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A. The most critical factors which increase PVY spread with statistical strength are:

1. Seed borne inoculum.

“Clean seed is the first line of defense in managing PVY”

2. The high influx of non-colonizing aphids in search of their preferred host.
 - Aphids sampling the sap from various plants, including potatoes, in mid-June to early July occurs at a critical period.
 - If virus plants, with easily identifiable foliar PVY symptoms, are not removed prior to the aphid influx, they will become a source of PVY transmission.
 - Even if they are not efficient vectors, their large numbers will more than compensate for this!
 - PVY infection early in the season results in plants that do not have time to manifest visible foliar symptoms.
 - Allows virus inoculum to increase and further support spread.

“Early roguing is key for reducing the risk of in-field virus spread!”

3. Rapidly developing canopies that produce unprotected leaves.
 - This elevated risk period (mid-June to early July) coincides with rapid plant development leading to a higher dilution of mineral oil in the leaves. Any unprotected surface area enhances PVY acquisition.

B. The most critical factors that decrease PVY spread are:

1. Early oil applications.
2. Early insecticide applications.
3. Composition of the insecticide.

C. Recommendations:

1. Minimize the inoculum between the periods of plant emergence and the first spray application. Plant low virus seed (if possible 0 to 0.5%).
2. Start applying mineral oil at 30 to 50% emergence using a rate of 2L/ac in combination with an insecticide. Follow a 5-day application schedule until the first roguing pass is complete, then move to a weekly application of 2 – 3L/ac of mineral oil until top-kill.
 - a) Essential for impairing non-colonizing aphids’ ability to transmit PVY.
 - b) Ensures the highly susceptible early growth is well covered.



Key Statement...

“Don’t let your guard down during the critical period of (mid-June to early July); it only takes one year of PVY in the seed supply to translate into a five-year set-back!”