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Prosopis farcta L.

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(2013 / 5 / 27 2013 / 4 / 8

BA Zeatine IBA NAA Prosopis farcta

. MS

+ IBA / 2.0 BA / 0.5 + NAA / 3.0 MS / 2.0 + IBA / 3.0 Zeatine / 2.0 + NAA / 0.5 BA / 1.0 .Zeatine

0.9 2.17 2.1 1.44 %60 %90 %90 %90

/ 1.0 + IBA / 3.0 BA / 0.5 + NAA / 0.5

Zeatine / 2.0 + IBA / 2.0 Zeatine / 2.0 + NAA / 0.5 ,BA

%100 %100 %100 %100 1.89

MSO

NAA / 0.5 . 2.67 2.47 2.42

> Zeatine BA MS

Induction of Callus Cultures from Stems and Cotyledonary Leaves of *Prosopis farcta* L. by Using some Plant Growth Regulators

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ABSTRACT

This study was capable to find the optimal conditions for callus initiation and growth from stems and cotyledonary leaves segments of *Prosopis farcta*, by using different concentrations of plant growth regulators NAA, IBA, Zeatine and BA alone or in an interaction between them in agar-solidified MS medium. The better media that encouraged callus induction from stem segments were those supplemented with 3.0 mg/L NAA + 0.5 mg/L BA, 2.0 mg/L IBA + 1.0 mg/L BA, 0.5 mg/L NAA + 2.0 mg/L Zeatine, 3.0 mg/L IBA + 2.0 mg/L Zeatine in which the induction percent reached 90%, 90%, 90%, 60% and fresh weight that reached up 1.44, 2.1, 2.17, 0.9 gm respectively. Whereas the better media that encouraged callus induction from cotyledonary leaves segments were those supplemented with 0.5 mg/L NAA + 0.5 mg/L BA, 3.0 mg/L IBA + 0.1 mg/L BA, 0.5 mg/L NAA + 2.0 mg/L Zeatine, 2.0 mg/L IBA + 2.0 mg/L Zeatine with callus induction percent reached to 100%, 100%, 100%, 100% and fresh weight average 1.89, 2.42, 2.47, 2.67 gm respectively. It is clear that 0.5 mg/L NAA has an important role in callus initiation alone or with BA and Zeatine dependent on callus induction percent and its fresh weight.

On the other hand, the explants failed to continue in its viability when cultured on agar-solidified MSO medium.

Keywords: *Prosopis farcta*, plant growth regulators, callus cultures.

Kumer) 50 Leguminaceae *Prosopis farcta*(and Singh, 2009

(Humberto *et al.*, 2010; Asadollahi *et al.*, 2010)
.(Omidi *et al.*, 2012 ; 2011) 3-2 80 - 30
.(2009)

82

(Neumann et al., 2009)

.(Sultana and Bari, 2003)

ı

.(Razdan, 2003)

.(2004)

Prosopis cineraria

Kumer and) MS

.(Singh, 2009

Prosopis farcta

Prosopis farcta

(1)

.% 95

/

:1



Prosopis farcta

(www. alsirhan.com, 2002)

) %96 2: 1 NaOCl (Kumar and Singh, 2009) 5 Ascorbic acid Citric acid 150 100 / MS 4 (Murashige and Skoog, 1962) 8 / 5 Activated Charcoal %100 $.^{\circ}$ 2 ± 25 2000 8/ 16 2 21 MS 1.0 - 0.5o 2 ± 25 2000 8/ 16 60

84

:

3 2 1 0.5) Indole butyric acid (IBA) Naphthaleneacetic acid NAA (/ (Z) Zeatine Benzyl adenine (BA) (/ 2 1 0.5)

60

Prosopis farcta MS

.(A.2) BA NAA

MS

(1)

(NAA BA 60 MS

NAA BA

/ 0.5 + NAA / 3.0 BA

%90 MS

/ 1.44 0.5 MS 60

%70 BA / 0.5 + NAA

%100

2 MS (B.2)) 1.89

/ 0.5 + NAA /.BA

MS

MSO

.(2009)

