Supplementary Material

Table S1
Full Bottle Gourd (*Lagenaria siceraria*) Sample Details

Region	Cultivar Code	Location (Cultivar)	Source[a]	Representative Individual
Asia	020(1)Ind	Indonesia	Charles Heiser, Indiana University, Bloomington, Indiana, USA	020(1)Ind-03
Asia	020(2)Ind	Indonesia	Charles Heiser, Indiana University, Bloomington, Indiana, USA	020(2)Ind-02
Asia	061Ind	India	Charles Heiser, Indiana University, Bloomington, Indiana, USA	061Ind-01
Asia	101Ind	India	Charles Heiser, Indiana University, Bloomington, Indiana, USA	101Ind-01
Asia	111Mal	Malaysia	Charles Heiser, Indiana University, Bloomington, Indiana, USA	111Mal-01
Asia	149Phi	Philippines	Charles Heiser, Indiana University, Bloomington, Indiana, USA	149Phi-01
Asia	157Phi	Philippines	Charles Heiser, Indiana University, Bloomington, Indiana, USA	157Phi-01
Asia	159Ind	India	Charles Heiser, Indiana University, Bloomington, Indiana, USA	159Ind-02
Asia	161Mal	Malaysia	Charles Heiser, Indiana University, Bloomington, Indiana, USA	161Mal-02
Asia	174Phi	Philippines	Charles Heiser, Indiana University, Bloomington, Indiana, USA	174Phi-01
Asia	188Tha	Thailand	Charles Heiser, Indiana University, Bloomington, Indiana, USA	188Tha-02
Asia	195	Yuwa-machi, Japan	Mike Burtenshaw, The Open Polytechnic of New Zealand, Lower Hutt, New Zealand	195-08C
Asia	AK	Akita, Japan	Peter Matthews, National Museum of Ethnology, Osaka, Japan	AK-01
Polynesia	183	Bay of Plenty, New Zealand	Mike Burtenshaw, The Open Polytechnic of New Zealand, Lower Hutt, New Zealand	183-23C

Table S1 continued…

Polynesia	BR	New Zealand (Bottle Ruku)	Mike Burtenshaw, The Open Polytechnic of New Zealand, Lower Hutt, New Zealand	BR-06
Polynesia	GA	New Zealand (Gourd 'A')	Richard Cross, New Zealand Institute for Crop and Food Research, Lincoln, New Zealand (authenticated by John Palmer, Christchurch)	GA-02C
Polynesia	GD	New Zealand (Gourd 'D')	Richard Cross, New Zealand Institute for Crop and Food Research, Lincoln, New Zealand (authenticated by John Palmer, Christchurch)	GD-03C
Polynesia	MA	New Zealand (Māori Gourd (1973-1974))	Steve Lewthwaite, New Zealand Institute for Crop and Food Research, Pukekohe, New Zealand (authenticated by John Palmer, Christchurch)	MA-01
Polynesia	MG	New Zealand (Māori Gourd)	Richard Cross, New Zealand Institute for Crop and Food Research, Lincoln, New Zealand (authenticated by John Palmer, Christchurch)	MG-01
Polynesia	NB	New Zealand (New Zealand Bottle)	Mike Burtenshaw, The Open Polytechnic of New Zealand, Lower Hutt, New Zealand	NB-04
Polynesia	NP	New Zealand (Nga Puhi)	Mike Burtenshaw, The Open Polytechnic of New Zealand, Lower Hutt, New Zealand	NP-06
Americas	006Cos	Costa Rica	Charles Heiser, Indiana University, Bloomington, Indiana, USA	006Cos-02
Americas	027Ecu	Ecuador	Charles Heiser, Indiana University, Bloomington, Indiana, USA	027Ecu-03
Americas	035BArg	Argentina	Charles Heiser, Indiana University, Bloomington, Indiana, USA	035BArg-03
Americas	036(1)Per	Peru	Charles Heiser, Indiana University, Bloomington, Indiana, USA	036(1)Per-03
Americas	036(2)Per	Peru	Charles Heiser, Indiana University, Bloomington, Indiana, USA	036(2)Per-02
Americas	037Per	Peru	Charles Heiser, Indiana University, Bloomington, Indiana, USA	037Per-03
Americas	051Bra	Brazil	Charles Heiser, Indiana University, Bloomington, Indiana, USA	051Bra-01
Americas	059Cos	Costa Rica	Charles Heiser, Indiana University, Bloomington, Indiana, USA	059Cos-01
Americas	079Mex	Mexico	Charles Heiser, Indiana University, Bloomington, Indiana, USA	079Mex-01
Americas	093Hop	Hopi, Arizona, USA	Charles Heiser, Indiana University, Bloomington, Indiana, USA	093Hop-01
Americas	152Mex	Mexico	Charles Heiser, Indiana University, Bloomington, Indiana, USA	152Mex-01
Americas	153Mex	Mexico	Charles Heiser, Indiana University, Bloomington, Indiana, USA	153Mex-01

