

Validated methods for authorized GMO

試験法
ダイズ

crop plant	method	detection of	probe & primer name	sequence	amplicon (bp)	standard plasmid or control sample
Soybean (kernel)	quantitative Real-time PCR	Le1 (endogenous gene)	Le1n 02-5 Le1n 02-3' Le1-Taq	Le1-n02 5-GCCCTACTCCACC00CA-3' 5-GCCCATCTG CAAGCCTTTTT-3' 5-FAM-AGGTTGCGCGCTCCTTCAACTTCC-TAMRA-3'	118	
	quantitative Real-time PCR	RRS	RRS 01-5' RRS 01-3' RRS-Taq	RRS-01 5-CCTTAGGATTTAGAGTCAAGTGG-3' 5-GACTTGTGCGCGGAATG-3' 5-FAM-GGCAACCCGCCCAATCC-TAMRA-3'	121	GM Soybean(RRS) Detection Plasmid Set-CoE1/TE- GM Soybean(RRS) Detection Plasmid Set-CoE1/TE-
	quantitative Real-time PCR	LLS	KVM175 SMO001 TM031	KVM175 & SMO001 5-GCAAAAAGCGGTAGCTCCT-3' 5-ATTCAGGCTGCGCACTGT-3' 5-FAM-CGGTCTCCGATCGCCCTCC-TAMRA-3'	64	GM Soybean(LLS) Detection Plasmid Set-CoE1/TE- GM Soybean(LLS) Detection Plasmid Set-CoE1/TE-
	quantitative Real-time PCR	RRS2	MON89788-F MON89788-R MON89788-P	MON89788-F & MON89788-R 5-TCCCGCTTAGCGCTCAAT-3' 5-TGCAAGCAGGACTCGAGAA-3' 5-FAM-CTGAAGCGGGAAACGACAATCTG-TAMRA-3'	139	GM Soybean(RR2) Detection Plasmid Set-CoE1/TE- GM Soybean(RR2) Detection Plasmid Set-CoE1/TE-
Soybean (processed food)	qualitative Real-time PCR	Le1 (endogenous gene)	Le1n 02-5 Le1n 02-3' Le1-Taq	Le1-n02 5-GCCCTACTCCACC00CA-3' 5-GCCCATCTG CAAGCCTTTTT-3' 5-FAM-AGGTTGCGCGCTCCTTCAACTTCC-TAMRA-3'	118	
	qualitative Real-time PCR	P35S	P35S 1-5' P35S 1-3' P35S-Taq	P35S-1 5-ATTGATGTGATATCTCCACTGACGT-3' 5-CCTCTCCAAATGAAATGAACCTTCT-3' 5-FAM-CCCATACTCCTCGAAGACCCCTTCT-TAMRA-3'	101	
	qualitative Real-time PCR	RRS2	MON89788-F MON89788-R MON89788-P	MON89788-F & MON89788-R 5-TCCCGCTTAGCGCTCAAT-3' 5-TGCAAGCAGGACTCGAGAA-3' 5-FAM-CTGAAGCGGGAAACGACAATCTG-TAMRA-3'	139	
トウモロコシ (kernel: screening1)	quantitative Real-time PCR	SSIb (endogenous gene)	SSIb 3-5' SSIb 3-3' SSIb-Taq	SSIb-3 5-CCAATCCTTTGACATCTGCTCC-3' 5-GATCAGCTTTGGTCCGGA-3' 5-FAM-AGCAAAGTCAGAGCGCTGCAATGCA-TAMRA-3'	114	
	quantitative Real-time PCR	P35S	P35S 1-5' P35S 1-3' P35S-Taq	P35S-1 5-ATTGATGTGATATCTCCACTGACGT-3' 5-CCTCTCCAAATGAAATGAACCTTCT-3' 5-FAM-CCCATACTCCTCGAAGACCCCTTCT-TAMRA-3'	101	
	quantitative Real-time PCR	GA21	GA21-3-5' GA21-3-3' GA21-Taq	GA21-3 5-GAAGCCTCGGCAAGCTCA-3' 5-ATCCGGTTGAAAGCGACTT-3' 5-FAM-AGAAGATCCGCTGATGGCCG-TAMRA-3'	133	
	quantitative Real-time PCR	MIR604	MIR604 primer F MIR604 primer R MIR604 probe	MIR604-1 5-GGCGACCAATTCACAG-3' 5-GGTATAACGTGACTCCCTTAATTCT-3' 5-FAM-AGGCGGGAAACGACAATCTGATCATG-TAMRA-3'	76	
	quantitative Real-time PCR	MIR162	MIR162-f1 MIR162-r1 MIR162-p1	MIR162-1 5-GGCGGGTGTGATCTGTACTAG-3' 5-TGCTTATCTGTTGCCCTCAGA-3' 5-FAM-TCTAGACAATTCAGTACATTAACAGCTCCGCCA-TAMRA-3'	92	
