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Soybean vein necrosis virus: Why should we care?

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In 2008, a new species of virus in the genus *Tospovirus* was identified in soybean and named *Soybean vein necrosis virus* (SVNV). In the U.S. there have been very few instances where a *Tospovirus* was found to infect soybean. In other countries *Tospoviruses* have been more readily identified on soybean and include *Tomato spotted wilt virus* (TSWV), *Tomato yellow ringspot virus*, *Groundnut ringspot virus*, and *Groundnut bud necrosis virus*. SVNV does not conform to the typical sub-groups within the *Tospovirus* genus. Virus species within this genus are typically split between two distinct genetic clades called the 'New World' and the 'Old World' viruses. All viruses within the *Tospovirus* genus fall in these two sub-groups with the exception of SVNV and another closely related virus species, *Bean necrotic mosaic virus*. Like other *Tospoviruses*, SVNV is transmitted by thrips. While soybean thrips (*Neohydatothrips variabilis*) have been implicated as the most efficient vector of SVNV, other thrips species (e.g. *Frankliniella fusca* and *F. tritici*) have recently been documented as competent vectors. Considering the uniqueness of SVNV, its ability to be thrips-transmitted, and its relatively recent emergence as a soybean pathogen, there has been much interest in its impact on soybean yield and quality. While soybean yield is generally not affected by the SVNV, loss in oil content and changes in protein composition are concerning. In addition, seed-transmission of SVNV has been documented. Although the rate of transmission is low, it acts as an early source of inoculum and creates the potential for synergistic reactions from mixed infections with other viruses that exacerbate yield and quality problems.