On the Cover: Potato virus X (PVX) is a strong trigger of RNA silencing, producing high levels of small-interfering RNAs (siRNAs). These siRNAs can be derived from the replicating virus itself or via the copying action of an RNA-dependent RNA polymerase, RDR6. In this issue, Vaistij and Jones (pp. 1399–1407) report that PVX-driven virus-induced gene silencing is compromised in RDR6-deficient plants despite the accumulation of high levels of replicating PVX and PVX-derived primary siRNAs. This effect is unrelated to the accumulation of virus-encoded suppressors of RNA silencing and suggests that the primary siRNAs are ineffective in driving RNA silencing. The cover photograph shows the silencing of a transiently expressed GFP reporter gene in a wild-type Nicotiana benthamiana leaf infected with a vein-restricted PVX vector. Such silencing is not observed in a RDR6-deficient background. Photography by Phil Roberts.

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