

Supplementary Table 1. District wise distribution of DNA-A, DNA-B and betasatellite associated with *Abelmoschus esculentus*

	DNA-A/DNA-A like				Betasatellite			DNA-B		
Place	Year	Species	Acronyms	Accession no.	Year	Species	Accession no.	Year	Species	Accession no.
Trichy	2005	Bhendi yellow vein mosaic virus	BYVMV_[In:Tri:2005]	GU112052	2006	BYVMV_[In:Tri:2006]	GU111970	—	—	—
Trichy	—	—	—	—	2006	BYVIB_[In:Tri:2006]	GU111983	—	—	—
Tumkur	2006	Bhendi yellow vein India virus	BYVIV_[In:Tum:2006]	GU112049	—	—	—	—	—	—
Tumkur	—	—	—	—	—	—	—	2007	BYVMV_[In:Tum:2007]	HQ586005
Thadagan	2006	Bhendi yellow vein India virus	BYVIV_[In:Tha:2006]	GU112047	2006	BYVIB_[In:Tha:2006]	GU111987	—	—	—
Thadagan	—	—	—	—	2006	BYVMB_[In:Tha:2006]	GU111971	—	—	—
Jalgov	2006	Bhendi yellow vein India virus	BYVIV_[In:jal:2006]	GU112046	2006	BYVIB_[In:jal:2006]	GU111984	—	—	—
Dharwad	2006	Bhendi yellow vein India virus	BYVIV_[In:Dha:2006]	NC_014845	—	—	—	—	—	—

Bamanpura	2006	Bhendi yellow vein India virus	BYVIV_[In:Bam:2006]	GU112039	—	—	—	—	—	—
Sonipat	2005	Bhendi yellow vein India virus	BYVIV_[In:Son:2005]	GU112050	—	—	—	—	—	—
Varapamatti	2006	Bhendi yellow vein India virus	BYVIV_[In:Var:2006]	GU112042	—	—	—	—	—	—
Hyderabad	2005	Bhendi yellow vein India virus	BYVIV_[In:Hyd:2005]	GU112035	—	—	—	—	—	—
Jalgaon	2009	Okra enation leaf curl virus	OELCuV_[In:Jal:2009]	KJ462074	—	—	—	—	—	—
Raichur	2022	Okra enation leaf curl virus	OELCuV_[In:Rai:2022]	OR359280	—	—	—	—	—	—
Sonipat	2006	Okra enation leaf curl virus	OELCuV_[In:Son:2006]	GU111996	—	—	—	—	—	—
Bihar	2009	Radish leaf	RLCV_[In:Bih:2009]	GU732203	—	—	—	—	—	—

		curl virus-Hajipur								
Bihar	—	—	—	—	2010	ToLCBB_[In:Bih:2010]	GU732208	—	—	—
Bihar	—	—	—	—	2014	BYVMB_[In:Bih:2014]	KT390399	—	—	—
Bihar	—	—	—	—	2014	BYVIB_[In:Bih:2014]	KT390401	—	—	—
Varanasi	2009	Okra enation leaf curl virus	OELCuV_[In:Var:2009]	KJ462083	—	—	—	—	—	—
Munthal	2006	Okra enation leaf curl virus	OELCuV_[In:Mun:2006]	NC_014894	—	—	—	—	—	—
Munthal	—	—	—	—	2006	BYVMB_[In:Mun:2006]	GU111964	—	—	—
Karnal	2005	Bhindhi Yellow vein India virus	BYVIV_[In:Kar:2005]	GU112004	—	—	—	—	—	—
Karnal	2004	Tomato leaf curl New Delhi virus	ToLCNDV_[In:Kar:2004]	GU112082	—	—	—	2004	ToLCNDV_[In:Kar:2004]	GU112083
Guntur	2006	Tomato leaf curl New Delhi virus	ToLCNDV_[In:Gun:2006]	GU112086	—	—	—	2006	ToLCNDV_[In:Gun:2006]	GU112087
Guntur	—	—	—	—	2006	BYVMB_[In:Gun:2006]	GU111969	—	—	—

