Supplementary text (details of RAPD analysis)

Total DNA was extracted from fresh young leaves using a hexadecyltrimethylammonium bromide (CTAB) protocol adapted from Lodhi et al. (1994). In detail, young leaves were collected from the healthy uniform seedlings grown hydroponically in a 0.25-strength Hoagland's solution. The sample of each cultivar leaves (fresh weight, 1 g) was a composite of at least 5 sub-samples, which were collected from different seedlings of the same cultivar. Thus, the RAPD band patterns were expected to be representative of cultivars; and only differences among cultivars, not within genotypes, would be observed. The concentration and purity of DNA were assessed spectrophotometrically (ND-1000, NanoDrop Technologies Inc., USA). The DNA samples had an OD_{260}/OD_{280} of 1.7 and OD_{260}/OD_{230} of 1.8 to 2.0. All DNA preparations were diluted in sterile double-distilled water to a uniform DNA concentration of 50 ng μL^{-1} for RAPD analysis and stored at 4ºC until use.

Thirteen 10-mer arbitrary primers (Table S1; Sangon Inc., Shanghai, China) that gave clear and consistent amplification products were used for PCR amplification. The PCR reaction mixtures had a total volume of 25 mL. Each mixture contained 0.3 μL Taq DNA polymerase (5U μL^{-1}, TAKARA), 0.5 μL primer (10 μmol L^{-1}; Sangon Inc., Shanghai, China), 0.5 μL each dNTP (10 mmol L^{-1}, TAKARA), 2.5 μL appropriate 10× reaction buffer (including $MgCl_2$, TAKARA) and 2.0 μL template DNA. Reactions were performed in a PTC 200 thermal cycler (Bio-RAD Laboratories Inc., USA), and programmed as follows: 5 min at 94ºC for initial denaturation, 40 cycles of 15 s at 94ºC (denaturation), 30 s at 36ºC (annealing), and 1 min at 72ºC (extension), and a final extension at 72ºC for 10 min. The amplification products were visualized on 1.5% agarose gels stained with ethidium bromide, using standard methods. RAPD fragments were scored as present (+) or absent (-).

References

M. A. Lodhi, G. N. Ye, N. F. Weeden and B. I. Reisch, *Plant Mol. Biol. Rept.*, 1994, **12**, 6-13.

Table S1 Specific RAPD fragments among the 17 carambola cultivars

	S17	S19	S43	S79	S83	S85	S103	S120	S121	S147	S151	S155	S176
Sequence (5' to 3')	AGGGA ACGAG	ACCCC CGAAG	GTCGC CGTCA	GTTGC CAGCC	GAGCC CTCCA	CTGAG ACGGA	AGACG TCCAC	GGGAG ACATC	ACGGA TCC TG	AGATG CAGCC	GAGTC TCAGG	ACGCA CAACC	TCTC CGCCC T
B2			$+I_{1200}$		$-I_{750}$		$-I_{800}$	$-I_{1500}$					$+I_{1400}$
B10				$+I_{700}$								$+I_{1500}$	
B17													$-I_{800}$
DGT			$-I_{2000}$		$+I_{850}$	$+I_{300}$		$+I_{850}$	$+I_{1400}$				
DGY			$+I_{700}$			$+I_{900}$						$-I_{1200}$	$+I_{480}$
ERL				$+I_{400}$			$-I_{500}$						$-I_{480}$
LS			$-I_{900}$							$-I_{400}$		$+I_{600}$	
QGS		$+I_{650}$	$+I_{600}$			$-I_{650}$						$-I_{750}$	
TG	$-I_{1500}$					$-I_{300}$	$-I_{1200}$	$+I_{1300}$					$+I_{150}$
TN1			$-I_{1200}$	$-I_{1600}$	$+I_{750}$	$-I_{900}$	$-I_{1800}$	$+I_{2200}$		$+I_{350}$	$-I_{1500}$		
TN2			$-I_{800}$	$-I_{700}$								$+I_{1000}$	
TN4		$+I_{1600}$											
WCT	$+I_{1500}$ [#]	$-I_{1600}$	$-I_{600}$		$+I_{1300}$	$-I_{700}$	$-I_{650}$		$-I_{1400}$				$+I_{650}$
XH				NB			NB			$-I_{350}$			
XHU						$+I_{1100}$				$-I_{300}$	$+I_{600}$		$-I_{650}$
XM			$-I_{900}$			$+I_{650}$			$-I_{650}$	$+I_{1700}$			
ZD			$-I_{400}$			$-I_{350}$			$+I_{650}$	$-I_{900}$			$+I_{900}$

[#] Specific RAPD fragments were recorded for their presence (+) or absence (-) of the primer-cultivar combinations. The number in the lower right corner represents the base pairs of a band. Although no single RAPD primer could distinguish all cultivars, two or more primer combinations are required for cultivar identification

Table S2 Selected properties of soils (mean ± S.D.) collected from the field sites. Concentrations of Cd and OM contents are presented as mg kg^{-1} (dry weight) and %, respectively

Sampling Location	pH	OM Content	Total Cd	DTPA-Cd
S1	4.9 ± 0.3 b*	3.2 ± 0.3 b	0.3 ± 0.1 ab	0.02 ± 0.04 a
S2	4.3 ± 0.6 a	4.4 ± 0.4 c	0.6 ± 0.3 c	0.3 ± 0.2 b
S3	6.7 ± 0.2 d	3.1 ± 0.5 ab	0.4 ± 0.1 b	0.1 ± 0.1 a
S4	5.6 ± 0.6 c	2.5 ± 1.0 ab	0.2 ± 0.1 a	0.02 ± 0.02 a
S5	5.3 ± 0.4 c	5.5 ± 1.4 d	0.1 ± 0.04 a	0.1 ± 0.02 a
S6	7.6 ± 0.3 e	2.4 ± 0.6 a	0.3 ± 0.1 ab	0.04 ± 0.02 a
S7	6.6 ± 0.4 d	3.0 ± 0.3 ab	0.2 ± 0.1 ab	0.1 ± 0.1 a
S8	5.0 ± 0.3 b	2.7 ± 0.5 ab	0.23 ± 0.03ab	0.04 ± 0.02 a

*Numbers followed by different letters in the same column indicate significant differences ($p < 0.05$, LSD)