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Severe stunting of wheat caused by the Indian peanut clump virus (IPCV), possibly vectored by *Polymyxa* sp. P Delfosse [1], A Legrève [2], AS Reddy 1, B Vanpee [2], AK Murthy [1], DVR Reddy [1], H Maraite [2] *([1] International Crops Research Institute for the Semi-Arid Tropics, ICRISAT Asia Center, Crop Protection Division, Patancheru PO, 502 324 Andhra Pradesh, India; [2] Université catholique de Louvain, unité de phytopathologie, faculté des sciences agronomiques, place Croix-du-Sud 2, Bte 3, B-1348 Louvain-la-Neuve, Belgium)*

The peanut clump virus is a furovirus affecting groundnut in West Africa (WAPCV) and in India (IPCV). In India the virus is seedborne in *Arachis hypogaea*, *Eleusine coracana*, *Pennisetum glaucum* and *Setaria italica*. *Polymyxa* sp a soil-inhabiting fungus transmits the virus to groundnut but also to various other crops and weeds. Up to now the monocots were found infected by the virus without showing any overt symptoms. From surveys conducted in the states of Punjab and Rajasthan in India, it is apparent that the most common rotation being used in the areas where the IPCV disease is very important is wheat in post-rainy season under irrigation and rainfed groundnut in rainy season. To simulate the conditions existing in farmers' fields, wheat (*Triticum aestivum*, cv Sonalika) was grown in fields infested with the Hyderabad isolate of IPCV (HIPCV) on ICRISAT Asia Center farm. Wheat seeds treated with Thiram at 3 g/kg were sown on 25 November 1994 at a rate of 45 kg/ha. Diammonium phosphate was applied before sowing (100 kg/ha). Top dressing was given with urea (25 units of nitrogen per ha), 2 weeks after emergence. Irrigation was given twice a week to favour the infection by *Polymyxa* sp. The virus was detected by the penicillinase-based form of DAS-ELISA and immunosorbent electron-microscopy with a polyclonal antiserum raised against HIPCV isolated from groundnut.

Two weeks after planting 5 plants without any overt symptoms showed the presence of the virus. One month after planting a number of plants were infected by the virus and showed a severe stunting with old leaves darker in colour than those of uninfected plants. The diseased plants were not only present in the known infested patches observed for groundnut crops over several years but were also scattered all over the field in areas where usually very few infected groundnut plants were observed in rainy season. As the crop aged, many of the infected plants died. The surviving plants remained severely stunted with dark green leaves. The majority of these plants produced malformed ear heads often enclosed in the flag leaf. Excessive tillering was observed. The seeds were shrivelled and few in number. The seeds from infected plants were currently being tested for frequency of seed transmission, all contained the virus in their tissues but out of 15 seedlings tested none was infected. In glasshouse experiment HIPCV isolated from groundnut and multiplied on French bean was inoculated onto roots of wheat plants. The inoculated plants quickly showed a mild stunting, dark green leaves and yellow stripe symptoms as observed in the field. The typical veinal necrosis symptoms caused by IPCV were observed on French bean inoculated with infected wheat leaf extract. This result shows that infected wheat leaves can be used as a source of inoculum to transmit HIPCV by sap inoculation. *Polymyxa* sp cystosori were present in some roots of wheat naturally infected by HIPCV.

In the past wheat was shown to be a symptomless host for IPCV while grown on infested soil in controlled environment but it is evident from these results that the symptom expression can be determined by the environment or the genotype as for other furoviruses affecting cereals. The frequency of seed transmission of IPCV in wheat and the possible role of *Polymyxa* sp as the vector will be analysed.