

Supplementary Materials:

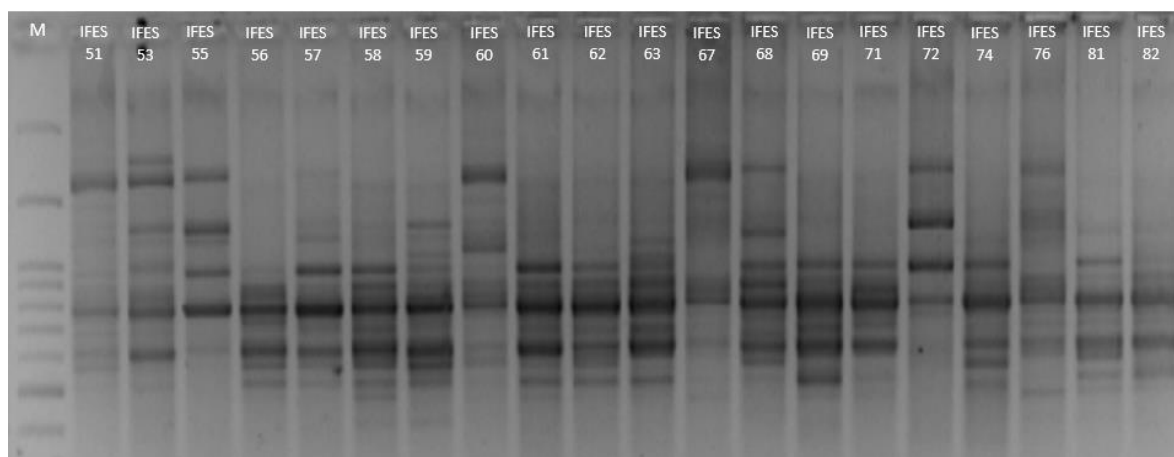


Figure S1. Representative sample of 2% agarose gel. DNA amplified fragments using ISSR marker 106. M—molecular weight marker, 100pb.

Table S1. Accession identification of 69 *Capsicum* accessions from Instituto Federal do Espírito Santo—Campus de Alegre germplasm collection.

Accession ID	Origin	Species
IFES 01	Colatina, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 02	Colatina, ES	<i>Capsicum chinense</i> Jacq.
IFES 03	Domingos Martins, ES	<i>Capsicum chinense</i> Jacq.
IFES 04	Domingos Martins, ES	<i>Capsicum chinense</i> Jacq.
IFES 05	Muniz Freire, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 06	Muniz Freire, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 07	Alegre, ES	<i>Capsicum chinense</i> Jacq.
IFES 08	Alegre, ES	<i>Capsicum chinense</i> Jacq.
IFES 09*	Alegre, ES	<i>Capsicum chinense</i> Jacq.
IFES 10	Alegre, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 12	Alegre, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 13	Alegre, ES	<i>Capsicum chinense</i> Jacq.
IFES 14	Alegre, ES	<i>Capsicum frutescens</i>
IFES 16	Alegre, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 17	Alegre, ES	<i>Capsicum chinense</i> Jacq.
IFES 22	Alfredo Chaves, ES	<i>Capsicum chinense</i> Jacq.
IFES 23	Alfredo Chaves, ES	<i>Capsicum chinense</i> Jacq.
IFES 24	Anchieta, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 25	Alfredo Chaves, ES	<i>Capsicum chinense</i> Jacq.
IFES 26	Alfredo Chaves, ES	<i>Capsicum chinense</i> Jacq.
IFES 27	Anchieta, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 28	Anchieta, ES	<i>Capsicum frutescens</i>
IFES 31	Anchieta, ES	<i>Capsicum annuum</i> var. <i>glabriusculum</i>
IFES 32	Anchieta, ES	<i>Capsicum chinense</i> Jacq.
IFES 33	Anchieta, ES	<i>Capsicum chinense</i> Jacq.
IFES 34	Anchieta, ES	<i>Capsicum chinense</i> Jacq.
IFES 35	Anchieta, ES	<i>Capsicum chinense</i> Jacq.
IFES 36	Anchieta, ES	<i>Capsicum chinense</i> Jacq.
IFES 37	Anchieta, ES	<i>Capsicum chinense</i> Jacq.
IFES 38	Anchieta, ES	<i>Capsicum chinense</i> Jacq.

