Biospectra : ISSN : 0973-7057, Vol. 13(1), March, 2018, pp. 65-66

An International Biannual Refereed Journal of Life Sciences

Plant Science

ISSN : 0973-7057

Ind. Database Index: 663 www.mjl.clarivate.com

Studies on callus induction of *Lawsonia inermis* and *Murraya Koenigii* Spreng. in Auxin (2, 4-D) and IAA

Nazra Paiker* & Kunul Kandir

University Department of Botany, Ranchi University, Ranchi, Jharkhand, India

Received : 10th January, 2018 ; Revised : 21st February, 2018

Abstract : Phytohormones play an important role in the callus induction. The present research work has been conducted to investigate callus formation in *Lawsonia inermis* L. and *Murraya koenigii Spreng*. Callus obtained from various explants like, shoot tip and leaflets on MS + 2, 4 – D and MS + IAA in different concentration in *Lawsonia inermis* L. coloured Callus was obtained.

Keywords : *Lowsonia inermis Murraya Koenigli*, Callus

INTRODUCTION

Lawsonia inermis L. belongs to family lythraceae is a much branched shrub and small tree that grows in Middle East Africa. It is commonly known as Mehandi in Hindi of Egyptian henna. The leaves of the henna plant have a red orange dye molecules, lawsone a nepthquinone compound.

The plant *Murraya Koenigii* Spreng., commonly know as curry leaf tree. It belongs to family Rutaceae. It reaches maximum height 6 meters and 15-40 cm in diameter. During the last decade, significant progress has been made in the pro-pagation of fruits, medicinal plants and forest plant through tissue culture. Differentiation of organs such as root and shoot has been achieved from callus obtained by the culture of organs of several plant species *Dalbergia Sisoo*, fruits plants[1,2].

OBSERVATIONS

Callus induction of *Lawsonia inermis* L. and *Murraya Koenigii* Spreng was achieved.

*Corresponding author :
Phone : 07070457082
E-mail : nazarapaiker80@gmail.com

RESULTS & DISCUSSION

In this investigation explants taken from young plants gave better response callus was obtained from the various plant parts of both the plants *Lawsonia inermis* and *Murraya koenigii* Spreng. The best callus growth from shoot tip of *Lawsonia inermis* L. was observed in (MS + 2, 4-D) (2.5 mg/l). Here 95% callus induction was observed. The best callus frowth from leaflets of *Murraya koenigii* Spreng was on MS + 2, 4-D (2.0 mg/l). Here 80% callus induction was obtained. In vitro micropropagation and regeneration induction of coloured callus was achieved[3]. The best callus growth from shoot tip of *Lawsonia inemis* L was observed in (MS + IAA) (3.0 mg/l). Here 83% callus induction was observed. The best callus growth from leaflets of *Murraya koenigii spreng* was on (MS + IAA) (2.0 mg/l) Here 60% callus induction was obtained. Histological observation of callus development has been pointed out that establishment of tissue culture involves the process of cell dedifferentiation[4]. Experimental investigations on two plants *Lawsonia inermis* L and *Murraya koenigii Spreng* were carried out with a view to explore the possibility of establishing tissue culture.[5,6,7]

Effect of different concentrations of auxin (2, 4-D) incorporated in MS medium on callus induction *Lawsonia inermis L.* after 5 weeks.

Concentration of Phytohormones concentration in mg/l	Percentage culture showing nature of callus after 5 weeks
0.5	15
1.0	18
1.5	21
2.0	30
2.5	**95**
3.0	71
3.5	40

Effect of different concentrations of auxin (2, 4-D) incorporated in MS medium on callus induction of *Munaya koenigii* Spreng. after 5 weeks.

Concentration of Phytohormones concentration in mg/l	Percentage culture showing nature of callus after 5 weeks
0.5	10
1.0	25
2.0	**60**
2.5	50
3.5	40
4.0	25

Effect of different concentrations of auxin (IAA) incorporated in MS medium on callus induction of *Lawsonia inermes L.* after 5 weeks.

Concentration of Phytohormones concentration in mg/l	Percentage culture showing nature of callus after 5 weeks
0.5	10
1.0	18
1.5	24
2.0	40
2.5	60
3.0	**83**
3.5	70

ACKNOWLEDGEMENT

Authors are thankful to the Head, University Department of Botany, Ranchi University, Ranchi for providing necessary laboratory facilities.

REFERENCES

1. **Dutta, S.K., Dutta, K. 1988.** Auxin induced regeneration of forest tree, *Dalbergia sisoo* Roxb. *Plant Cell Tissue* and *Organ* Cult., **2:**15.20.
2. **Lundergan, C.A. and Janick, J. 1980.** Regulation of apple shoot proliferation and growth *in vitro*. Hort. Res., **20:**19.24.
3. **Rahiman, A.F. and Taha, M.R. 2011.** Plant regeneration and induction of coloured callus from henna (*Lawsonia inermis* Syn. *Lawsonia alba*). Institute of Bio. Sc. Faculty of Sc. University of Malaya, Kuala Lampur, Malaysia.
4. **Trecul, A. 1853.** Accroissement des vegetaux dicotyledones ligneus (reproduction di bois et de L'ecorce parle boir decortique). Ann. Sci. Nat. Bot. Biol. Veg. **2a,** 157-192.
5. **Zhou, J,Y., Guo, Fix. And Razdan, M.K. 2000.** Somatic embryogenesis and germplasm conservation of plant In: M.K Razdan and E.C. Cocking (Eds.) Conservation of plant Genetic Resources. *In vitro* Vol. **2 :** Applications and Limitiations. *Science Publishes*, INC. Enfield, USA, pp. 167 – 192.
6. **Razdan, M.K and Cocking, E. C. 1997.** Conservation of Plant Genetic Resources, In – vitro Vol. **1 :** *General Aspects Science Publishes* Inc., Enfield USA; pp – 314.
7. **Hackett; W.P. 1987.** Juvenility and maturity In : Cell and Tissue Culture in Forestry, Vol **. 1 .** J.M. Bonga and D.J. Durzan eds. *Martinus Nijhoff Publishers*. The Hague, pp . 216 – 231.

***