BA NAA :1

60 MS Prosopis farcta

				1-
		45.13		
(%)	()	(%)	()	
20	0.4	10	0.42	MSO (control)
20	0.5	15	0.6	MS+0.5 NAA
-	*	_	*	MS+1.0 NAA
-	*	-	*	MS+2.0 NAA
-	*	15	0.4	MS+3.0 NAA
-	*	-	*	MS+0.5 BA
-	*	-	*	MS+1.0 BA
25	0.7	-	*	MS+2.0 BA
100	1.89	70	1.2	MS+0.5 NAA +0.5 BA
50	0.9	_	*	MS+0.5 NAA +1.0 BA
-	*	-	*	MS+0.5 NAA +2.0 BA
90	1.2	20	0.7	MS+1.0 NAA +0.5 BA
90	1.2	15	0.5	MS+1.0 NAA +1.0 BA
40	0.8	15	0.6	MS+1.0 NAA +2.0 BA
90	1.75	50	0.92	MS+2.0 NAA +0.5 BA
30	0.8	_	*	MS+2.0 NAA +1.0 BA
20	0.4	20	0.4	MS+2.0 NAA +2.0 BA
90	1.62	90	1.44	MS+3.0 NAA +0.5 BA
10	0.4	20	0.4	MS+3.0 NAA +1.0 BA
-	*	-	*	MS+3.0 NAA +2.0 BA

.(Razdan, 2003)

/ 0.5 BA

.

.(Vijay et al., 2010)

86

BA IBA

MS

MS BA IBA (2)

. 60

MS

BA / 0.5 + IBA / 1.0 + MS . BA IBA

%90 60

1.0 + IBA / 2.0 MS 1.44

/ 3.0 MS . 2.1 BA /

%100 BA / 1.0 + IBA

.(C.2) 60

.(Tan et al., 2010; Baskaran et al., 2006)

BA + IBA

.(2004 ; Barriobero *et al.*, 1995)

BA IBA :2

60 MS Prosopis farcta

				T
				1-
(%)	()	(%)	()	
01	0.4	15	0.42	MSO (control)
_	*	01	0.83	MS+0.5 IBA
-	*	10	0.4	MS+1.0 IBA
10	0.14	-	*	MS+2.0 IBA
10	0.17	20	0.5	MS+3.0 IBA
-	*	10	0.6	MS+0.5 BA
15	0.4	15	0.4	MS+1.0 BA
30	0.8	15	0.9	MS+2.0 BA
60	1.12	30	1.57	MS+0.5 IBA +0.5 BA
60	1.48	80	1.02	MS+0.5 IBA +1.0 BA
70	1.61	70	1.0	MS+0.5 IBA +2.0 BA
90	2.12	90	1.44	MS+1.0 IBA +0.5 BA
80	1.42	90	1.28	MS+1.0 IBA +1.0 BA
70	1.2	80	1.73	MS+1.0 IBA +2.0 BA
40	0.8	80	1.0	MS+2.0 IBA +0.5 BA
70	1.7	90	2.1	MS+2.0 IBA +1.0 BA
15	0.7	20	0.6	MS+2.0 IBA +2.0 BA
80	1.1	50	0.84	MS+3.0 IBA +0.5 BA
100	2.42	70	1.02	MS+3.0 IBA +1.0 BA
15	0.76	30	0.7	MS+3.0 IBA +2.0 BA

*

MS NAA (3)

MS Zeatine

MS Zeatine

/ 1.0

Zeatine NAA . %60 %50

MS

88 %90 60 2.17 Juan et al.,) (2010 2 1 MS Zeatine / 2.0 + NAA / 0.5 %100 NAA MS 2.47 (D.2 60 Zeatine %90 Zeatine / 2.0 + NAA / 1.0 MS . 2.32

.Zeatine NAA

•

.(Chaudhry et al., 2007)