IFES 39	Anchieta, ES	<i>Capsicum chinense</i> Jacq.
IFES 40	Anchieta, ES	<i>Capsicum chinense</i> Jacq.
IFES 41	Anchieta, ES	<i>Capsicum chinense</i> Jacq.
IFES 43	Anchieta, ES	<i>Capsicum chinense</i> Jacq.
IFES 44	Anchieta, ES	<i>Capsicum chinense</i> Jacq.
IFES 47	Alegre, ES	<i>Capsicum chinense</i> Jacq.
IFES 48	Alegre, ES	<i>Capsicum chinense</i> Jacq.
IFES 49	Alegre, ES	<i>Capsicum chinense</i> Jacq.
IFES 50	Alegre, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 51*	Alegre, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 53	Muniz Freire, ES	<i>Capsicum chinense</i> Jacq.
IFES 55	Cachoeiro de Itapemirim, ES	<i>Capsicum frutescens</i>
IFES 56	Viçosa, MG	<i>Capsicum chinense</i> Jacq.
IFES 57	Rio de Janeiro, RJ	<i>Capsicum chinense</i> Jacq.
IFES 58	Campos, RJ	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 59	Goiânia, GO	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 60	Campos, RJ	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 61	São Luiz, MA	<i>Capsicum chinense</i> Jacq.
IFES 62	São Luiz, MA	<i>Capsicum chinense</i> Jacq.
IFES 63	Ilhéus, BA	<i>Capsicum annuum</i> var. <i>annuum</i>
IFES 67	São Luiz, MA	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 68	Soure, PA	<i>Capsicum chinense</i> Jacq.
IFES 69	Bequimão, MA	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 71	São Luiz, MA	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 72	Miranda, MS	<i>Capsicum frutescens</i>
IFES 74	Alegre, ES	<i>Capsicum chinense</i> Jacq.
IFES 76	Muniz Freire, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 81	Campos, RJ	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 82	Belém, PA	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 85	Belém, PA	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 90	Alegre, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 91	Venda Nova do Imigrante, ES	<i>Capsicum chinense</i> Jacq.
IFES 92	Venda Nova do Imigrante, ES	<i>Capsicum chinense</i> Jacq.
IFES 93	Cachoeiro de Itapemirim, ES	<i>Capsicum frutescens</i>
IFES 94	Alegre, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>
IFES 95	Alegre, ES	<i>Capsicum frutescens</i>
IFES 99*	Alegre, ES	<i>Capsicum chinense</i> Jacq.
IFES 100*	Alegre, ES	<i>Capsicum frutescens</i>
IFES 101*	Alegre, ES	<i>Capsicum baccatum</i> var. <i>pendulum</i>

*—Commercial variety; **Southeast Region:** ES—Espírito Santo, RJ—Rio de Janeiro, MG—Minas Gerais; **Midwest Region:** GO—Goiás, MS—Mato Grosso do Sul; **Northeast Region:** MA—Maranhão, BA—Bahia; **North Region:** PA—Pará

Table S2. Twenty-two qualitative descriptors used to phenotype 69 *Capsicum* accessions according to IPGRI (1995).

Descriptor	Phenotype
Growth habit	3 = Prostrate; 5 = Intermediate (compact); 7 = Erect; 9 = Other;
Leaf shape	1 = Deltoid; 2 = Ovate; 3 = Lanceolate;
Stem shape	1 = Cylindrical; 2 = Angled; 3 = Flattened;
Nodal anthocyanin color	1 = Green; 3 = Light purple; 5 = Purple; 7 = Dark purple;
Stem pubescence	3 = Sparse; 5 = Intermediate; 7 = Dense;
Flower position	3 = Pendant; 5 = Intermediate; 7 = Erect;
Number of flowers per axillary	1 = one; 2 = two; 3 = three or more; 4 = many with short training; 5 = one and two; 6 = one, two, three; 7 = two or three and; 8 = two, three and four;
Anther color	1 = White; 2 = Yellow; 3 = Light blue; 4 = Blue; 5 = Purple; 6 = other;
Corolla color	1 = White; 2 = Light yellow; 3 = Yellow; 4 = Greenish-yellow; 5 = Purple with white base; 6 = White with purple base; 7 = White with purple margin; 8 = Purple; 9 = Greenish-white; 10 = White with purple spot;
Corolla spot color	1 = White; 2 = Yellow; 3 = Greenish-yellow; 4 = Green; 5 = Violet; 6 = Without spot;
Filament color	1 = White; 2 = yellow, 3 = green; 4 = blue; 5 = light violet; 6 = violet; 7 = blue violet;
Calyx pigmentation	0 = Absent; 1 = Present;
Calyx margin	1 = Entire; 2 = Intermediate; 3 = Dentate; 4 = Other;
Fruit color at intermediate stage	1 = White; 2 = Yellow; 3 = Green; 4 = Orange; 5 = Purple; 6 = Deep purple; 7 = Other;
Fruit color at mature stage	1 = White; 2 = Lemon-yellow; 3 = Light orange yellow; 4 = Orange-yellow; 5 = Light orange; 6 = Orange; 7 = Light red; 8 = Red; 9 = Dark red; 10 = Purple; 11 = Brown; 12 = Black; 13 = Other;
Fruit shape	1 = Elongate; 2 = Almost Round; 3 = Triangular; 4 = Campanulate; 5 = Block; 6 = Other
Fruit surface	1 = Smooth; 2 = Semiwrinkled; 3 = Wrinkled;
Fruit shape at blossom end	1 = Pointy; 2 = Blunt; 3 = Sunken; 4 = Pointed and sunken; 5 = Other;
Fruit shape at pedicel attachment	1 = Acute; 2 = Obtuse; 3 = Truncate; 4 = Cordate; 5 = Lobate.
Fruit cross-sectional corrugation	3 = Slightly corrugated; 5 = Intermediate; 7 = Corrugated;
Calyx constriction	0 = Absent; 1 = Present;
Capsaicin	0 = Absente; 1 = Present.