Table S1 continued…

Americas	195Per	Peru	Charles Heiser, Indiana University, Bloomington, Indiana, USA	195Per-01
Americas	315Bra	Brazil	Charles Heiser, Indiana University, Bloomington, Indiana, USA	315Bra-01
Americas	407Bra	Brazil	Charles Heiser, Indiana University, Bloomington, Indiana, USA	407Bra-01
Africa	291Mad	Madagascar	Charles Heiser, Indiana University, Bloomington, Indiana, USA	291Mad-02
Africa	MR	Africa (Maranka)	Mike Burtenshaw, The Open Polytechnic of New Zealand, Lower Hutt, New Zealand	MR-05C

[a] Samples obtained from Charles Heiser are described in Heiser (1973a)

Table S2
ISSR and TAIL PCR Primer Sequences

Type	Marker	Primer Name	Primer Sequence (5′-3′)
ISSR[a]	BOP19_31	#846	CACACACACACACACART
	BOP19_35	#812	GAGAGAGAGAGAGAGAA
	BR01_19	#808	AGAGAGAGAGAGAGAGC
	MR06_24 and BOP19_27	#823	TCTCTCTCTCTCTCTCC
TAIL (Arbitrary Degenerate)[b]		TAIL-AD1	NGTCGASWGANAWGAA
		TAIL-AD2	GTNCGASWCANAWGTT
		TAIL-AD3	WGTGNAGWANCANAGA
TAIL (Specific)	BOP19_31	SP31-1L	TTGTATCCATTCAAAAGTTTCC
		SP31-2L	CAATAACAAAGAGTGGACTGG
		SP31-3L	TGATTACAGGAAACGAGGAGT
		SP31-1R	CCAGTCCACTCTTTGTTATTG
		SP31-2R	GGAAACTTTTGAATGGATACAA
		SP31-3R	TTTTGTTACTCTGCCACGGTT
	BOP19_35	SP35-1L	TGGTATAAAAGTAAGGACTCTA
		SP35-2L	GTCTTTTGAAGTAGCGTCGG
		SP35-3L	GGGCTTGTTTTATCTACTTGTT
		SP35-1R	TAGAGTCCTTACTTTTATACCA
		SP35-2R	TTCTCGTTTTCCTTTCTCCATT
		SP35-3R	CCTCCCTCGGTCATCTTCTA
	BR01_19	SP19-1L	AAAAGTTCGCCCCCAGCCG
		SP19-2L	GCCGAAAATGCCAAATCACCA
		SP19-3L	TCGGATGAAACTACTGAAATGA
		SP19-1R	GTGAGGAAAGGAAGAGAGAG
		SP19-2R	CGACTTTTCCGTGTGTGCGA
		SP19-3R	TGGTGATTTGGCATTTTCGGC
	MR06_24	SP24-1L	TTACTGTCTGCTCCTTCAAATC
		SP24-2L	AATAGAAATAAAGAGAGACCGA
		SP24-3L	CTGCTTCTATGGCTTTCTTCTT
		SP24-1R	TCGGGGAACTGGAGATTGTT
		SP24-2R	TCAAGGGAGAGAGTAAATGTTA
		SP24-3R	GAGGAGAAGGATAAAAACATAC
	BOP19_27	SP27-1L	GTCTGACTTCATCATTTTTATTTA
		SP27-2L	AACTATTTCAAAACACTTTAGAAG
		SP27-3L	TAAACCAAACACACCTTGAATAA
		SP27-1R	TGAAGTTTTCGGGTAGAGGG
		SP27-2R	TTATTCAAGGTGTGTTTGGTTTA
		SP27-3R	CTTCTAAAGTGTTTTGAAATAGTT

[a] From University of British Columbia (UBC ISSR Primer Set #9)
[b] From Okamoto and Hirochika (2000)

Table S3
Chloroplast and Nuclear Bottle Gourd PCR Markers

Location	Marker	Expected Size of PCR Product (bp)	PCR Annealing Temperature	Primer Name	Primer Use[a]	Primer Sequence (5′-3′)
Chloroplast	*trn*C-*trn*D[b]	2800	56°C	trnC_F[b]	P	CCAGTTCAAATCTGGGTGTC
				trnD_R[b]	P	GGGATTGTAGTTCAATTGGT
				psbM_2R[b]	S	TTCTTGCATTTATTGCTACTGC
				psbM_3F	S	TGCTTTTCATTTTTCTTATCTTC
Chloroplast	*trn*S-*trn*G	1000	50°C	CCSSR02F[c]	P	AATCCTGGACGTGAAGAATAA
				trnG_R	P, S	AAACTATATCCGCTACAATGC
Nuclear	BOP19_27	740	52°C	BOP19_27_L	P	CAGATGTTTTGGTTTGGGGAT
				BOP19_27_R	P, S	CTCACTCCTTTTCCATACCAT
Nuclear	BOP19_31	759	52°C	BOP19_31_L	P, S	GATAGGGAAGAAAAATAGAAAAG
				BOP19_31_R	P	CGTGAAGAAACAAAAAGGAAC
Nuclear	BOP19_35	1014	52°C	BOP19_35_L	P, S	GAGTGAGATGAACAAAGAAAGA
				BOP19_35_R	P	TCCAGACAAACCAAGAAACCA
Nuclear	BR01_19	641	52°C	BR01_19_L	P	CCCTCTTCACCATCTTCTTC
				BR01_19_R	P, S	GAAATATCGTGCCTGTAAAATAT
Nuclear	MR06_24	738	52°C	MR06_24_L	P, S	CCATTTTGACAGTATGCCATCT
				MR06_24_R	P	GTGCTGCTGCTTCAGTTTTCA

