous aspects of plant development Aloni et al. , (2006); Overvoorde et al.,(2010); Locascio et al.,(2014); Pattison et al.,(2014); Smit and Weijers(2015).Lowest germination was observed in

control.The significant seed germination was observed at 5ppm of shoot length (6.4 cm) and root length (3.5 cm) followed by 4ppm shoot length was observed (4.2 cm) and root length (2.3 cm). This present study supportedby Kumar et al. ,(1998) in *Albizia procera*, Sinha,et al. (2000) in *Albizia chinensis* and Ramamurthy and Savithramma, (2003) in *Albizia amara*. Acclimatization and hardening of developed roots were thoroughly washed under tap water to remove the traces of agar from the roots and transferred to cups containing sterilize soil and sand mixture (1:1) after two weeks, the plants were transferred to larger pots containing sand and garden soil in 1:3 ratio, and were maintained under field conditions. The present study concluded that maximum germination percentage and seedling growth in *A.amara* with 5 ppm IAA.

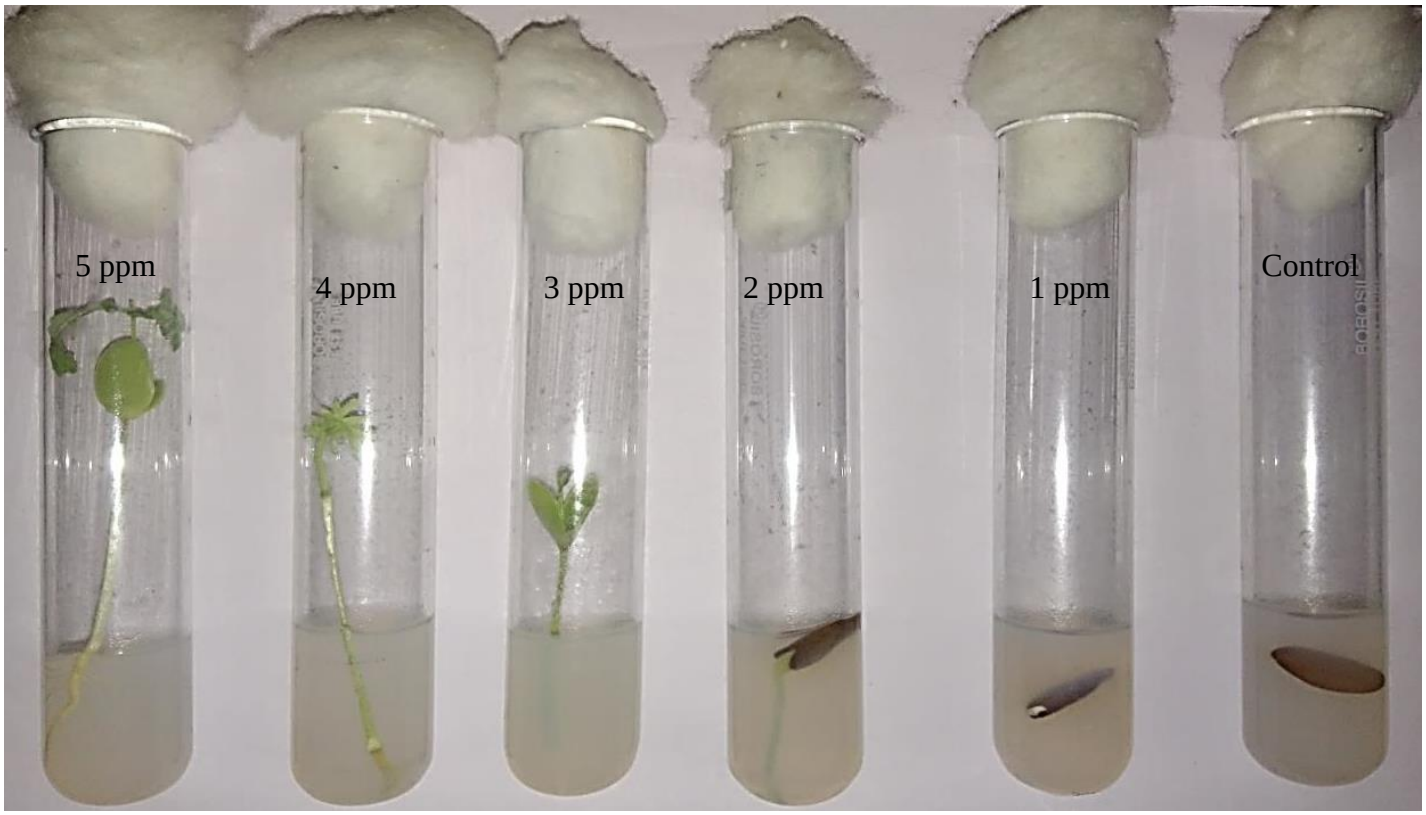

Fig.1. Effect of different concentrations IAA on of *A. amara*.

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