Table S3. Eleven quantitative descriptors used to phenotype 69 *Capsicum* accessions according to IPGRI (1995).

Descriptor	Evaluation method
PH—Plant Height (cm)	Measured from the soil surface to the highest point of the plant when 50% of the plants present mature fruits;
CD—Canopy diameter (cm)	Measured after the first harvest between the broadest points of the canopy;
SD—Stem Diameter (mm)	Measured in the middle part of the first bifurcation;
LL—Leaf Length (cm)	Measured on five fully developed leaves;
LW—Leaf Width (cm)	Measured on five fully developed leaves;
PL—Petiole Length (cm)	Measured on five completely developed leaves;
FL—Fruit Length (mm)	Measured in the longitudinal region of five mature fruits;
FD—Fruit Diameter (mm)	Measured in the equatorial region of five mature fruits;
FFM—Fruit Fresh Mass (g)	Measured in five mature fruits;
PT—Pericarp Thickness (mm)	Measured of the highest fruit pulp thickness after a cross-section in five mature fruits;
FLD—Flower Diameter (mm)	Measured in the largest diameter of the flower.

Table S4. Information about 17 ISSR primers used in the genotyping of 69 *Capsicum* accessions from Instituto Federal do Espírito Santo—Campus de Alegre germplasm collection and 33 discarded primers.

Primer	Sequence (5'-3')	Annealing temperature	Range of amplicons (bp)	PIC	
ISSR 8	(AC) ₈ G	52 °C	350–1300	0.55	
ISSR 47	(CA) ₈ G	48.5 °C	500–1000	0.43	
ISSR 54	(CAC) ₄ RC	46 °C	500–1000	0.73	
ISSR 94	(GGAGA) ₃	52 °C	500–1000	0.83	
ISSR 102	(GT) ₆ RG	46 °C	200–1500	0.75	
ISSR 106	(GT) ₈ CTC	46 °C	250–1500	0.7	
ISSR 137	GGGC(GA) ₈	46 °C	300–1000	0.54	
UENF 01	(GTG) ₅	50 °C	400–1500	0.58	
UENF 02	CY(CA) ₈	50 °C	300–1000	0.55	
UENF 03	CY(TGT) ₅	50 °C	300–1500	0.55	
UENF 04	(AGG) ₅ RC	50 °C	250–1500	0.51	
UENF 05	(TCA) ₅ RC	50 °C	500–1000	0.59	
UENF 06	(AC) ₅ G	50 °C	350–1000	0.71	
UENF 07	(GAA) ₅ RC	50 °C	350–1200	0.41	
UENF 08	(GC) ₈ T	50 °C	500–1000	0.72	
UENF 09	(GCA) ₅	50 °C	250–1500	0.63	
UENF 10	(GT) ₅ A	50 °C	300–1200	0.71	
Discarded Primers					
Primer	Sequence (5'-3')	Tested Temperature	Primer	Sequence (5'-3')	Tested Temperature
VIT 01	(GA) ₆ CC	52 °C	ISSR 77	(CT) ₈ TG	52 °C
VIT 05	(AG) ₈ YT	52 °C	ISSR 81	(AG) ₈ YC	52 °C
VIT 06	(AC) ₈ CG	52 °C	IT 1	(CA) ₈ GT	47°C
VIT 07	(AC) ₈ CT	52 °C	IT 2	(CA) ₈ AC	47°C
VIT 19	(AG) ₈ YA	52 °C	IT 3	(CA) ₈ AG	47°C
VIT 23	(AC) ₈ YG	52 °C	GOOFY	(GT) ₇ YG	47 °C
VIT 32	(AG) ₈ C	52 °C	BECKY	(CA) ₇ YC	47 °C
VIT 33	(AG) ₈ T	52 °C	JOHN	(AG) ₇ YG	47 °C
VIT 45	(GA) ₈ CTT	52 °C	UBC 841	(GA) ₈ YC	51,5 °C
VIT 50	(AC) ₈ C	52 °C	UBC 811	(GA) ₈ C	51,5 °C
VIT 51	(ATC) ₆ T	52 °C	IFES 3	(GA) ₉ C	46 °C
VIT 52	(ATC) ₆ C	52 °C	IFES 5	(CCG) ₆	72 °C
ISSR 13	(AC) ₈ YT	49.5 °C	IFES 7	(TG) ₁₄ TT(TG) ₃	66 °C
ISSR 14	(AC) ₈ YA	42°C	IFES 12	(AT) ₁₆	36 °C
ISSR 20	(CA) ₇	42°C	IFES 15	(CA) ₆ R	45 °C
ISSR 29	A ₃ (AAT) ₄	49.5 °C	IFES 16	(CA) ₆ RY	45 °C
ISSR 41	(GT) ₆ GG	49.5 °C			