Maize (kernel: screening2) (individual kernel) (processed food)	multiplex Real-time PCR	SSIb (endogenous gene)	SSIb 3-5' SSIb 3-3' SSIb-TaqV	SSIb-3 5-CCAATCCTTTGACATCTGCTCC-3' 5-GATCAGCTTTGGTCCGGA-3' 5-VIC-AGCAAAGTCAGAGCGCTGCAATGCA-TAMRA-3'	114	Maize GMO Standard ERM-BF413gk (10% MON810) Maize GMO Standard ERM-BF413ak (Blank MON810)
	multiplex Real-time PCR	P35S	P35S 1-5' P35S 1-3' P35S-Taq	P35S-1 5-ATTGATGTGATATCTCCACTGACGT-3' 5-CCTCTCCAAATGAAATGAACCTTCT-3' 5-FAM-CCCATACTCCTCGAAGACCCCTTCT-TAMRA-3'	101	
	multiplex Real-time PCR	TNOS	NOS ter 3-5' NOS ter 2-3' NOS-Taq	NOS ter-2 5-GCATATAATTAATGACATGATGATGAC-3' 5-CGCTATATTTGTTTCTATCGCT-3' 5-FAM-AGATGGGTTTTTATGATTAGTCCGCCA-TAMRA-3'	110	
Maize (group testing)	multiplex Real-time PCR	SSIb (endogenous gene)	SSIb 3-5' SSIb 3-3' SSIb-TaqHB	SSIb-3 5-CCAATCCTTTGACATCTGCTCC-3' 5-GATCAGCTTTGGTCCGGA-3' 5-HEX-AGCAAAGTCAGAGCGCTGCAATGCA-BHQ1-3'	114	
	multiplex Real-time PCR	P35S	P35S 1-5' P35S 1-3' P35S-TaqFB	P35S-1 5-ATTGATGTGATATCTCCACTGACGT-3' 5-CCTCTCCAAATGAAATGAACCTTCT-3' 5-FAM-CCCATACTCCTCGAAGACCCCTTCT-BHQ1-3'	101	
	multiplex Real-time PCR	TNOS	NOS ter 2-5' NOS ter 2-3' NOS-TaqFB	NOS ter-2 5-GTCTGCGATGATTATCATATAATTCTG-3' 5-CGCTATATTTGTTTCTATCGCT-3' 5-FAM-AGATGGGTTTTTATGATTAGTCCGCCA-BHQ1-3'	151	
	multiplex Real-time PCR	IPC	IPC 1-5' IPC 1-3' IPC-TaqFB	IPC-1 5-CGAGCTTACAAAGCGAGTT-3' 5-TGGCTGTACACACAGCATAG-3' 5-TAGCTTAAGCATCTGGCTGCGG-3'	100	Internal Positive Control
	real-time PCR array	SSIb (endogenous gene)	SSIb 3-5' SSIb 3-3' SSIb-Taq	SSIb-3 5-CCAATCCTTTGACATCTGCTCC-3' 5-GATCAGCTTTGGTCCGGA-3' 5-FAM-AGCAAAGTCAGAGCGCTGCAATGCA-TAMRA-3'	114	GM Maize Detection Positive Control Plasmid GM Maize Detection Positive Control Plasmid
Maize (determination of GM event)	real-time PCR array	BI11	BI11 3-5' BI11 3-3' BI11-2-Taq	BI11-3 5-AAAGACCAACACAGCGCG-3' 5-CAATGCTTCTCCACCAACTACT-3' 5-FAM-GAACCATGGACAAACCAACCAATCA-TAMRA-3'	127	GM Maize Detection Positive Control Plasmid GM Maize Detection Positive Control Plasmid
	real-time PCR array	Event176	E176 2-5' E176 2-3' E176-Taq	Event176-3 5-TGTTCAACGAGCAACAG-3' 5-ACCTCACTTTGCGAAGACATCT-3' 5-FAM-CGACGCTGACCGACTCCACATCGA-TAMRA-3'	100	GM Maize Detection Positive Control Plasmid GM Maize Detection Positive Control Plasmid
	real-time PCR array	GA21	GA21 3-5' GA21 3-3' GA21-2-Taq	GA21-3 5-GAAGCCTCGGCAAGCTCA-3' 5-ATCCGGTTGAAAGCGACTT-3' 5-FAM-AGAAGATCCGCTGATGGCCG-TAMRA-3'	133	GM Maize Detection Positive Control Plasmid GM Maize Detection Positive Control Plasmid
	real-time PCR array	MON810	M810 2-5' M810 2-3' M810-Taq	MON810-3 5-GATGCTTCTCCAGTGTGA-3' 5-GGATGCACTGTTGATGTTG-3' 5-FAM-AGATACCAAGCGCCATGGACAACA-TAMRA-3'	113	GM Maize Detection Positive Control Plasmid GM Maize Detection Positive Control Plasmid
