

(2013 / 6 / 26 2013 / 5 / 27)

2009-2008

)	(BYMV) Bean yellow mosaic virus	2010-2009
	BYMV	(
2010	% 30	% 52
.	% 36	% 55

(TBIA) Tissue Blot Immuno Assay

Dot-Blot

.BYMV

.% 4

()

(Sunoco)

0.232

0.343

0.310

0.596 0.543 0.532)

0.067

. 0.042

(

32.61)

(/ 14.53 5.71 17.94)

.(/ 24.43 28.52

:

Identification, Seed Transition of Bean Yellow Mosaic Virus and their Effect on Faba Bean Plants in Nineveh Provenance

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ABSTRACT

The field survey of broad bean fields in Nineveh showed the existence of BYMV in (Rashidiah, Guabba, Shrekhan, Shalallat and Danadan) regions in 2008-2009 and 2009-2010 seasons .

The viral incidence was 52% in Rashidiah at pre-flowering stage, while the incidence was 30% at Shalallat, whereas in 2007 season, the disease incidence reached 55% in Rashidiah and 36% in Danadan fields.

The results of serological diagnosis, using TBIA, Dot-Blot techniques proved that the main cause of mosaic symptoms on broad bean plants in these fields was BYMV (Bean Yellow Mosaic virus).

TBIA technique showed the existence of BYMV at 4% in broad bean seeds.

Spraying mineral oil (Sunoco) and insecticide (Alpha Methrin) separately and their mixture using corn plants as barrier plants revealed that the contents of potassium, calcium and sodium were decreased, but nitrogen content was increased in diseased plants 0.310, 0.343, 0.232 and 0.067 mg, respectively, but these values in case of using barrier plants were 0.532, 0.543, 0.596 and 0.042 mg, respectively.

Also treatments reduced the content of chlorophyll A and B in diseased plants to reach 17.94, 15.71 and 14.53 mg/g and increased in case of botanical barrier treatment to reach 32.61, 28.52 and 24.43 mg/g.

Keywords: Faba bean, Bean Yellow Mosaic virus, TBIA, Seed transmission.

Vicia faba L.

Fabaceae

Rhizobium leguminosarum

.(1990)

.....

8000 2002

19

10

.(Anon, 2003)

60

Cockbain, 1983; Tolba,1980)

.(2005

; Simay and Beczner, 1991

.(Phatak,1974)

.(Kaiser,1973)

.(Makkouk *et al.*, 1988)

50

()

(TBIA)

- 2009)

/

.(2010

% 1

30

/ 10

. 5

% 50

/ 5 % 50

()

.TBIA

-1

.(1996) Kumari Makkouk

.Hsu *et al.*, (1990)

BYMV

: 2:1 (Na₂ HPO₄ .2H₂O) + KH₂ PO₄) Phosphate buffer

(Na-DECA) Sodium Diethyl % 0.2

(7)

0.01

/ 1 Dithio Carbamats

4 - 3

400

.(Noordam, 1973)

(Inclusion Bodies)

(1973) Noordam

% 0.5 (Rose Bengal)

.X 40

BYMV

4-3

(/)

- / /

.TBIA

.....

:

6

5

15

10

(2)

(1)

(-)

+

(3)

(Sunco)

(4)

8-6

L

.BYMV

-

1

(%80

°4)

25

30

2500

Spectrophotometer

25

Ross

645 - 663

.(Ramadan, 1989)

$$\times 1000 / \times (E645) 2.69 - (E663) 12.7 = (/)$$

$$\times 1000 / \times (E663) 4.68 - (E645) 22.9 = (/)$$

$$\times 1000 / \times (E663) 9.02 + (E645) 20.2 = (/)$$

.BYMV

-

10

0.5

50

.(Gresser and Parsan, 1979)

RYE Unicamspatatomic Absorption (Phillips)

/ /

(1980, A. O. A. C.)

48

°70

:

- 2009 2009 - 2008

(1) Bean yellow mosaic virus 2010
 % 30 %52 BYMV
 % 55 2010
 .% 36

()

Shawket and Fegla, (1983)

.(2005)

(1997)

Simay and Beczner, (1991)

:1

BYMV % 2010 - 2009	BYMV % 2009 - 2008	
55	52	
45	44	
38	36	
36	32	
40	30	

BYMV

TBIA

-

(TBIA) Tissue Blot Immuno Assay

.....