R = A, G; Y = C, T; PIC – Polymorphism Information Content.

Table S5. Descriptive analysis of 22 qualitative descriptor of 69 *Capsicum* populations from *Instituto Federal do Espírito Santo—Campus de Alegre* germplasm collection.

Accession	Growth habit	Leaf shape	Stem Shape	Nodal Anthocyanin Color	Stem Pubescence	Flower Position	Number of Flowers per Axillary	Anther Color	Corolla Color
IFES 01	Intermediate	Ovate	Angled	Green	Sparse	Intermediate	One	Yellow with light blue spot	White
IFES 02	Erect	Ovate	Angled	Light purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 03	Intermediate	Ovate	Angled	Purple	Sparse	Erect	One	Yellow with light blue spot	White
IFES 04	Intermediate	Deltoid	Angled	Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 05	Intermediate	Deltoid	Angled	Light purple	Sparse	Intermediate	One	Yellow with light blue spot	White
IFES 06	Intermediate	Deltoid	Angled	Purple	Sparse	Erect	One	Yellow with light blue spot	White
IFES 07	Intermediate	Deltoid	Angled	Green	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 08	Intermediate	Ovate	Angled	Green	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 09	Intermediate	Ovate	Angled	Green	Sparse	Erect	Three or more	Violet	Greenish-white
IFES 10	Intermediate	Deltoid	Angled	Light purple	Sparse	Erect	One	Yellow with light blue spot	White
IFES 12	Intermediate	Ovate	Angled	Green	Sparse	Erect	One	Yellow with light blue spot	White
IFES 13	Intermediate	Deltoid	Angled	Light Purple	Sparse	Erect	Three or more	Violet	Greenish-white
IFES 14	Erect	Deltoid	Angled	Light Purple	Sparse	Erect	Two or three	Violet	Greenish-yellow
IFES 16	Intermediate	Deltoid	Angled	Green	Sparse	Erect	One	Yellow with light blue spot	White
IFES 17	Intermediate	Deltoid	Angled	Light Purple	Sparse	Erect	Three or more	Violet	Greenish-white
IFES 22	Intermediate	Deltoid	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 23	Intermediate	Deltoid	Angled	Green	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 24	Intermediate	Deltoid	Angled	Purple	Sparse	Erect	One	Yellow with light blue spot	White
IFES 25	Intermediate	Deltoid	Angled	Green	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 26	Intermediate	Ovate	Angled	Light Purple	Sparse	Pendant	Three or more	Violet	Greenish-white
IFES 27	Intermediate	Ovate	Angled	Light Purple	Sparse	Erect	One	Yellow with light blue spot	White
IFES 28	Erect	Ovate	Angled	Light Purple	Sparse	Erect	Two or three	Violet	Greenish-yellow
IFES 31	Intermediate	Ovate	Angled	Purple	Sparse	Erect	One	Violet	Purple
IFES 32	Intermediate	Deltoid	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 33	Intermediate	Deltoid	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 34	Intermediate	Ovate	Angled	Green	Sparse	Erect	Three or more	Violet	Greenish-white
IFES 35	Intermediate	Ovate	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 36	Intermediate	Ovate	Angled	Green	Sparse	Intermediate	Three or more	Violet	Greenish-white