	real-time PCR array	MON863	M863 1-5' M863 1-3' MON863-Taq	MON863-3 5-TGACCTACTTGTTCGATGG-3' 5-GCATTGTAGTGGCCACCTTC-3' 5-FAM-CACCCCAAGTACCAAGCTTCCGA-TAMRA-3'	111	Maize GMO Standard ERM-BF416d (10% MON863)
	real-time PCR array	NK603	NK603 1-5' NK603 1-3' NK603-Taq	NK603-3 5-GGCGAGGAGGCTTGTAGC-3' 5-ATCCGACTCTCTTCAAGCATA-3' 5-FAM-ATGACCTCGAATGCTTGTAAAGCGGC-TAMRA-3'	113	Maize GMO Standard ERM-BF419f (5% NK603)
	real-time PCR array	T25	PM1 revPM1 FBP3	T25-3 5-TCAATTGCCCTTTGGTCTTCTGA-3' 5-TACGACATGATCTCTCCAC-3' 5-FAM-TCATTGAGTGGTTCGCGCATTGTG-TAMRA-3'	155	Maize Bayer CropScience Event T25 Leaf DNA 0306-H6
	real-time PCR array	TC1507	TC1507 1-5' TC1507 1-3' TC1507-Taq	TC1507-3 5-TGAGTGTATCCAGTACTGCGCA-3' 5-ATGTTAGTCGCAAGCAACCG-3' 5-FAM-ACTCGAGTAAGGATCCGCGAGCAG-TAMRA-3'	111	Maize GMO Standard ERM-BF418d (10% 1507)
	real-time PCR array	MIR604	MIR604 primer F MIR604 primer R MIR604 probe	MIR604-1 5-GGCGACCAATTCACAG-3' 5-GGTATAACGTGACTCCCTTAATTCT-3' 5-FAM-AGGCGGGAAACGACAATCTGATCATG-TAMRA-3'	76	Maize GMO Standard ERM-BF423d (10% MIR604) Maize Syngenta Event MIR604 Powder 0607-A2
	real-time PCR array	MON88017	M88017 1-5' M88017 1-3' M88017-1-Taq	MON88017-3 5-ATCGTGTGACAACGCTGACA-3' 5-CATATTGACCATCATACTATTGCT-3' 5-FAM-TGCCGAGTATGACGGGTGACATATATCA-TAMRA-3'	150	Maize Monsanto Company Event MON88017 Powder 0406-D
	real-time PCR array	DAS-59122-7	DAS59122-7-rb1f DAS59122-7-rb1r DAS59122-7-rb1s probe	DAS59122-7-3 5-GGGAAGCAAGAAAGCGGCTC-3' 5-CCTTAATTCTCCGCTCATGATCA-3' 5-FAM-TTAAACTGAAGCGGGAAACGACA-TAMRA-3'	86	Maize GMO Standard ERM-BF424 (0, 0.1, 1, 10% 59122)
	real-time PCR array	MON89034	MON89034 primer1 MON89034 primer2 MON89034 probe	MON89034-3 5-TTCTCCATTTGACCATCATACTATT-3' 5-CGGTATCTAATAACCGGTTTTTAAA-3' 5-FAM-ATCCCCGGAAATATGTT-MBNFQ-3'	77	Maize Monsanto Company Event MON89034 Powder 0906-E
	real-time PCR array	MIR162	MIR162-f1 MIR162-r1 MIR162-p1	MIR162-1 5-GCGGGTGTCTACTTGTACTAG-3' 5-TGCTTATCTGTTGCCCTCAGA-3' 5-FAM-TCTAGACAATTCAGTACATTAACAGCTCCGCCA-TAMRA-3'	92	Maize Syngenta Event MIR 162 Powder 1208-A
Papaya	qualitative Real-time PCR	CHY	Q-Chy-1F2 Q-Chy-2R Q-Chy-P(new)	Q-Chy-1F2 & Q-Chy-2R 5-CCATGCGATCTCCCA-3' 5-CATGCTAGCAATTGTAACACTAGCTAA-3' 5-FAM-TTCCTTCACTCAATCCACTCTTGAGA-TAMRA-3'	72	
	qualitative Real-time PCR	PRSV-cp (55-1)	PRSV-cp F PRSV-cp R PRSV-cp P	PRSV-cp F & PRSV-cp R 5-CAGCCTTAGATGCTTCAAGAAAGA-3' 5-TCCGCTCCATCCAGTCTATT-3' 5-FAM-TCTTCTGACTTCCGCGCAACAT-TAMRA-3'	71	GM Papaya Detection 55-1 Positive Control Plasmid 2 GM Papaya Detection 55-1 Positive Control Plasmid 2

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