

## Research Article

## Management of Bacterial Leaf Spot of Greengram Caused by *Xanthomonas axonopodis* pv. *vignaeradiatae*

Manoj Choudhary<sup>1</sup>, K Singh<sup>2</sup>, M K Khokhar<sup>1</sup>, P Rawal<sup>3</sup> and R Shah<sup>3</sup>

<sup>1</sup>ICAR-Nation Research Center for Integrated Pest Management, New Delhi -110 012, <sup>2</sup>ICAR-NBPGR Regional Station Jodhpur -342 003, <sup>3</sup>Department of Plant Pathology, RCA, MPUAT, Udaipur-313 001, Email: manoj04444@gmail.com

### Abstract

Green gram is an important pulse crop, which is grown all over world for its nutritional value and improvement of soil fertility. Bacterial leaf spot disease devastated green gram field in Rajasthan, caused by *Xanthomonas axonopodis* pv. *vignaeradiatae*, with ranging severity from 10-80 per cent. Disease was observed initially on leaf, advanced to all parts of plants and it is transmitted to seed. Different artificial inoculation methods viz, single spray, double sprays at 24 h of interval, carborundum abrasion and single spray after multineedle pricking were standardized in which two sprays at 24 h interval which cause 68.80 per cent symptom of disease in plants was found most convenient and suitable for expressing symptom under glasshouse conditions. Efficacy of different fungicides and antibiotics were evaluated under in vitro and pot experiments. Among different treatments maximum per cent disease control was recorded in Labistryn 89.72 per cent followed by Streptocycline (85.12%) and Bacterinol.

**Key words:** Fungicides and antibiotics, green gram, *Xanthomonas axonopodis* pv. *vignaeradiatae*

**Citation:** Chaudhary M, Singh K, Khokhar MK, Rawal P and Shah R. 2019. Management of bacterial leaf spot of greengram caused by *Xanthomonas axonopodis* pv. *vignaeradiatae*. J Mycol Pl Pathol 49(1): 67-72.

Green gram is most important source of dietary protein, and has unique property of maintaining and restoring soil fertility through nitrogen fixation as well as conserving and improving physical properties of soil by virtue of their deep root system and leaf fall. Green gram is widely cultivated throughout the Asia, including India, Pakistan, Bangladesh, Vietnam, Indonesia, Malaysia and China. In India, it is grown over on an area of 39.4 lac hectares with a production of 21.30 lac tones with average productivity 546 kg ha<sup>-1</sup> in 2016-2017. Green gram plant suffers from two bacterial diseases namely, bacterial leaf spot and halo blight, the former is economically more important and widespread. Fang et al (1964) first reported bacterial leaf spot of green gram from China. In addition to India and China, it also occurs in Pakistan (Iqbal et al 2003).

Green gram crop has been often attacked by bacterial leaf spot and under severe infection infected leaves may dry prematurely, pods are also infected that leads reduced in yield. Infected Green

gram pods serve as source of infection in new area. It is having severe infection of bacterial leaf spot in Rajasthan ranging from 10 to 80 per cent in different areas during kharif 2012 and 2013. Bacterial leaf spot pathogen produces symptoms on leaves, stems, pods and seeds. Stem infection is less common and begins as a water-soaked spot, which becomes reddish-brown and usually without chlorosis. Severely infected seeds may be shriveled and show poor germination with weak plants. Longitudinal lesions, slits or cankers extending from soil level to the growing tip on the stems of seedlings growing from severely infected seeds. Mungbean crop has been often attacked by bacterial leaf spot and under severe infection, infected leaves may dry prematurely, pods are also infected and plants may give reduced yield. Infected mungbean pods serve as source of infection in new area.

Rathore (2010) described that seed borne inoculum forms an important source of primary inoculum and can initiate an epidemic on a large