IFES 37	Intermediate	Ovate	Angled	Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 38	Prostrate	Ovate	Angled	Purple	Sparse	Erect	Three or more	Violet	Greenish-white
IFES 39	Intermediate	Ovate	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 40	Intermediate	Lanceolate	Angled	Green	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 41	Intermediate	Deltoid	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 43	Intermediate	Ovate	Angled	Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 44	Intermediate	Deltoid	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 47	Intermediate	Ovate	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 48	Intermediate	Ovate	Angled	Purple escuro	Sparse	Erect	Three or more	Violet	Greenish-white
IFES 49	Intermediate	Ovate	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 50	Intermediate	Ovate	Angled	Light Purple	Sparse	Intermediate	One	Yellow with light blue spot	White
IFES 51	Intermediate	Deltoid	Angled	Green	Sparse	Intermediate	One	Yellow with light blue spot	White
IFES 53	Intermediate	Lanceolate	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 55	Erect	Deltoid	Angled	Light Purple	Sparse	Erect	Two or three	Violet	Greenish-yellow
IFES 56	Intermediate	Deltoid	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 57	Erect	Ovate	Angled	Light Purple	Sparse	Erect	Three or more	Violet	Greenish-white
IFES 58	Intermediate	Deltoid	Angled	Green	Sparse	Intermediate	One	Yellow with light blue spot	White
IFES 59	Intermediate	Deltoid	Angled	Light Purple	Sparse	Erect	One	Yellow with light blue spot	White
IFES 60	Prostrate	Ovate	Angled	Purple	Sparse	Erect	One	Yellow with light blue spot	White
IFES 61	Intermediate	Lanceolate	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 62	Intermediate	Ovate	Angled	Light Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 63	Intermediate	Lanceolate	Angled	Light Purple	Sparse	Intermediate	One	Violet	White
IFES 67	Intermediate	Ovate	Angled	Green	Sparse	Erect	One	Yellow with light blue spot	White
IFES 68	Intermediate	Deltoid	Angled	Purple	Sparse	Pendant	Three or more	Violet	Greenish-white
IFES 69	Intermediate	Ovate	Angled	Dark purple	Sparse	Intermediate	One	Yellow with light blue spot	White
IFES 71	Intermediate	Ovate	Angled	Dark purple	Sparse	Intermediate	One	Yellow with light blue spot	White
IFES 72	Erect	Deltoid	Angled	Green	Sparse	Erect	Two or three	Violet	Greenish-yellow
IFES 74	Intermediate	Ovate	Angled	Green	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 76	Intermediate	Deltoid	Angled	Light Purple	Sparse	Erect	One	Yellow with light blue spot	White
IFES 81	Intermediate	Deltoid	Angled	Light Purple	Sparse	Erect	One	Yellow with light blue spot	White
IFES 82	Intermediate	Deltoid	Angled	Light Purple	Sparse	Intermediate	One	Yellow with light blue spot	White
IFES 85	Intermediate	Ovate	Angled	Light Purple	Sparse	Erect	One	Yellow with light blue spot	White
IFES 90	Intermediate	Deltoid	Angled	Light Purple	Sparse	Intermediate	One	Yellow with light blue spot	White

IFES 91	Intermediate	Deltoid	Angled	Purple	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 92	Intermediate	Deltoid	Angled	Purple	Sparse	Erect	Three or more	Violet	Greenish-white
IFES 93	Erect	Ovate	Angled	Light Purple	Sparse	Erect	Two or three	Violet	Greenish-yellow
IFES 94	Intermediate	Deltoid	Angled	Purple	Sparse	Erect	One	Yellow with light blue spot	White
IFES 95	Erect	Ovate	Angled	Light Purple	Sparse	Erect	Two or three	Violet	Greenish-yellow
IFES 99	Intermediate	Ovate	Angled	Green	Sparse	Intermediate	Three or more	Violet	Greenish-white
IFES 100	Erect	Ovate	Angled	Light Purple	Sparse	Erect	Two or three	Violet	Greenish-yellow
IFES 101	Intermediate	Ovate	Angled	Light Purple	Sparse	Intermediate	One	Yellow with light blue spot	White

