Investigation on Incidence, Thrip Species, Weed Hosts and '*N*' Gene Characterization of *Groundnut bud Necrosis Virus* Infecting Groundnut (*Arachis hypogaea* L)

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ABSTRACT

Peanut bud necrosis disease caused by *Groundnut bud necrosis virus* is a major constraint for groundnut production in south and south east Asia. Roving survey was conducted in 70 fields belonging to 70 villages spread over 12 groundnut growing districts in Andhra Pradesh, India for assessing the incidence of Peanut bud necrosis disease (PBND) during *kharif* and *rabi* 2017-18. PBND incidence was significantly higher in *rabi* 2017-18 (13.6%) compared to *kharif* 2017-18 (5.3%). DAC-ELISA results were positive for all suspected PBND infected groundnut plants with mean absorbance (A_{405}) values ranging from 0.56 to 1.1 in *kharif* 2017-18 and 0.07-1.2 in *rabi* 2017-18. Mean thrip population per terminal bud was four in both *kharif* and *rabi* 2017-18 seasons. During survey, GBNV symptoms and thrip damage was observed on alternate weed species. The representative groundnut GBNV isolate (GBNV-GN-BPIND) from Ananthapuramu district, when artificially sap inoculated on cowpea seedlings in glasshouse, typical GBNV symptoms were observed within 4-7 days of post-inoculation (DPI). The Nucleocapsid (*N*) protein gene of GBNV-GN-BPIND groundnut isolate was amplified by RT-PCR and it shared wide range of nucleotide identities (78.66-98.48 %) with other GBNV isolates reported from world. Further, phylogenetic analysis of GBNV nucleocapsid protein (*N*) gene region of present study isolates (GBNV-GN-BPIND) clustered with chilli, water melon, cowpea, groundnut-Bangalore, pea and french bean GBNV isolates and formed single clade.

Keywords: *GBNV, Groundnut, Nucleocapsid (N) protein gene, PBND, Survey.*