

**HOST RANGE IDENTIFICATION OF HORSEGRAM  
YELLOW MOSAIC VIRUS [Sri Lanka: 2009]**



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## ABSTRACT

The legumes cultivated in Sri Lanka are either consumed directly by human or fed to livestock. The high concentration of least expensive quality protein in legumes, make them complementary in tropical diets. Tropical leguminous crop cultivation have several constrains for yield reduction includes severe pest and disease attack throughout the year. Yellowing of bean leaves in a mosaic pattern is the newly identified virus disease which affects the common bean yield up to 100%.

The virus is known to be transmitted by whiteflies. Using the current taxonomic nomenclature CABI propose the name Horsegram yellow mosaic virus-[Sri Lanka: 2009] HgYMV-[LK: 09] for this variant of the virus. All the bean varieties cultivating in Sri Lanka are susceptible to the disease. Present study was conducted to find out the host range of Horse gram yellow mosaic virus within ten economically important leguminous species with the feeding preference of whiteflies (*Bemisia tabaci*).

Four treatments were designed for experiments which were conducted inside insect proof net cages. Treatment 1 consisted, ten leguminous crops with 100 whiteflies, treatment 2 was designed as 10 leguminous crops with 2 infected diseased plants, treatment 3 contained 10 leguminous crops, 100 adult whiteflies and 2 infected diseased plants and treatment 4 (control) cage contained ten leguminous crops only.

All the treatments were replicated twice and the observation was done for 2 months. Adult and nymphal whiteflies in each leguminous crop were also counted at the end of the study period to analyze the host preference. Results were analyzed by statistical software for analysis of variance and Duncan multiple range test.

The study showed that Common bean (*Phaseolus vulgaris*), Soy bean (*Glycine max*), and Horse gram (*Marcrotyloma uniflorum*), were the susceptible species for HgYMV

while Yardlong (*Vigna unguiculata* sub sp. *sesquipedalis*), Bushisitao (*Vigna unguiculata*. Walp), Winged bean (*Phocarpus tetragonetobus*) Green gram (*Vigna radiata*), Black gram (*Vigna mungo*), and Cowpea (*Vigna unguiculata* sub sp. *unguiculata*) Groundnut(*Archis hypogaea*) showed resistance against the virus.

It was also found from this study that the whiteflies preferred common bean (24.25) followed by soybean (16.25), horse gram (16.0), and winged bean (12.25). From the overall results, it could be concluded that, the host range of Horse Gram Yellow Mosaic Virus [Sri Lanka: 2009] among ten leguminous crops were common bean (*Phaseolus vulgaris*), soybean (*Glycine max*), and horse gram (*Marcrotyloma uniflorum*).

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