Continuation of Supplementary Table S5

Accession	Corolla Spot Color	Filament Color	Calyx Pigmentation	Calyx margin	Fruit color at intermediate stage	Fruit color at mature stage	Fruit Shape	Fruit Surface	Fruit shape at blossom end
IFES 01	Greenish-yellow	White	Present	Intermediate	Orange	Red	Elongate	Smooth	Pointy
IFES 02	Without spot	Yellow	Present	Intermediate	Orange	Dark red	Block	Semiwrinkled	Sunken
IFES 03	Without spot	Yellow	Present	Dentate	Orange	Red	Triangular	Smooth	Blunt
IFES 04	Without spot	Yellow	Present	Intermediate	Orange	Dark red	Triangular	Smooth	Pointy
IFES 05	Greenish-yellow	White	Present	Dentate	Orange	Dark red	Elongate	Semiwrinkled	Pointy
IFES 06	Greenish-yellow	White	Present	Intermediate	Orange	Red	Elongate	Smooth	Pointy
IFES 07	Without spot	White	Present	Intermediate	Orange	Dark red	Almost round	Semiwrinkled	Sunken
IFES 08	Without spot	White	Present	Intermediate	Orange	Dark red	Elongate	Smooth	Blunt
IFES 09	Without spot	White	Present	Intermediate	Green	Lemon-yellow	Triangular	Smooth	Blunt
IFES 10	Greenish-yellow	White	Present	Intermediate	Orange	Red	Triangular	Smooth	Sunken
IFES 12	Greenish-yellow	White	Present	Intermediate	Orange	Light red	Elongate	Smooth	Pointy
IFES 13	Without spot	Yellow	Present	Intermediate	Orange	Light red	Elongate	Smooth	Pointy
IFES 14	Without spot	Yellow	Present	Intermediate	Green	Red	Elongate	Semiwrinkled	Pointy
IFES 16	Greenish-yellow	White	Present	Intermediate	Orange	Red	Triangular	Smooth	Pointy
IFES 17	Without spot	White	Present	Intermediate	Yellow	Lemon-yellow	Triangular	Smooth	Blunt
IFES 22	Without spot	White	Present	Intermediate	Orange	Red	Almost round	Semiwrinkled	Sunken
IFES 23	Without spot	White	Present	Intermediate	Yellow	Orange-yellow	Block	Smooth	Sunken
IFES 24	Greenish-yellow	White	Present	Intermediate	Orange	Dark red	Triangular	Smooth	Sunken
IFES 25	Without spot	White	Present	Intermediate	Yellow	Light orange	Almost round	Smooth	Blunt
IFES 26	Without spot	Yellow	Present	Intermediate	Green	Orange-yellow	Elongate	Enrugado	Pointy
IFES 27	Greenish-yellow	White	Present	Dentate	Orange	Red	Elongate	Smooth	Pointy
IFES 28	Without spot	Yellow	Present	Intermediate	Orange	Red	Elongate	Semiwrinkled	Pointy
IFES 31	Without spot	Violeta	Present	Entire	Deep purple	Dark red	Triangular	Smooth	Pointy
IFES 32	Without spot	White	Present	Intermediate	Orange	Orange	Triangular	Semiwrinkled	Pointy
IFES 33	Without spot	Yellow	Present	Dentate	Orange	Dark red	Block	Semiwrinkled	Pointy e Sunken
IFES 34	Without spot	Yellow	Present	Intermediate	Orange	Dark red	Triangular	Semiwrinkled	Pointy
IFES 35	Without spot	White	Present	Intermediate	Yellow	Light orange	Triangular	Smooth	Pointy
IFES 36	Without spot	Yellow	Present	Intermediate	Orange	Dark red	Block	Smooth	Sunken

