

()

Bemisia tabaci (Genn.)

Bemisia argentifolii Bellows and Perring
RAPD-PCR

//

Bemisia *Bemisia tabaci* (Genn.) (Hom.: Aleyrodidae)

argentifolii Bellows and Perring

()

±

±

)

(

B. tabaci

B. tabaci

B. argentifolii

Bemisia tabaci , RAPD-PCR

Bemisia argentifolii

1. Random Amplified Polymorphic DNA-Polymerase Chain Reaction (RAPD-PCR)

E-mail: Samih@mail.vru.ac.ir

2. Band

B. tabaci
 B A *Bemisia tabaci* (Gennadius)
 (Homoptera Aleyrodidae)

B.
 B A *argentifolii*
 ()

ITS1 (Gennadius)
 () *B. tabaci* , rDNA () *Aleyrodes tabaci*
 B *Physalis alkekengi* L.

A. inconspicua
 B *Bemisia*
B. inconspicua (Quaintance, 1900)
 ()

B. argentifolii B
Lamium purpurium L. (Lamiaceae)
B. tabaci

Bemisia tabaci
B. tabaci (Gennadius)
 () (Takahachi 1936)

()
B. tabaci ()
 B RAPD-PCR ()
B. argentifolii

B. tabaci species copelex superbug

-
- 3. silverleaf whitefly
 - 4. First Internal Transcribed Spacer
 - 5. silvering
 - 6. microsatellite

-
- 1. species complex
 - 2. Solanaceae

B. tabaci

A B

Bemisia

()

()

) (/) Nacl :

() (PH=

/) (/) Nacl (% /)

(pH=8) ²EDTA (

SDS (/) (/) EDTA

pH = / (% /)

, SDS

OD260/OD280

() /

dsDNA

()

TE

//

//

//

//

//

//

//

//

//

//

//

1. Blanchetot

2. Etilen Dinitro Tetrastic Acid

3. Sodium Dodecil Sulfate

4. Tris+EDTA

5. primer

UV

(S.E.M.)

(°c)	
5'GAGGATCCCT3'	F2
5'ACGGTACCAG3'	F12
5'TGTAGCTGGG3'	H9
5'TCTCAGCTGG3'	H16
5'GGACCCTTAC3'	B20

()

/	(Dd H ₂ O)				
/	1 x (10x PCR buffer)				
	200 μM	dNTP	*	% /	
	3 μM	(MgCl ₂)			
	0.4 μM	(Primer)			
() /	0.05 unit/μ (Taq polymerase)		DNA Ladder		
	(Template DNA)				plus 100 bp

2. etidium bromaid

1. Ependorf

3. denaturation

4. anneling

5. extention

B. argentifolii :
B. tabaci
 ()
T. vaporariorum *B. argentifolii* *B. tabaci*
 ()
B. tabaci) *B. tabaci* *B. argentifolii*
argentifolii .(
T. ,
vaporariorum
T. *B. tuberculata* *B. argentifolii* ()
Aleurotrachelus ocialis variabilis) *B. tabaci*
 () ()
 : *B. argentifolii* .
 DNA
 ()
 ()
B. tabaci B (*B. tabaci*) A ,(*B. argentifolii*)
 : *B. argentifolii* B
 A H-16
 B ()
 () B *B. argentifolii*
B. argentifolii B A

B. argentifolii
tabaci

-
1. visiform orifice
 2. operculum
 3. lingula
 4. spatulate
 5. thoracic tracheal folds

