Table S1. Ecological characteristics of the studied locations.

Location	Code	Latitude	Longitude	Region	maT	maR (mm yr^{-1})	ar m asl
Chimaltenango	Chi	90.683	14.595	Central	9.2 °C	1779 to 2573	2097 to 3962
Sacatepéquez-Chimaltenango	Sac-Chi	90.810	14.594				
Sacatepéquez	Sac	91.063	14.801				
Sololá	Sol	91.156	14.832				
Totonicapán-Quiché	To-Qui	91.416	15.024	Western	10.4 °C	1141 to 2056	1801 to 2990
Huehuetenango	Hue	91.128	15.822				
Baja Verapaz	BV	89.943	15.204	Northern	15.85 °C	1850 to 3410	984 to 1877
Alta Verapaz	AV	90.509	15.423				

maT: mean annual temperature, maR: mean annual rainfall, ar m asl: altitudinal range in meters above sea level

Table S2. Conditions for each multiplex PCR.

Multiplex	Annealing temperature	Final concentration	Primer name	Size range	Fluorescent label
M1	63.4 °C	0.3 μM	AVAG05	83-125	6-FAM
			AVAG13	96-160	VIC
			AVT436	152	NED
		1.2 μM	AVAG11	105-161	PET
M2	57.6 °C	0.25 μM	AVAG21	158-221	VIC
			AVAG22	103-137	NED
			AVAG25	96-140	PET
		0.5 μM	AVAG07	98-114	6-FAM
			AUCR418	379	VIC
		0.7 μM	AVMIX04	160-194	6-FAM
M3	65 °C	0.5 μM	AVD001	208-267	NED
		1.0 μM	AVD022	220-258	PET

Table S3. Characterization of 12 simple sequence repeat (SSR) loci in wild Guatemalan avocado germplasm.

Locus	Na	ar	Ho	He	H	F_{ST}	F_{IS}	Nm	Evenness	HWE
AVAG05[a]	25	13.41	0.49	0.83	2.18	0.01	0.4	6.51	0.6	*
AVAG11[a]	24	13.29	0.42	0.78	2.01	0.15	0.37	4.85	0.53	*
AVAG13[a]	31	20.57	0.69	0.89	2.69	0	0.22	12.91	0.6	*
AVT436[b]	9	6.72	0.44	0.76	1.6	0.03	0.4	7.81	0.79	*
AUCR418[b]	32	18.7	0.57	0.87	2.51	0	0.35	27.53	0.57	*
AVAG07[a]	16	6.93	0.31	0.58	1.34	0.28	0.26	14.46	0.49	*
AVAG21[a]	20	12.18	0.66	0.83	2.07	0.01	0.2	11.11	0.7	*
AVAG22[b]	29	21.3	0.79	0.92	2.83	0.01	0.14	13.64	0.7	*
AVAG25[a]	19	11.55	0.51	0.85	2.13	0.01	0.39	14.46	0.75	*
AVD001[b]	31	20.35	0.66	0.94	2.91	0	0.3	24.75	0.79	*
AVD022[a]	24	13.86	0.49	0.83	2.22	0.01	0.4	124.75	0.61	*
AVMIX04[a]	26	17.13	0.71	0.91	2.64	0	0.21	15.38	0.76	*
mean	23.83	14.67	0.56	0.83	2.26	0.04	0.3	12.25	0.66	

a= from [21] b= from [24], Na: observed number of alleles per locus, ar: allelic richness, Ho: observed heterozygosity, He: expected heterozygosity; H: Shannon diversity index; F_{ST}: fixation index, F_{IS}: inbreeding coefficient, HWE: Hardy-Weinberg equilibrium test. * indicates significance of p value at ≤ 0.01

Table S4. Comparison of first five principal components in entire germplasm and core collections of wild Guatemalan avocado.

Collection	Statistics	Principal components				
		PC1	PC2	PC3	PC4	PC5
Entire germplasm	Standard deviation	1.334	1.111	1.092	1.043	0.949
	Proportion of variance	0.222	0.154	0.149	0.136	0.113
	Cumulative proportion	0.222	0.377	0.526	0.662	0.775
Core Collection	Standard deviation	1.364	1.108	1.103	1.023	0.938
	Proportion of variance	0.232	0.154	0.152	0.131	0.110
	Cumulative proportion	0.232	0.386	0.538	0.669	0.779

Table S5. Selected genotypes for avocado core collection.

Genotype	Population	Region	Genetic Cluster	Genotype	Population	Region	Genetic Cluster
Chi.71	Chi	Central	02	To-Qui.101	To-Qui	Western	03
Chi.74	Chi	Central	01	To-Qui.105	To-Qui	Western	01
Chi.83	Chi	Central	02	To-Qui.121	To-Qui	Western	01
Chi.88	Chi	Central	01	To-Qui.128	To-Qui	Western	03
Sac.11	Sac	Central	02	To-Qui.131	To-Qui	Western	02
Sac.13	Sac	Central	01	To-Qui.134	To-Qui	Western	03
Sac.18	Sac	Central	01	Hue-Qui.137	Hue-Qui	Western	02
Sac.23	Sac	Central	02	Hue-Qui.143	Hue-Qui	Western	03
Sac.26	Sac	Central	02	Hue-Qui.147	Hue-Qui	Western	03
Sac.29	Sac	Central	02	Hue-Qui.152	Hue-Qui	Western	03
Sac.31	Sac	Central	03	Hue-Qui.157	Hue-Qui	Western	01
Sac.33	Sac	Central	03	AV.174	AV	Northern	03
Sac-Chi.39	Sac-Chi	Central	02	AV.177	AV	Northern	02
Sac-Chi.41	Sac-Chi	Central	03	AV.176	AV	Northern	01
Sac-Chi.46	Sac-Chi	Central	03	AV.182	AV	Northern	03
Sac-Chi.56	Sac-Chi	Central	01	AV.185	AV	Northern	03
Sac-Chi.64	Sac-Chi	Central	01	BV.159	BV	Northern	03
Sol.91	Sol	Central	03	BV.161	BV	Northern	02
Sol.97	Sol	Central	01	BV.164	BV	Northern	01