

Supplementary Table S1. The plant sample tested for turnip yellows virus.

Plant Species	Plant Family	Number of Tested Plant	Number of TuYV Detected Plant by RT-PCR
<i>Achillea millefolium</i>	<i>Asteraceae</i>	1	0
<i>Amaranthus retroflexus</i>	<i>Amaranthaceae</i>	1	1
<i>Anchusa arvensis</i>	<i>Boraginaceae</i>	2	0
<i>Arctium lappa</i>	<i>Asteraceae</i>	2	1
<i>Atriplex patula</i>	<i>Amaranthaceae</i>	2	2
<i>Barbarea vulgaris</i>	<i>Brassicaceae</i>	2	0
<i>Brassica napus</i>	<i>Brassicaceae</i>	184	78
<i>Brassica napus</i> (volunteer)	<i>Brassicaceae</i>	15	7
<i>Capsella bursa - pastoris</i>	<i>Brassicaceae</i>	10	2
<i>Descurainia sophia</i>	<i>Brassicaceae</i>	14	8
<i>Euphorbia helioscopia</i>	<i>Euphorbiaceae</i>	10	3
<i>Fagopyrum esculentum</i>	<i>Polygonaceae</i>	2	0
<i>Fallopia convolvulus</i>	<i>Polygonaceae</i>	2	1
<i>Fumaria officinalis</i>	<i>Papaveraceae</i>	13	4
<i>Galinsoga parviflora</i>	<i>Asteraceae</i>	1	0
<i>Galium aparine</i>	<i>Rubiaceae</i>	2	0
<i>Geranium rotundifolium</i>	<i>Geraniaceae</i>	6	2
<i>Chenopodium album</i>	<i>Amaranthaceae</i>	4	0
<i>Lactuca serriola</i>	<i>Asteraceae</i>	3	1
<i>Lamium purpureum</i>	<i>Lamiaceae</i>	4	1
<i>Lotus corniculatus</i>	<i>Fabaceae</i>	1	0
<i>Mercurialis annua</i>	<i>Euphorbiaceae</i>	6	0
<i>Papaver rhoeas</i>	<i>Papaveraceae</i>	12	6
<i>Phacelia tanacetifolia</i> (intercrop)	<i>Boraginaceae</i>	4	3
<i>Plantago lanceolata</i>	<i>Plantaginaceae</i>	3	0
<i>Raphanus raphanistrum</i>	<i>Brassicaceae</i>	5	3
<i>Rumex obtusifolius</i>	<i>Polygonaceae</i>	2	0
<i>Silene alba</i>	<i>Caryophyllaceae</i>	7	1
<i>Sinapis alba</i> (intercrop)	<i>Brassicaceae</i>	25	14
<i>Solanum nigrum</i>	<i>Solanaceae</i>	1	1
<i>Sonchus arvensis</i>	<i>Asteraceae</i>	3	0
<i>Stellaria media</i>	<i>Caryophyllaceae</i>	4	1
<i>Sisymbrium officinale</i>	<i>Brassicaceae</i>	2	1
<i>Taraxacum officinale</i>	<i>Asteraceae</i>	5	1
<i>Thlaspi arvense</i>	<i>Brassicaceae</i>	13	6
<i>Trifolium repens</i>	<i>Fabaceae</i>	2	0

<i>Tripleurospermum inodorum</i>	<i>Asteraceae</i>	3	1
<i>Urtica dioica</i>	<i>Urticaceae</i>	5	1
<i>Veronica persica</i>	<i>Plantaginaceae</i>	4	1
<i>Vicia hirsuta</i>	<i>Fabaceae</i>	2	0
<i>Viola arvensis</i>	<i>Violaceae</i>	24	9
Total	17	413	160

Supplementary Table S2. Primers used in this study.

