



Soybean Vein Necrosis Virus

Key Points

- Soybean vein necrosis virus (SVNV) is a viral disease spread by soybean thrips and contaminated seeds.
- Initial SVNV symptoms appear along the main leaf vein as thread-shaped vein clearing.
- Symptoms can appear during most growth stages throughout the growing season.
- SVNV symptoms are often first observed after flowering, around mid-June, on leaves in the highest canopy.
- SVNV is favored by cool temperatures and mild winters followed by warm springs.

Introduction

While most soybean diseases are either bacterial or fungal in origin, soybean vein necrosis virus (SVNV) is a viral disease primarily vectored by soybean thrips. SVNV can also be transmitted by contaminated seeds.

Soybean Vein Necrosis Virus (SVNV)

Identification, Characteristics, and Diagnosis

Soybean vein necrosis virus is vectored by soybean thrips (*Neohydatothrips variabilis* Beach) and infected seed. Disease development is favored by cool temperatures and a mild winter followed by a warm spring, which may help increase the thrips population. Infection can occur throughout the growing season, but symptoms are most visible around mid-June after flowering.¹



Figure 1. Soybean vein necrosis virus vein clearing. Photo courtesy of Nancy Gregory, University of Delaware, Bugwood.org.

Initial symptoms appear as thread-shaped vein clearing along the main leaf veins, and veins become yellow and necrotic as the growing season progresses. The early lesions lack defined edges, while severe infections may result in purple to dark brown lesions across most of the leaf (Figure 1). Indeed, lesions may appear on several areas of the leaf, though the highest canopy leaves tend to be most affected (Figure 2) because emerging leaves are prime feeding sites for soybean thrips.

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Management

A three-year study over six states concluded the SVNV did not impact yield, but the disease may have reduced seed quality by lowering the seed oil concentration.² Controlling alternate virus hosts such as ivyleaf morningglory (*Ipomoea hederacea* Jacq), cowpea (*Vigna unguiculate*), and mung bean (*Vigna radiata*) can help reduce the inoculum source.¹ However, chemical management of the insect vector has not been successful in eliminating the virus. Complete elimination of the insect pest is not possible, so transmission of the virus will still occur. Certified disease-free seed should be planted to prevent seedborne transmission.²



Figure 2. Soybean vein necrosis virus foliar symptoms.

Sources

¹Lopez-Nicora, H. 2024. Soybean vein necrosis virus and downy mildew. The Ohio State University Agronomic Crops Network, C.O.R.N. Newsletter. <https://agcrops.osu.edu/newsletter/corn-newsletter/2024-26/soybean-vein-necrosis-virus-and-downy-mildew>

²Jardine, D.J. 2020. Soybean vein necrosis virus. Soybean research and information network. <https://soybeanresearchinfo.com/soybean-disease/soybean-vein-necrosis-virus/>

Web sites verified 08/19/2024.

Legal Statements

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.

Performance may vary, from location to location and from year to year, as local growing, soil and environmental conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on their growing environment.

The recommendations in this material are based upon trial observations and feedback received from a limited number of growers and growing environments. These recommendations should be considered as one reference point and should not be substituted for the professional opinion of agronomists, entomologists or other relevant experts evaluating specific conditions.

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