

Aphid-Transmitted Viruses

Mosaics Caused by Aphid-Transmitted Viruses



FIGURE 1



FIGURE 2



FIGURE 3



FIGURE 4

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AUTHORS: Sue A. Tolin (Virginia Polytechnic Institute and State University) and Marie A.C. Langham (South Dakota State University)

PHOTOGRAPHS: Courtesy of S.A. Tolin, B. Nault (Cornell) and H.F. Schwartz (Colorado State University) [09/09]

POTYVIRUSES: *Bean common mosaic (BCMV), Bean yellow mosaic (BYMV), Clover yellow vein (CYMV), Peanut mottle (PeMoV), and Soybean mosaic (SMV) virus*

CUCUMOVIRUSES: *Cucumber mosaic (CMV) and Peanut stunt (PSV) virus*

ILARVIRUS: *Alfalfa mosaic virus (AMV)*

COMMON HOSTS: Common bean, Cowpea, Pea, Soybean

MOSAIC VIRUSES ARE:

- Transmitted in a non-persistent manner by aphids after brief acquisition and feeding probes; retained on stylet tips only.
- Transmitted by sap or by contacting infected plant parts.
- Some can be transmitted through seed by infecting the seed embryo.

SYMPTOMS (INFECTED BEAN OR SOYBEAN):

FIGURE 1 • Faint chlorosis and vein banding of dry bean—BCMV

FIGURE 2 • Mosaic and leaf distortion of snap bean—BYMV

FIGURE 3 • Bright yellow mosaic of soybean—AMV

FIGURE 4 • Leaf distortion and blistering of snap bean—typical of PSV and CMV

FACTORS FAVORING:

- Presence of aphid vectors, either colonizing or migratory
- Infected perennial legumes nearby, e.g. alfalfa, clover, vetch
- Seed carrying seed-borne virus particles (e.g., AMV, BCMV, CMV, PeMoV, SMV)
- Infection at V1-V4 enhances symptom severity, reduced pod set and distortion, stunting, and yield loss

ADDITIONAL DIAGNOSTICS AVAILABLE AT:

<http://legume.ipmpipe.org>

<http://wiki.bugwood.org/PIPE:Legume>

<http://www.npdn.org/DesktopDefault.aspx>