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Soybean Nematodes of Southeast MO

The two primary nematodes that infect soybeans of southeast Missouri are soybean cyst nematode (SCN) and root knot nematode (RKN). There are other nematodes that can cause problems in isolated areas.
SCN - http://extension.missouri.edu/p/g4450
RKN - http://www2.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-GEN-10.pdf

Soybean Cyst Nematode (SCN) Fast Facts: Host – primary soybean, limited list of others. Distribution - More than 80% of soybean acres have SCN. Prolific – each female can produce 400 eggs. Persistent – eggs can survive for years inside cyst. Symptoms – 30% yield loss can occur before ever seeing above ground symptoms. Source of Resistance - >90% of commercial varieties contain PI88788 source of SCN resistance.
SCN Scouting –The first step to management is scouting through visually inspecting roots in late summer for cysts, monitoring yield variability in field and proper soil sampling procedure for representative analysis.
SCN Management – Lab analysis will indicate if the PI88788 source of resistance is still providing egg suppression. If egg count is exceeding 15,000 then a potential species shift is occurring and a HG Type Test is recommended. Management should include more than one of the following: Rotation – Egg hatch is triggered by chemical signal from host roots, however, beneficial for overall health. Resistance – If egg levels are elevated and/or HG test indicates species shift switch to Hartwig resistance (limited sources). Sanitation – moving infected soil to other fields can spread problem. Nematicide products: Clariva, VOTiVo, Avicta, N-hibit. Results are mixed on level of control, additionally preliminary research indicates ILeVo (SDS seed treatment) offering control.
Root Knot Nematode (RKN) Fast Facts: Host – hundreds, unlimited. Distribution – Coarse soils of sub-tropical regions (SEMO). Prolific – female can produce 500 to 1000+ eggs. Persistent – 1 year egg dormancy, hundreds of hosts guarantees food source. Symptoms – late summer yellowing, root galls. Source of Resistance – limited.
RKN Scouting – Like SCN, exam roots late summer, monitor yield variability, soil sample for analysis. Unlike SCN, RKN lab analysis requires vermiform (worms) complete parasitic test. Sampling between August and October required.
RKN Management – Visual ID of galls and lab analysis will confirm presence and level. Rotation – limited benefit due to wide host range. Resistance, Sanitation, Nematicides – incorporate in management plan, similar to SCN.

SCN cysts on root

RKN galls on root

Sampling procedure