Primer Name	Sequence (3′-5′)	Nucleotide Position (MN497806)	PCR Fragment Length (bp)	Detection Methods	qPCR Efficiency	Reference
luteoviruses-F	GCTCTAGAATTGTTAATGAITACGGTCG	Generic Primery	610	RT-PCR		[33]
luteoviruses-R	CACGCGTCIACCTATTTIGGITTITG					
TuYVF-K1	TACGGTCGTGGGTAGGAGAA	3488-3507	185	qPCR	1.98	In this study
TuYVR-K1	TCGAACCTGCTCCTCTGGTA	3672-3653				
TuYVF-K2	GAGCTGGACCCACACTGTA	3867-3885	136		1.90	[34]
TuYVR-K2	ATTGGTCCTCGGCAACGTCG	4002-3983				
TuYV_5cpF	ATCCAGCGTCCGTTGAACTT	3206-3225	797	RT-PCR/Sequencing		In this study
TuYVR-K2	ATTGGTCCTCGGCAACGTCG	4002-3983				[34]
TuYV_5rtpF	CGACCTAGACGACGACGAAG	3603-3622	1072	Sequencing		In this study
TuYV_5rtpR	CAGCGGGTCCAACAACAAAG	4674-4655				
TuYV_3rtpF	AACCAACCTCAAGCACCACA	4399-4418	670			
TuYVF6-AS	TTTGACGACATAGCCTCTTC	5068-5049				
TuYV3terF1	CCGGAGAAGGAAAACCTCCGA	4857-4876	696			
TuYV3terR1	TCGCCTCGTATCACTACCAAC	5552-5532				

Table S3. TuYV isolates from the Czech and Slovak Republics and reference isolates of the read-through domain (RTD) gene sequence analyzed in this study.

Host	Location	Virus Isolate	Accession Number
<i>Brassica napus</i>	Praha, Czech Republic	No28dobrovizCZ	OP699023
<i>Brassica napus</i>	Praha, Czech Republic	No39stredCZ	OP699024
<i>Brassica napus</i>	Kladno, Czech Republic	No14pokornyCZ	OP699025
<i>Brassica napus</i>	Kladno, Czech Republic	No25kdolinuCZ	OP699026
<i>Brassica napus</i>	Mělník, Czech Republic	No33repinCZ	OP699027
<i>Brassica napus</i>	Mělník, Czech Republic	NoA3repinCZ	OP699028
<i>Brassica napus</i>	Mělník, Czech Republic	NoA9melnikCZ	OP699029
<i>Brassica napus</i>	Mladé Boleslav, Czech Republic	NoA13breznoCZ	OP699030
<i>Brassica napus</i>	Chomutov, Czech Republic	NoA2beznoCZ	OP699031
<i>Brassica napus</i>	Senec, Slovak Republic	NoS12vbielSK	OP699032
<i>Brassica napus</i>	Galanta, Slovak Republic	NoS2vulanySK	OP699033
<i>Arctium lappa</i>	Mělník, Czech Republic	No28repinCZ	OP699034
<i>Capsella bursa-pastoris</i>	Praha, Czech Republic	NoC8cenkovCZ	OP699035
<i>Capsella bursa-pastoris</i>	Galanta, Slovak Republic	NoS3jelkaSK	OP699036
<i>Descurainia sophia</i>	Kladno, Czech Republic	No16pokornyCZ	OP699037
<i>Descurainia sophia</i>	Praha, Czech Republic	No24dobrovizCZ	OP699038
<i>Euphorbia helioscopia</i> #	Mělník, Czech Republic	No35repinCZ	OP699049
<i>Fumaria officinalis</i> #	Mělník, Czech Republic	No29repinCZ	OP699050
<i>Geranium rotundifolium</i> #	Kladno, Czech Republic	No12pokornyCZ	OP699021
<i>Lamium purpureum</i> #	Mělník, Czech Republic	No37repinCZ	OP699022
<i>Papaver rhoeas</i>	Kladno, Czech Republic	No8agrosCZ	OP699039
<i>Papaver rhoeas</i>	Mělník, Czech Republic	No30repinCZ	OP699040
<i>Papaver rhoeas</i>	Chomutov, Czech Republic	No49beznoCZ	OP699041
<i>Papaver rhoeas</i>	Senec, Slovak Republic	NoS11velbielSK	OP699042
<i>Phacelia tanacetifolia</i>	Mělník, Czech Republic	NoC9melnikCZ	OP699043
<i>Sinapis alba</i>	Kladno, Czech Republic	No10louckaCZ	OP699044
<i>Sisymbrium officinale</i>	Kladno, Czech Republic	No15pokornyCZ	OP699045
<i>Stellaria media</i> #	Kladno, Czech Republic	No3zajezdCZ	OP699051
<i>Thlaspi arvense</i>	Praha, Czech Republic	No47tuchmericeCZ	OP699046
<i>Tripleurospermum inodorum</i>	Mělník, Czech Republic	No43repinCZ	OP699047
<i>Veronica persica</i> #	Kladno, Czech Republic	No3agrosCZ	OP699053
<i>Veronica persica</i> #	Galanta, Slovak Republic	No4jelkaSK	OP699052
<i>Viola arvensis</i>	Žilina, Slovak Republic	NoS1strazaSK	OP699048
<i>Brassica napus</i>	Greece	Geo15	MT955611
<i>Brassica napus</i>	Greece	Geo7	MT955610
<i>Brassica napus</i>	Greece	1_1	MT955607