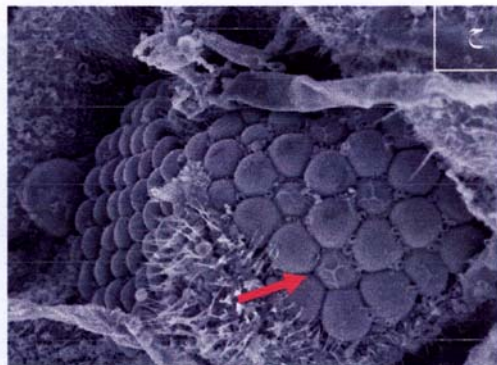
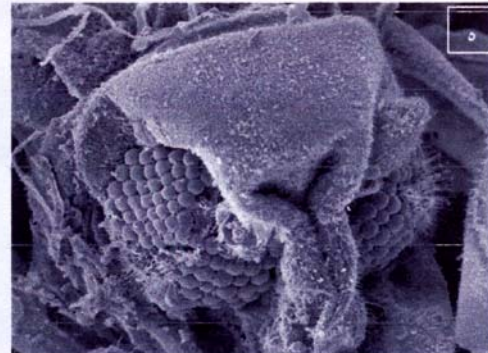
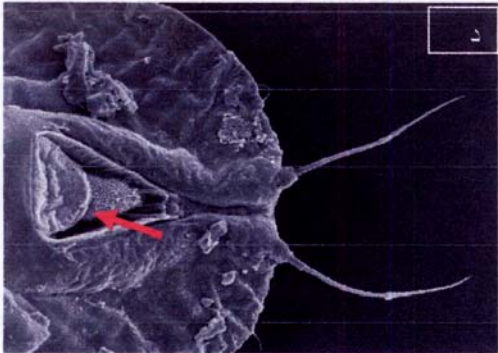
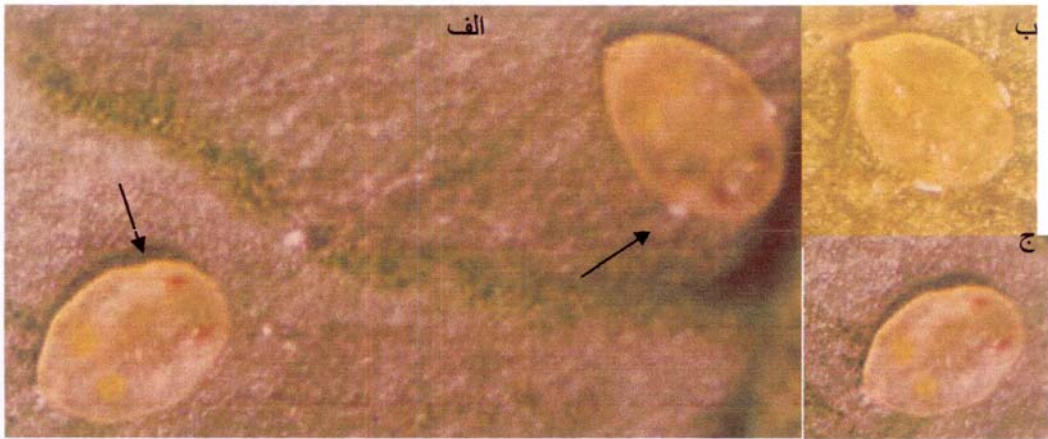
()

A

B

B A

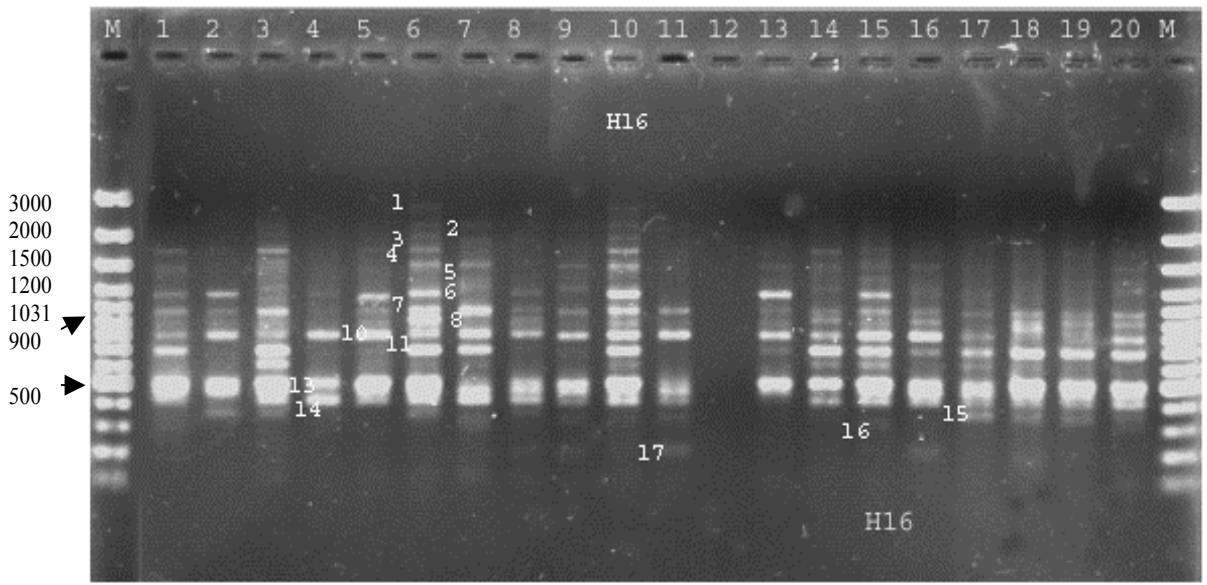
B. argentifolii



B. tabaci

() *B. tabaci* () *B. argentifolii*
B. tabaci *B. argentifolii*

B. tabaci
B. argentifolii



OpH-16

() () () () () () (M)