Aurangabad	2006	Tomato leaf curl New Delhi virus	ToLCNDV_[In:Aur:2006]	GU112088	—	—	—	2006	ToLCNDV_[In:Aur:2006]	GU112089
Aurangabad	—	—	—	—	2006	BYVMB_[In:Aur:2006]	GU111977	—	—	—
Aurangabad	—	—	—	—	2006	BYVIB_[In:Aur:2006]	NC_014846	—	—	—
Dhanbad	2008	Bhendi yellow vein India virus	BYVIV_[In:Dha:2008]	HM590503	2006	BYVIB_[In:Dha:2006]	GU111989	—	—	—
Udaipur	2014	Bhendi yellow vein mosaic virus	BYVMV_[In:Uda:2014]	KT390324	2014	BYVMB_[In:Uda:2014]	KT390379	—	—	—
Palampur	2010	Bhendi yellow vein mosaic virus	BYVMV_[In:Pal:2010]	FR694925	—	—	—	—	—	—
Odisha	2013	Bhendi yellow vein mosaic virus	BYVMV_[In:Odi:2013]	MK650411	—	—	—	—	—	—
Ropar	2010	Bhendi yellow vein mosaic virus	BYVMV_[In:Rop:2010]	JX181785	—	—	—	—	—	—
Lucknow	2007	Bhendi yellow vein mosaic	BYVMV_[In:Luc:2007]	KC501921	—	—	—	—	—	—

		virus								
Varanasi	2008	Bhendi yellow vein India virus	BYVIV_[In:Var:2008]	HM590505	2014	BYVIB_[In:Var:2014]	KT390485	—	—	—
Raichur	2005	Bhendi yellow vein mosaic virus	BYVMV_[In:Rai:2005]	GU112074	2005	BYVMB_[In:Rai:2005]	GU111968	—	—	—
Bhemarayanagudi	2005	Bhendi yellow vein mosaic virus	BYVMV_[In:Bhe:2005]	GU112069	—	—	—	—	—	—
Chintamani	2006	Bhendi yellow vein mosaic virus	BYVMV_[In:Chi:2006]	GU112065	—	—	—	—	—	—
New Delhi	2005	Bhendi yellow vein mosaic virus	BYVMV_[In:Nde:2005]	GU112063	—	—	—	—	—	—
Kerala	2005	Bhendi yellow vein mosaic virus	BYVMV_[Ind:Ker:2005]	GU112060	—	—	—	—	—	—
Chelur	2006	Bhendi yellow vein mosaic virus	BYVMV_[In:Che:2006]	GU112059	—	—	—	—	—	—
Kaivara	2006	Bhendi	BYVMV_[In:Kai:2006]	GU112058	2006	BYVMB_[In:Kai:2006]	GU111976	—	—	—

		yellow vein mosaic virus								
Varanasi	2005	Bhendi yellow vein mosaic virus	BYVMV_[In:Var:2005]	GU112056	2014	BYVMB_[In:Var:2014]	KT390490	—	—	—
Srinivaspur	2006	Bhendi yellow vein mosaic virus	BYVMV_[In:Sri:2006]	GU112014	2006	BYVIB_[In:Sri:2006]	GU111993	—	—	—
Tirupathi	2005	Bhendi yellow vein mosaic virus	BYVMV_[In:Tir:2005]	GU112009	2006	BYVMB_[In:Tir:2006]	GU111978	—	—	—
Karnal	2005	Bhendi yellow vein mosaic virus	BYVMV_[In:Kar:2005]	GU112008	2006	BYVMB_[In:Kar:2006]	GU111980	2006	BYVMV_[In:Kar:2006]	HQ586006
Andhra Pradesh	2014	Bhendi yellow vein India virus	BYVIV_[In:And:2014]	MK650413	—	—	—	—	—	—
Thondamuthur	2022	Bhendi yellow vein mosaic virus	BYVMV_[In:Tho:2022]	PP060926	—	—	—	—	—	—
Pune	2012	Bhendi yellow vein	BYVIV_[In:Pun:2012]	KF471062	—	—	—	—	—	—

