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## Deep sequencing of RNAs from *vigna mungo* plants showing crinkle symptoms reveals the multiple virus infection

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**B**lackgram (*Vigna mungo*) is one of the important pulse crops grown in Indian sub-continent. It is also known as urdbean. The symptoms of crinkle disease include enlargement, puckering and crinkling of leaves. The disease is known from decades and has been reported to be transmitted by mechanical as well by many types of insects. Though in the literature, there are evidences that this disease is caused by a virus and named as Urdbean leaf crinkle virus (ULCV), however, still the genome of the virus has not been characterized. The present study was aimed to find out the virus (es) involved in crinkle disease of urdbean. Four urdbean samples showing crinkle disease were collected from field and they were sap inoculated separately on urbean plants. The RNA from field infected (n=4), sap inoculated (n=4) and healthy samples (n=1) extracted and were used to prepare three libraries (1-Pooled RNA from field infected samples, 2-Pooled RNA from sap inoculated samples and 3-RNA from healthy sample) for next generation sequencing (NGS). After removing reads pertaining to plant sample, assembly and mapping was done. We found 1161 contigs from sap inoculated sample and 1865 contigs from field infected sample. Cap3 was used to assemble the small contigs into complete sequence. Genome Annotation Transfer Utility (GATU) was used for annotation of viral genomes by using a closely related genome as a reference. Most of the sequences were obtained from Retrovirus-related Pol poly from transposon followed by Cowpea mild mottle virus (CpMMV), Tobamovirus multiplication, Mungbean yellow mosaic India virus (MYMIV) and Peanut bud necrosis virus (PBNV). Three viruses (CpMMV, MYMIV and PBNV) has already been reported infecting many legume crops including urdbean, however, the sequences of retrovirus-related Pol poly transposon and Tobamovirus multiplication are being reported for the first time. There role in urdbean crinkle disease needs to be investigated.

### Biography

Mir Asif Iquebal has completed his PhD at the age of 28 years from ICAR-Indian Agricultural Research Institute, New Delhi. Trained on Computational Biology at Iowa State University, Ames, USA. Currently, he is working as Scientist (Senior Scale) at ICAR-Indian Agricultural Statistics Research Institute, New Delhi, a premier agricultural research organization. He has published more than 40 research papers in reputed National and International journals.

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