

## NEW DISEASE REPORT

**First report of *Bean common mosaic virus* in Western Australia**M. Saqib<sup>a</sup>, R. A. C. Jones<sup>b</sup>, B. Cayford<sup>a</sup> and M. G. K. Jones<sup>a\*</sup><sup>a</sup>WA State Agricultural Biotechnology Centre, School of Biological Sciences and Biotechnology, Murdoch University, Perth, WA 6150; and<sup>b</sup>Plant Pathology Section, Department of Agriculture for Western Australia, Locked Bag no. 4, Bentley Delivery Centre, Perth, WA 6983, Australia

*Bean common mosaic virus* (BCMV; genus *Potyvirus*, family *Potyviridae*) infects *Phaseolus vulgaris* crops in many regions of the world. It is transmitted in a nonpersistent manner by aphids and is also readily seed-transmitted (Hongying *et al.*, 2002). The disease it causes decreases crop production. In Australia, BCMV has been reported in New South Wales, Queensland, Tasmania and Victoria, based on serology and amino acid composition (Moghal & Francki, 1976, 1981). However, there is no information about isolates or their origin, and no further confirmation, or any sequence data for BCMV from Australia. It has not been reported in the Northern Territory, South Australia or Western Australia.

In July 2004, at Kununurra in the east Kimberly region of Western Australia, *P. vulgaris* plants with mottle and leaf deformation, severe mosaic, malformation of leaves and pods, downward curling of leaves and reduction in leaf size were observed in the field. Extracts of leaf samples with symptoms tested positive with generic potyvirus monoclonal antibody in ELISA, and infected *Chenopodium quinoa*, *Chenopodium amaranticolor* and *Nicotiana benthamiana* when manually inoculated.

For molecular identification, total RNA was isolated from symptomatic leaf tissue using an RNeasy Plant Mini Kit (Qiagen). The RNA samples were tested using RT-PCR and generic potyvirus specific primers that amplify a 1700 bp fragment from the 3' end of the genome [5'-GTTTCCAGTCACGA C(T)<sub>15</sub>; 5'-

GGNAAYAAAYAGYGGNCARCC] (Chen *et al.*, 2001). A portion of the PCR product (482 bp) was sequenced at the 3' end (accession no. AY850005) and the data were compared with other BCMV sequences in GenBank. The isolate shared 98% nucleotide identity with the 'NL1' and 'Type' strains of BCMV (accession nos AY112735 and U55319). This sequence result provides the first reliable confirmation of BCMV in Australia, and is the first report of its occurrence in Western Australia.

**References**

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