() () ()

B A

F2, F12, H9, H16

B A

B A

H16 B A

B

(OpH16) B A

H9 B A ()

H16 B. tabaci

B. argentifolii

B H16

() B.

F12 F2

OpH-09

Bemisia Bemisia

()

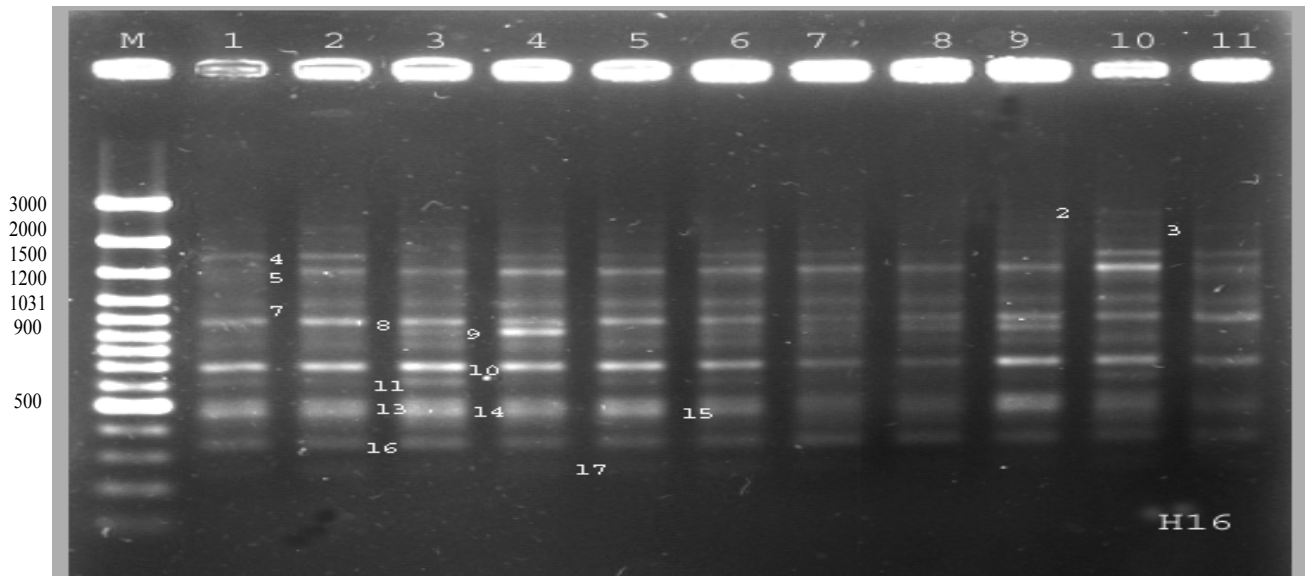
(A, F, H)

B

B

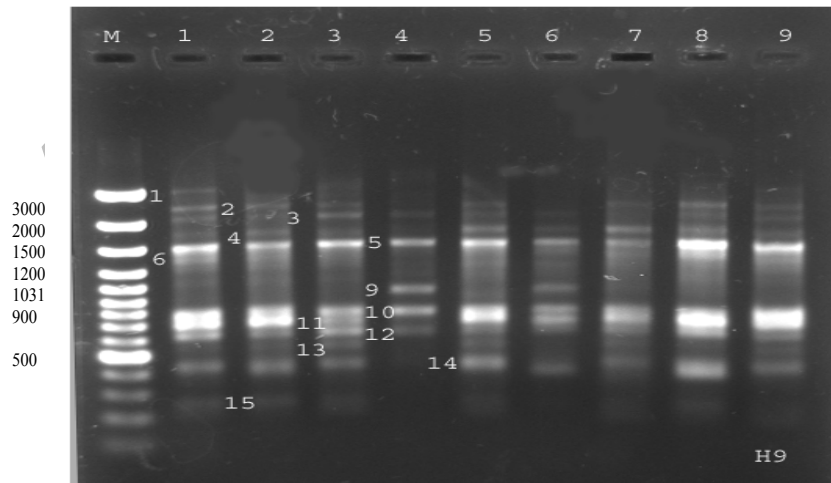
A

Bemisia



:OpH-16

() () () () () () (M)
 () () () () ()