[a] P = PCR primer; S = sequencing primer
[b] From Lee and Wen (2004)
[c] From Chung and Staub (2003)

Figure S1
Spectronet Network for Bottle Gourd Nuclear Data

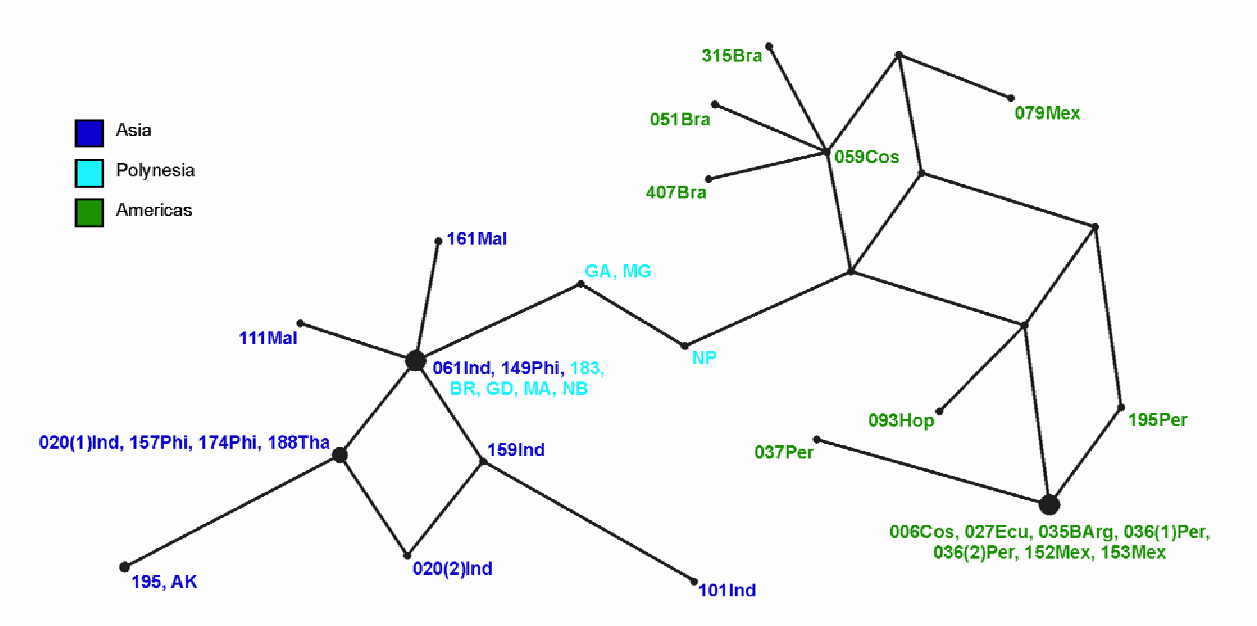

Fig. S1 — Relationships between bottle gourd cultivars and their regions of origin were investigated through construction of a Spectronet network (Huber et al. 2002). Each informative character in the aligned data was recoded as two genotype characters (e.g. a heterozygous SNP 'Y' was recoded as 'CT'). Gap data were recoded as nucleotide data (e.g. a homozygous deletion '00' was recoded as 'CC', a homozygous insertion '11' as 'TT', and a heterozygous indel '01' as 'CT'). Cultivar codes are explained in Tables 1 and S1 (African samples are not included). Nodes in the network represent genotypes, and sets of parallel edges represent a particular split (bipartition of the data). Edge lengths are proportional to the number of characters that display that split (only splits with two or more supporting characters are displayed). Multiple individuals at a single node have identical genotypes, and the size of each node is proportional to the number of individuals with that genotype. Asian and American samples each comprise a separate group (F_{ST} = 0.412; F_{IS} = 0.917), with Polynesian samples largely grouping with Asian samples (F_{ST} = 0.251; F_{IS} = 0.684) as opposed to the American samples (F_{ST} = 0.311; F_{IS} = 0.742). The three Polynesian samples which are closest to the American samples (GA, MG, NP) are those which possess the unique American allele for the BR01_19 marker (see Fig. 3 and Supplementary Table S4).

References

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