89

Zeatine NAA :3

Prosopis farcta

				1-
(%)	()	(%)	()	
15	0.42	01	0.46	MSO (control)
02	0.52	01	0.57	MS+0.5 NAA
-	*	-	*	MS+1.0 NAA
02	0.41	01	0.4	MS+2.0 NAA
-	*	-	*	MS+3.0 NAA
50	0.91	15	0.69	MS+0.5 Z
60	0.69	50	0.66	MS+1.0 Z
-	*	01	0.15	MS+2.0 Z
70	1.49	70	1.27	MS+0.5 NAA +0.5 Z
70	1.37	30	0.7	MS+0.5 NAA +1.0 Z
100	2.47	90	2.17	MS+0.5 NAA +2.0 Z
80	1.42	70	1.31	MS+1.0 NAA +0.5 Z
90	2.14	80	1.3	MS+1.0 NAA +1.0 Z
90	2.32	70	1.74	MS+1.0 NAA +2.0 Z
80	1.78	70	1.53	MS+2.0 NAA +0.5 Z
80	1.1	30	0.63	MS+2.0 NAA +1.0 Z
70	1.7	70	0.61	MS+2.0 NAA +2.0 Z
90	1.7	70	1.3	MS+3.0 NAA +0.5 Z
90	2.1	70	1.42	MS+3.0 NAA +1.0 Z
80	1.28	70	1 47	MS+3 0 NAA +2 0 Z

60

MS

*

MS Zeatine IBA MS (4) MS IBA Zeatine .(3) MS Zeatine IBA + MS %60 Zeatine / 2.0 + IBA / 3.0

.

(Gubi et al., 2004)

Plant Cell Cycle

90

.(George, 2008)

Zeatine IBA

Zeatine / 2.0 + IBA / 2.0 + MS

%100

. 60 2.67

.(E.2)

.(George, 2008)

.(Juan et al., 2010; Gubi et al., 2004)

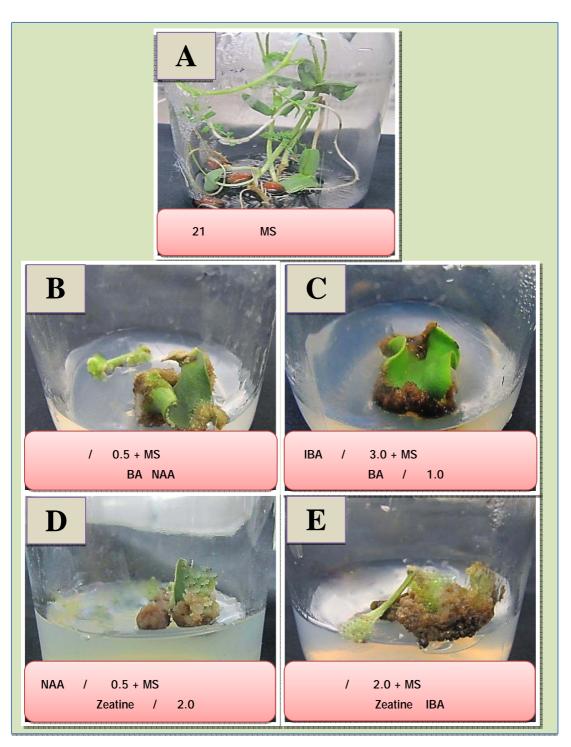
Zeatine IBA :4

60 MS Prosopis farcta

				T
	1		T	
				1-
(%)	()	(%)	()	
15	0.4	15	0.5	MSO (control)
-	*	20	0.57	MS+0.5 IBA
-	*	-	*	MS+1.0 IBA
-	*	20	0.41	MS+2.0 IBA
-	*	-	*	MS+3.0 IBA
50	0.8	30	0.63	MS+0.5 Z
50	0.67	50	0.65	MS+1.0 Z
-	*	-	*	MS+2.0 Z
40	1.07	-	*	MS+0.5 IBA +0.5 Z
60	1.1	15	0.56	MS+0.5 IBA +1.0 Z
30	0.88	-	*	MS+0.5 IBA +2.0 Z
70	1.48	20	0.76	MS+1.0 IBA +0.5 Z
80	2.31	-	*	MS+1.0 IBA +1.0 Z
90	2.1	20	0.7	MS+1.0 IBA +2.0 Z
40	0.85	_	*	MS+2.0 IBA +0.5 Z
90	2.34	-	*	MS+2.0 IBA +1.0 Z
100	2.67	30	0.65	MS+2.0 IBA +2.0 Z
90	2.13	15	0.49	MS+3.0 IBA +0.5 Z
80	1.11	15	0.48	MS+3.0 IBA +1.0 Z
90	1. 86	60	0.9	MS+3.0 IBA +2.0 Z

*

92



:2 Prosopis farcta **60**

MS

LT-22

.36-28 17
.(2004)

.Vicia faba L.

Apium graveolens L.
.(2009)
.135-128 15
.(2011)
(-2) -3- -2.
.(1990)

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