:OpH-09

() () () (M)

OpB20

B A

B A

A

H09

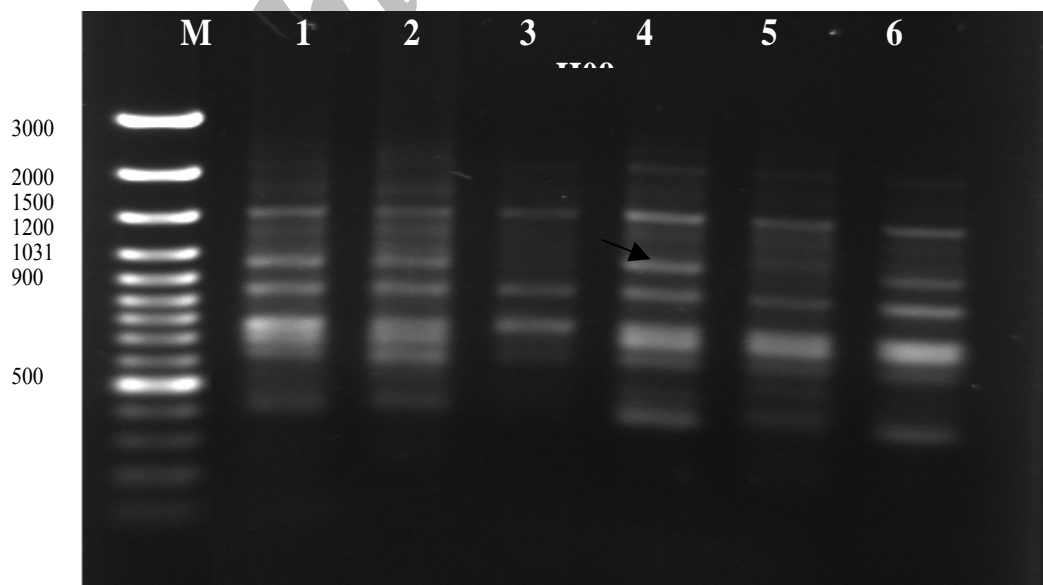
B. argentifolii

H9 ()

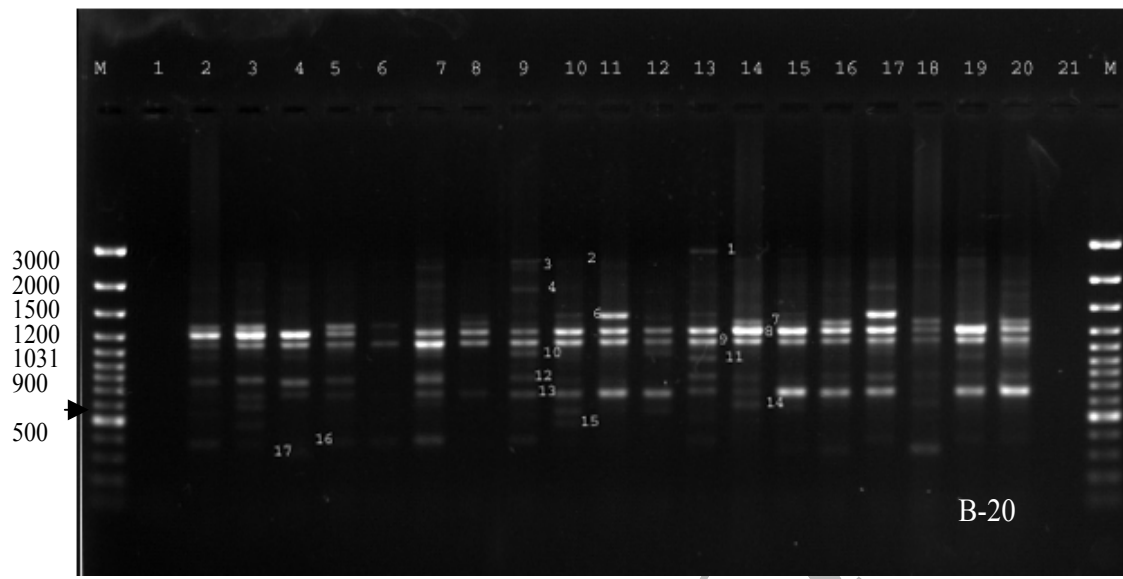
B. tabaci *B. argentifolii*

B. argentifolii

A



OpH-) () () () () () (M) :09 (original



OpB-20

() () () () () (M)
 () () () () ()
 .()