		India virus								
Aurangabad	2006	Bhendi yellow vein India virus	BYVIV_[In:Aur:2006]	GU112030	—	—	—	—	—	—
Guntur	2006	Bhendi yellow vein India virus	BYVIV_[In:Gun:2006]	GU112027	2006	BYVIB_[In:Gun:2006]	GU111992	—	—	—
Kolkata	2005	Bhendi yellow vein India virus	BYVIV_[In:Kol:2005]	GU112025	—	—	—	—	—	—
Kolkata	—	—	—	—	2006	BYVMB_[In:Kol:2006]	GU111973	—	—	—
Siddalaghata	2006	Bhendi yellow vein India virus	BYVIV_[In:Sid:2006]	GU112024	—	—	—	—	—	—
Dindigal	2006	Bhendi yellow vein India virus	BYVIV_[In:Din:2006]	GU112022	—	—	—	—	—	—
Thondawada	2005	Bhendi yellow vein India virus	BYVIV_[In:Tho:2005]	GU112021	—	—	—	—	—	—
Kalyani	2005	Bhendi yellow vein India	BYVIV_[In:Kal:2005]	GU112019	—	—	—	—	—	—

		virus								
Kalyani	—	—	—	—	—	—	—	2006	BYVMV_[In:Kal:2006]	KC501923
Bangalore	2005	Bhendi yellow vein mosaic virus	BYVMV_[In:Ban:2005]	GU112064	—	—	—	—	—	—
Bangalore	—	—	—	—	2006	BYVIB_[In:Ban:2006]	GU111991	—	—	—
Bangalore	—	—	—	—	—	—	—	2005	ToLCNDV_[In:Ban:2005]	GU112085
Pandarahalli	2006	Bhendi yellow vein mosaic virus	BYVMV_[In:Pan:2006]	GU112073	2006	BYVMB_[In:Pan:2006]	GU111974	2006	BYVMV_[In:Pan:2006]	HQ586007
Pandarahalli	—	—	—	—	2006	BYVIB_[In:Pan:2006]	GU111990	—	—	—
Phalaghat	2006	Bhendi yellow vein mosaic virus	BYVMV_[In:Pha:2006]	GU112072	—	—	—	—	—	—
Coimbatore	—	—	—	—	2006	BYVIB_[In:Coi:2006]	GU111986	—	—	—
Coimbatore	—	—	—	—	2005	BYVMB_[In:Coi:2005]	GU111975	—	—	—
Stana	—	—	—	—	2014	BYVIB_[In:Sta:2014]	KT390393	—	—	—
Rewa	—	—	—	—	2014	BYVIB_[In:Rew:2014]	KT390387	—	—	—
Rewa	—	—	—	—	2014	BYVMB_[In:Rew:2014]	KT390386	—	—	—
West Bengal	—	—	—	—	2018	BYVMB_[In:Wes:2018]	MN089579	—	—	—
Rajasthan	—	—	—	—	2014	BYVMB_[In:Raj:2014]	KT390370	—	—	—
Kota	—	—	—	—	2014	BYVMB_[In:Kot:2014]	KT390368	—	—	—
Bundi	—	—	—	—	2014	BYVMB_[In:Bun:2014]	KT390366	—	—	—
Mirzapur	—	—	—	—	2013	BYVMB_[In:Mir:2013]	KT390352	—	—	—

Supplementary Table 2. List of alphasatellite associated with *Abelmoschus esculentus* in India

Place	Year	Species	Acronyms	Accession no.
Haryana	2018	Bendhi Yellow Vein Mosaic Alphasatellite	BYVA_[In:Har:2018]	NC_039083
Haryana	2012	Bendhi Yellow Vein Mosaic Alphasatellite	BYVA_[In:Har:2012]	FN658717