IFES 37	Without spot	White	Present	Intermediate	Orange	Red	Campanulate	Semiwrinkled	Sunken
IFES 38	Without spot	White	Present	Intermediate	Yellow	Orange	Triangular	Smooth	Sunken
IFES 39	Without spot	White	Present	Intermediate	Orange	Dark red	Triangular	Smooth	Pointy
IFES 40	Without spot	White	Present	Intermediate	Green	Dark red	Triangular	Smooth	Pointy
IFES 41	Without spot	Yellow	Present	Intermediate	Orange	Red	Triangular	Smooth	Pointy
IFES 43	Without spot	Verde	Present	Dentate	Orange	Dark red	Block	Semiwrinkled	Sunken
IFES 44	Without spot	White	Present	Intermediate	Green	Light orange	Campanulate	Semiwrinkled	Pointy e Sunken
IFES 47	Without spot	Yellow	Present	Intermediate	Orange	Red	Block	Semiwrinkled	Sunken
IFES 48	Without spot	White	Present	Intermediate	Orange	Red	Almost round	Smooth	Blunt
IFES 49	Without spot	White	Present	Intermediate	Orange	Dark red	Triangular	Smooth	Pointy
IFES 50	Greenish-yellow	White	Present	Intermediate	Orange	Red	Elongate	Smooth	Pointy
IFES 51	Greenish-yellow	White	Present	Dentate	Orange	Red	Triangular	Semiwrinkled	Sunken
IFES 53	Without spot	Yellow	Present	Intermediate	Orange	Dark red	Triangular	Semiwrinkled	Blunt
IFES 55	Without spot	Yellow	Present	Intermediate	Orange	Red	Elongate	Semiwrinkled	Pointy
IFES 56	Without spot	Yellow	Present	Intermediate	Orange	Red	Campanulate	Semiwrinkled	Sunken
IFES 57	Without spot	White	Present	Intermediate	Orange	Dark red	Triangular	Semiwrinkled	Blunt
IFES 58	Greenish-yellow	White	Present	Dentate	Orange	Red	Triangular	Semiwrinkled	Sunken
IFES 59	Greenish-yellow	White	Present	Intermediate	Orange	Red	Triangular	Smooth	Pointy
IFES 60	Greenish-yellow	White	Present	Intermediate	Orange	Dark red	Elongate	Smooth	Pointy
IFES 61	Without spot	White	Present	Intermediate	Orange	Dark red	Triangular	Smooth	Pointy
IFES 62	Without spot	White	Present	Intermediate	Orange	Dark red	Triangular	Smooth	Pointy
IFES 63	Without spot	White	Present	Intermediate	Deep purple	Dark red	Elongate	Smooth	Pointy
IFES 67	Greenish-yellow	White	Present	Dentate	Yellow	Orange	Elongate	Smooth	Pointy
IFES 68	Without spot	White	Present	Intermediate	Red	Dark red	Triangular	Smooth	Blunt
IFES 69	Greenish-yellow	White	Present	Dentate	Orange	Red	Elongate	Smooth	Pointy
IFES 71	Greenish-yellow	White	Present	Intermediate	Orange	Red	Elongate	Semiwrinkled	Pointy
IFES 72	Without spot	Yellow	Present	Entire	Red	Orange-yellow	Elongate	Semiwrinkled	Pointy
IFES 74	Without spot	White	Present	Intermediate	Yellow	Orange	Triangular	Smooth	Pointy
IFES 76	Greenish-yellow	White	Present	Intermediate	Orange	Dark red	Elongate	Smooth	Pointy
IFES 81	Greenish-yellow	White	Present	Intermediate	Orange	Red	Elongate	Semiwrinkled	Pointy
IFES 82	Greenish-yellow	White	Present	Dentate	Orange	Red	Triangular	Semiwrinkled	Sunken
IFES 85	Greenish-yellow	White	Present	Dentate	Orange	Red	Elongate	Semiwrinkled	Pointy
IFES 90	Greenish-yellow	White	Present	Dentate	Orange	Red	Triangular	Semiwrinkled	Sunken

IFES 91	Without spot	White	Present	Dentate	Orange	Red	Block	Semiwrinkled	Sunken
IFES 92	Without spot	White	Present	Intermediate	Orange	Dark red	Triangular	Smooth	Sunken
IFES 93	Without spot	Yellow	Present	Entire	Orange	Red	Elongate	Semiwrinkled	Pointy
IFES 94	Greenish-yellow	White	Present	Intermediate	Orange	Red	Elongate	Smooth	Pointy
IFES 95	Without spot	White	Present	Entire	Orange	Red	Elongate	Semiwrinkled	Pointy
IFES 99	Without spot	White	Present	Intermediate	Orange	Dark red	Almost round	Smooth	Blunt
IFES 100	Without spot	White	Present	Intermediate	Orange	Red	Elongate	Semiwrinkled	Pointy
IFES 101	Greenish-yellow	White	Present	Intermediate	Orange	Light red	Elongate	Smooth	Pointy

