



## Short Notes

### First record of tomato late blight in Basrah province

Labeed A. Al-Saad<sup>1</sup>, Aqeel A. Al-Yousuf<sup>1</sup> & Mohamed M. Mezaal<sup>2</sup>

<sup>1</sup> Department of Plant Protection, College of Agriculture, University of Basrah, Iraq.

<sup>2</sup> Department of Plant Protection, Basrah Directorate of Agriculture, Iraq.

\*Corresponding author e-Mail: [la\\_alsaad@yahoo.com](mailto:la_alsaad@yahoo.com)

Received 19 January 2019; Accepted 29 January 2019; Available online 8 February 2019

---

**Abstract:** Tomato production in Al-Zubair district, Basrah province, Iraq was affected by late blight disease that was not recorded before in this geographical area. The symptoms were firstly appeared in December 2018 in several farms of Al-Zubair district. The infection was spread widely at January 2019 according to the environmental conditions that fitted the development infection. The pathogen was identified morphologically as *Phytophthora infestans*.

**Keywords:** Late blight, Tomato plants, Basrah, Iraq.

---

Tomato (*Solanum lycopersicum*) is considered as one of the major agricultural products in Iraq. Although tomato is grown in the whole country, Basrah province identified as a major tomato production area in Iraq (Sopped & Saleh, 2012). Late blight was not recorded previously among common tomato diseases in Basrah province.

Since about 150 years, this disease was well known as a true problem affecting tomato production all over the world that cannot be controlled effectively either by chemical, biological or agricultural methods

(Rautela, *et al.*, 2018). Moreover, there is no tomato cultivar till now efficiently resist this disease except several tolerant cultivars (Sullenberger, *et al.*, 2018). We believe this is the first record of this disease on tomato in Basrah province and in Iraq.

The late blight symptoms were recorded for the first time since December 2018 in Al-Zubair district. The symptoms on young leaves characterized by water soaked lesions surrounded by light halo gradually expand converting leaves to brown, shrivel then die (Fig. 1).



**Fig. (1):** Late blight symptoms on leaves, stem pedicels and fruits.

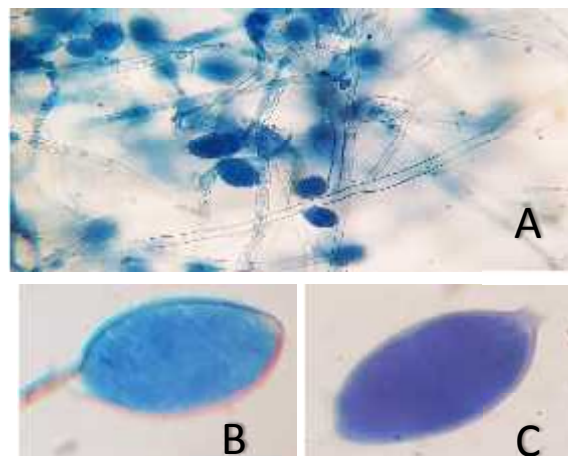
The stems and pedicels showed brown irregular lesions, while symptoms of fruits represented by chocolate-brown circular greasy lesions developed to cover the entire fruit (Fig. 2). Under humid conditions, lesions on fruits and/or down side of leaves covered with a leathery layer, which indicate the production of sporangia. The samples were collected at 3ed of Jan 2019 from several parts of Al-Zubair district, Basrah province, the scanned parts included Al-Shuaiba, Al-Burjicya, Safwan and Khorelzubair. The collected samples were transferred to the laboratories of Plant Protection Department, College of Agriculture, University of Basrah for laboratory examination.



**Fig. (2):** Symptoms development on tomato fruits.

The morphological identification was performed according to Sendall & Drenth (2001) and Gallegly & ChuanXue (2008). The

examination results Fig. (3) revealed that examined pathogen was *Phytophthora infestans*, which is confirmed the identification of the late blight disease on infected tomato plants.



**Fig. (3):** Microscopic examination of *P. infestans*: A, mycelium and sporangia; B,C sporangium.

### Acknowledgements

The Authors appreciate the assistance provided by Department of Plant Protection, Basrah, Iraq.

### References

- Gallegly, M.E. & ChuanXue, H. (2008). *Phytophthora: identifying species by morphology and DNA fingerprints*. St. Paul, M.N: American Phytopathological Society APS Press. 158pp.
- Rautela, A.; Shukla, N.; Ghatak, A.; Kumar, J. & Tewari, A.K. (2018). Field evaluation of different copper sources in a consortium of “Copper-Chitosan-Trichoderma” for management of late blight disease of tomato. *J. Pharmacogn. Phytochem*, 7(4): 1260-1266.
- Sendall, B. & Drenth, A. (2001). *Practical guide to detection and identification of Phytophthora*. Tropical Plant Protection, 1.0: 1-41.
- Sopped, R., & Saleh, R.O. (2012). Report B2.1 Historical agricultural production

data in Iraq. Iraq Salinity Project.  
Retrieved from <http://icarda.org/iraq-salinity-project/teaser>.

Sullenberger, M.T.; Jia, M.; Gao, S. & Foolad, M.R. (2018). Genetic analysis of late blight resistance in *Solanum pimpinellifolium* accession PI 270441: Heritability and response to selection. *Plant Breeding*, 137(1): 89-96.  
<https://doi.org/10.1111/pbr.12561>.