-

BYMV

(2 1)

(1996)

BYMV

BYMV

.(2007)

(2005)

.(2)

TBIA

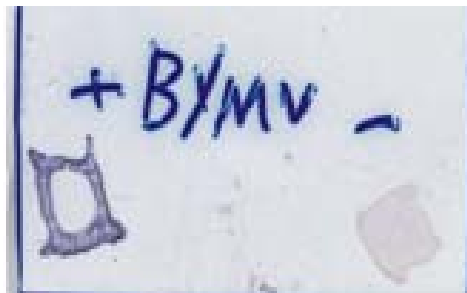
BYMV



: 1

.(

)



:2

.(

) BYMV

Dot-Blot ELISA

BYMV

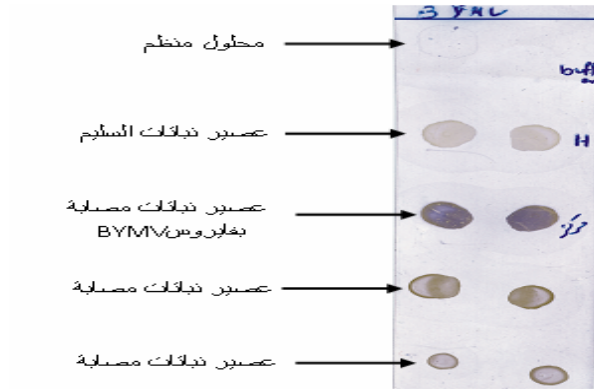
(3)
()

.Hammond and Lawson, (2002)

()

BYMV

Dot – Blot ELISA



BYMV

Dot – Blot ELISA

: 3

10 - 7

vein banding

.(1986)

Shawket and Fegla, (1983)

(2011)

(1989)

(9 - 6)

(1993)

.....

Potyvirus Group (PVY)

(Bos , 1970)

BYMV

.(2005)

(1995)

(1986)

BYMV

(4)

%4

Mali *et al.*, (2003)

% 3

BYMV

Dallwitz *et al.*, (2004)

BYMV

Aftab and Angela, (2006)

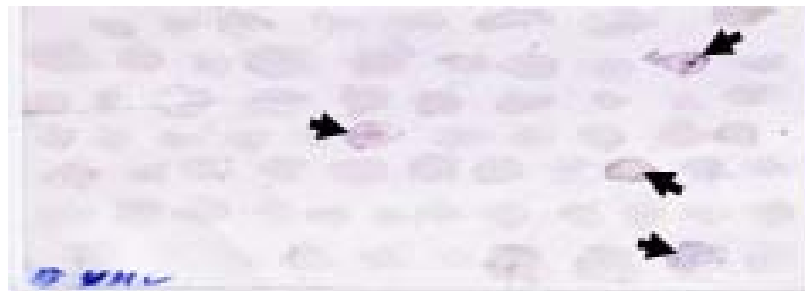
% 17

BYMV

BYMV

Smith, (1972)

% 18



)

BYMV

: 4

.(

:

BYMV

(2)

22.31 / 23.34 / 24.43 / 28.52 / 32.61
 / 20.40 /

BYMV

Tu *et al.*, (1968)

(2005)

(BBTMV)

El-Banna, (1979)

BYMV

:2

/			
()	()	()	
14.53	15.71	17.94	()
18.27	20.63	21.42	
15.63	16.58	19.35	
20.40	22.31	23.34	+
24.43	28.52	32.61	

%5

*

()

(3)

**

.....

BYMV

-

(3)

0.232

0.343

0.310

0.067

Mathews, (1981)

and Ohashi, (1986)

Ramadan,

Mastuoka

(1989)

(1993)

Kassanis *et al.*, (1981)

(1986)

(PR-Proteins) Pathogenesis Related Proteins

(2005)

El-Hammady *et al.*,(1983)

BYMV

:3

/				
0.067	0.232	0.343	0.310	()
0.043	0.496	0.467	0.432	
0.050	0.441	0.456	0.410	
0.040	0.514	0.539	0.524	+
0.4	0.596	0.543	0.532	

%5

*

.()

(3)

**

.(1986)

.114-105 (1)5

.(2005)

BYMV

Alternaria alternata

.(1986)

.169-163 :

.(1995)

."

".(1989)

. 592

."

".(1990)

. 259 .

.(1993)

.93-87 (1)6 .

.(1997)

555

." (2011)

.(2007)

.(1994)

.64 (12)

.(1996)

.9-3 14

" (1993)

521

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