<i>Brassica napus</i>	Greece	12	MT955609
<i>Brassica napus</i>	Greece	Geo1	MT955608
<i>Brassica napus</i>	Australia	MK106	MT586584
<i>Brassica napus</i>	Australia	C2016b	MT586588
<i>Brassica napus</i>	Australia	MK105	MT586595
<i>Brassica napus</i>	Australia	C20	MT586597
<i>Brassica napus</i>	Australia	5514b	MT586576
<i>Brassica napus</i>	Australia	MK107	MT586590
<i>Brassica napus</i>	Australia	5514b	MT586576
<i>Brassica napus</i>	Japan	NAPBrYV	LC428361
<i>Lactuca sativa</i>	France	FL1	NC_003743
<i>Pisum sativum</i>	UK	The Deepings	OK030792
<i>Pisum sativum</i>	UK	Cambridge	OK030793
<i>Pisum sativum</i>	UK	Canterbury	OK030767
<i>Pisum sativum</i>	UK	Chirnside	OK030785
<i>Pisum sativum</i>	Germany	Salzlandkreis	MN497803
<i>Pisum sativum</i>	Germany	Muenster17	MN497806
<i>Pisum sativum</i>	Germany	JKI29344	MK450520
<i>Pisum sativum</i>	Germany	Salzlandkreis	MN497802
<i>Pisum sativum</i>	Germany	Salzlandkreis	MN497804
<i>Pisum sativum</i>	Australia	MK109	MT586579
<i>Sinapis arvensis</i>	Australia	5248	MT586581
<i>Lens culinaris</i>	Australia	MK113	MT586589
<i>Allium sativum</i>	Australia	5752	LC701523
<i>Lens culinaris</i>	Australia	L314	MT586574
<i>Arachis hypogaea</i>	Turkey	EDI1	MZ442679
<i>Raphanus raphanistrum</i>	Germany	JKI29345	MK450519
<i>Physalis pubescens</i>	Germany	DSMZPV1209	MW854285
<i>Beta vulgaris</i>	Australia	Br12	MT586598
<i>Cicer arietinum</i>	Australia	5511	MT586596
<i>Nicotiana tabacum</i>	China	Anhui	KR706247
<i>Brassica oleracea</i>	Philippines	21706265BrYV	MW537050
<i>Brassica oleracea</i>	Brazil	BrYV Bra1	MZ313372
<i>Brassica rapa</i>	South_Korea	CheongsongBrYV	KF923236
<i>Raphanus raphanistrum</i>	Australia	BrYV-Tas	OM469309
<i>Beta vulgaris</i>	UK	BChV2a	NC_002766

#partial RTD sequence and not included in sequence analysis.