Welcome Sign in | Register | Mobile S. W

Advanced Search

Help



Books Home

PS Journals

APS Home

IS-MPML Home

My Profile

Share

The premier source for peer-reviewed plant pathology research since 1911.

Subscribe

Subscribe Free alerts RSS



Journals Home

August 2010 ISSN: 0191-2917

e-ISSN: 1943-7692

SEARCH

Enter Keywords Омрмі O Phytobiomes O Phytopathology Plant Disease

search Advanced Search

Resources

Subscribe

About Plant Disease

First Look

Most Downloaded Articles

Journals Impact

Submit a Manuscript

Customer Care

About My Password

Rights and Permissions

Plagiarism and Ethics

Advertise

-Xtm

Open Access DRCID Registry

ORCID **Connecting Research** and Researchers

REGISTRATION IS

ORCID is an open, non-profit, community driven organization Your ORCID iD ensures you get credit for your work

throughout your career. Register today at



plant disease

Editor-in-Chief: Alison E. Robertson Published by The American Phytopathological Society

Home > Plant Disease > Table of Contents > Abstract Previous Article | Next Article

August 2010, Volume 94, Number 8 Page 1068

https://doi.org/10.1094/PDIS-94-8-1068C

Disease Notes

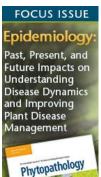
First Report of Beet mosaic virus Infecting Chickpea (Cicer arietinum) in Tunisia

S. G. Kumari, Virology Laboratory, International Center for Agricultural Research in the Dry Areas (ICARDA), P.O. Box 5466, Aleppo, Syria; A. Najar, National Institute of Agricultural Research in Tunisia (INRAT), Tunis, Tunisia; N. Attar, ICARDA, Aleppo, Syria; M. H. Loh, Department of Primary Industries (DPI), Knoxfield, Victoria, Australia; and H.-J. Vetten, Julius Kuehn Institute-Federal Research Center for Cultivated Plants (JKI). Institute for Epidemiology and Pathogen Diagnostics, Messeweg 11/12, 38104, Braunschweig, Germany

Open Access.

Chickpea plants with severe yellowing and tip wilting were observed in the Cap-Bon Region of Tunisia in 2006. The viral-like symptoms resulted in yield loss of approximately 25% in some fields. A total of 110 symptomatic chickpea plants was collected from nine chickpea fields and tested at the Virology Laboratory of ICARDA, Syria for eight legume viruses using tissue-blot immunoassay (TBIA) (3). Polyclonal antisera produced at the ICARDA Virology Laboratory were used to test for Chickpea chlorotic dwarf virus (genus Mastrevirus, family Geminiviridae), Broad bean stain virus (genus Comovirus, family Secoviridae), Broad bean mottle virus (genus Bromovirus, family Bromoviridae), and Bean yellow mosaic virus and Pea seed borne mosaic virus (genus Potyvirus, family Potyviridae). Antiserum to Beet mosaic virus (BtMV; genus Potyvirus, family Potyviridae) (AS-0143) was provided by the German Collection of Microorganisms and Cell Cultures (DSMZ, Braunschweig, Germany). In addition, three monoclonal antibodies (MAb) were used to detect Faba bean necrotic yellows virus (FBNYV; genus Nanovirus, family Nanoviridae) (MAb 3-2E9) (1), potyviruses (PVAS-769 [MAb PTY 3 Potyvirus Group] American Type Culture Collection, Manassas, VA), and luteoviruses (MAb B-2-5G4) (2). Twenty-two of the plants tested positive with MAb PTY 3 and BtMV antisera, 56 samples reacted with MAb B-2-5G4, and eight plants with the FBNYV MAb, whereas 24 plants tested negative with all antisera. Because reactions with the BtMV antiserum were unexpected, detection of BtMV was confirmed by reverse transcription-(RT)-PCR assays using BtMV-specific primers (LN26 and LN27) (4), which produced an amplicon of expected size (1,050 bp) from all plants that reacted with BtMV antiserum but not from plants that were serologically negative. Leaf tissue from a BtMV-infected plant was ground in 0.01 M potassium phosphate buffer, pH 7.2 (1:20, wt/vol), mixed with 0.5% celite, and used for mechanical





Add to favorites E-mail to a colleague

Quick Links

Alert me when new articles

cite this article

Download to citation manager

Related articles found in APS Journals inoculation of chickpea seedlings (cv. Beja 4). In addition, adults of three legume aphid species (*Aphis craccivora, A. fabae*, and *Acyrthosiphon pisum*) were starved for 1 h before feeding on BtMV-infected chickpea leaves for an acquisition access period of 5 min. Fifteen aphids of each species were placed on each chickpea plant, allowed to feed for 24 h, and then sprayed with an insecticide. Tip wilting symptoms appeared on plants 15 to 20 days after mechanical and aphid inoculations but not on plants used as negative control treatments (inoculated mechanically with healthy leaf tissue or with aphids that had fed on noninfected chickpea plants). Use of BtMV antiserum for TBIA analysis of inoculated plants revealed systemic BtMV infections in 35 of 92 plants inoculated mechanically and 15 of 75 plants inoculated with viruliferous *A. fabae* only. To our knowledge, this is the first record of BtMV infecting chickpea in Tunisia.

WHITE PAPER Foundational and Translational Research Opportunities to Improve Plant Health Molecular Plant-Microbe Interactions Read Article Comments

References: (1) A. Franz et al. Ann. Appl. Biol. 128:255, 1996. (2) L. Katul. Characterization by serology and molecular biology of bean leaf roll virus and faba bean necrotic yellows virus. Ph.D. thesis. University of Gottingen, Germany, 1992. (3) K. M. Makkouk and A. Comeau. Eur. J. Plant Pathol. 100:71, 1994. (4) L. G. Nemchinov et al. Arch. Virol. 149:1201, 2004.

Journals Home | Books Home | APS Home | IS-MPMI Home | Contact Us | Permissions | Privacy | Copyright The American Phytopathological Society