()

B. tabaci

RAPD-PCR

B

()

()

()

Operon

()

()

Operon OB-20 OC-03

()

A

OB-20

B

B

UPGMA

()

()

RAPD-PCR

REFERENCES

- Aphis* spp.
- a.
- Bemisia tabaci* (Hom.: Aleyrodidae)
- b.
- Bemisia tabaci* (Hom.: Aleyrodidae)
- c.
- Bemisia tabaci* (Genn.)
- d.
- RAPD-PCR *Bemisia tabaci* (Genn.)
- Bemisia tabaci* (Genn.)
7. Barinago, M., 1993. Is devastating whitefly invader really a new species? *Science*, 259, 30.
 8. Bellows, T. S., T. M. Perring, R. G. Gill & D. H. Headrick, 1994. Description of a species of *Bemisia* (Homoptera: Aleyrodidae) *Annals of the Entomological Society of America*, 87(2): 195-206.
 9. Blanchetot, A. 1991. A *Musca domestica* satellite sequence detects individual polymorphic regions in insect genome. *Nucleic Acid Research*, 19: 929-939.
 10. Brown, T. A. 1996. Gene cloning, An introduction. Chapman and Hall, Fourth edition, UMIST, Manchester. 334pp
 11. Calvert, L. A., M. Cuervo, J. A. Arroyave, L. M. Constantino, A. Belloti & D. Frohlich, 2001. Morphological and mitochondrial DNA marker analyses of whiteflies (Homoptera: Aleyrodidae) colonizing cassava and beans in Colombia. *Annals of the Entomological Society of America*, 94(4): 512-519.
 12. De Barro P. J & F Driver, 1997. Use of RAPD-PCR to distinguish the B biotype from other biotypes of *Bemisia tabaci* (Gennadius) (Hemiptera: Aleyrodidae). *Australian Journal of Entomology*, 36,149-152
 13. De Barro, P. J., F., Driver, J. W. H., Trueman., & J. Curran. 2000. Phylogenetic relationships of world populations of *Bemisia tabaci* (Gennadius) using ribosomal ITS1. *Molecular Phylogenetics and Evolution* 16(1):29-36
 14. De Barro, P. J., K. D. Skott, C. L. Graham, C. L. Lange., & M. K. Schutze, 2002. Isolation and characterization of microsatellite loci in *Bemisia tabaci*. *Australian Journal of Entomology*, 42: 211-217.
 15. Enkegaard, A. 1993. The poinsettia-strain of the cotton whitefly *Bemisia tabaci* (Homoptera: Aleyrodidae) biological and demographic parameters on poinsettia (*Euphorbia pulcherima*) in relation to temperature. *Bulletin of Entomological Research*, 83: 535-546

16. Gill, R. J., 1990. The morphology of whitefly.in: Gerling, D. (Ed, whiteflies: their bionomics, pest status and management. Intercept Ltd., Andover, Hants, UK, pp. 13-46.
17. Guirao, P., F. Beitia, & J. L. Cenis, 1997. Biotype determination of Spanish populations of *Bemisia tabaci* (Hemiptera: Aleyrodidae). Bulletin of Entomological Research, 87:587-593.
18. Perring, T. M., A. D. Cooper, R. J. Radrigues, C. A. Farrar, & T. S. Bellows, 1993. Identification of a whitefly species by genomic and behavioral studies. Science 259: 74-77
19. Perring, T. M., 2001. The *Bemisia tabaci* soecies complex. Crop Prtection, 20: 725-737.
20. Rosell, R. C., I. D. Bedford, D. R. Frohlich, R. J. Gill, P. G. Markham & J. K. Brown, 1997. Analyses of morphological variation in distinct population of *Bemisia tabaci*. Annals of the Entomological Society of America 90: 575-589.

Archive of SID