Continuation of Supplementary Table S5

Acession	Fruit cross-sectional corrugation	Calyx constriction	Capsaicin	Acession	Fruit cross-sectional corrugation	Calyx constriction	Capsaicin
IFES 01	Slightly corrugated	Absent	Present	IFES 47	Corrugated	Present	Absent
IFES 02	Corrugated	Present	Absent	IFES 48	Slightly corrugated	Present	Present
IFES 03	Intermediate	Present	Present	IFES 49	Slightly corrugated	Present	Present
IFES 04	Slightly corrugated	Present	Present	IFES 50	Slightly corrugated	Absent	Present
IFES 05	Slightly corrugated	Absent	Present	IFES 51	Corrugated	Absent	Absent
IFES 06	Slightly corrugated	Absent	Present	IFES 53	Slightly corrugated	Present	Present
IFES 07	Corrugated	Present	Present	IFES 55	Slightly corrugated	Absent	Present
IFES 08	Intermediate	Present	Present	IFES 56	Corrugated	Present	Absent
IFES 09	Slightly corrugated	Present	Present	IFES 57	Intermediate	Present	Present
IFES 10	Slightly corrugated	Absent	Present	IFES 58	Corrugated	Absent	Absent
IFES 12	Intermediate	Absent	Present	IFES 59	Slightly corrugated	Absent	Present
IFES 13	Slightly corrugated	Present	Present	IFES 60	Intermediate	Absent	Present
IFES 14	Slightly corrugated	Absent	Present	IFES 61	Slightly corrugated	Present	Present
IFES 16	Intermediate	Absent	Present	IFES 62	Slightly corrugated	Present	Absent
IFES 17	Slightly corrugated	Present	Present	IFES 63	Slightly corrugated	Absent	Present
IFES 22	Corrugated	Present	Present	IFES 67	Intermediate	Absent	Present
IFES 23	Corrugated	Present	Present	IFES 68	Slightly corrugated	Present	Present
IFES 24	Slightly corrugated	Present	Present	IFES 69	Intermediate	Absent	Present
IFES 25	Slightly corrugated	Present	Present	IFES 71	Intermediate	Present	Absent
IFES 26	Corrugated	Present	Present	IFES 72	Slightly corrugated	Absent	Present
IFES 27	Intermediate	Absent	Present	IFES 74	Slightly corrugated	Absent	Absent
IFES 28	Slightly corrugated	Absent	Present	IFES 76	Intermediate	Absent	Present
IFES 31	Slightly corrugated	Absent	Present	IFES 81	Intermediate	Absent	Present
IFES 32	Intermediate	Present	Present	IFES 82	Corrugated	Absent	Absent
IFES 33	Corrugated	Present	Absent	IFES 85	Slightly corrugated	Absent	Present
IFES 34	Intermediate	Present	Absent	IFES 90	Corrugated	Absent	Absent
IFES 35	Slightly corrugated	Present	Absent	IFES 91	Corrugated	Present	Present
IFES 36	Intermediate	Present	Present	IFES 92	Slightly corrugated	Present	Present
IFES 37	Corrugated	Present	Absent	IFES 93	Slightly corrugated	Absent	Present

IFES 38	Slightly corrugated	Present	Present	IFES 94	Slightly corrugated	Absent	Present
IFES 39	Slightly corrugated	Present	Absent	IFES 95	Slightly corrugated	Absent	Present
IFES 40	Slightly corrugated	Present	Present	IFES 99	Slightly corrugated	Present	Present
IFES 41	Slightly corrugated	Present	Absent	IFES 100	Slightly corrugated	Absent	Present
IFES 43	Corrugated	Present	Absent	IFES 101	Slightly corrugated	Absent	Present
IFES 44	Corrugated	Present	Present				

Table S6. Grouping of 11 quantitative means of 69 *Capsicum* accessions by Scott-Knott method at 5% probability.

Accession ID	PH		CD		SD		LL		LW		PL		FL		FD		FFM		PT		FLD	
IFES 01	41.67	c	46.33	b	14.63	b	9.80	a	4.32	a	5.67	b	7.08	e	12.67	f	5.86	d	2.05	c	12.46	a
IFES 02	35.83	d	56.17	b	10.58	b	9.45	a	4.59	a	3.35	c	5.12	f	20.26	d	15.97	c	2.09	c	9.32	b
IFES 03	43.22	c	61.22	b	15.29	b	10.37	a	4.91	a	3.53	c	3.36	h	22.93	d	5.12	d	1.96	c	12.09	a
IFES 04	47.44	c	61.00	b	14.36	b	6.58	b	3.45	b	2.28	c	2.97	h	16.54	e	2.10	e	1.94	c	10.04	b
IFES 05	58.67	b	73.33	a	15.13	b	10.49	a	4.61	a	3.64	c	8.05	d	15.11	e	6.22	d	1.90	c	13.55	a
IFES 06	40.67	c	46.22	b	12.00	b	8.01	b	3.79	b	4.00	b	4.87	f	12.53	f	3.04	e	1.40	c	8.60	b
IFES 07	55.33	b	68.67	a	18.87	b	7.70	b	3.55	b	2.31	c	1.14	i	18.14	e	2.29	e	1.94	c	8.22	c
IFES 08	80.00	a	76.33	a	20.80	a	7.66	b	4.89	a	2.43	c	1.77	i	8.48	g	1.46	e	1.15	d	9.44	b
IFES 09	20.33	d	24.67	b	13.63	b	6.14	b	1.79	b	2.29	c	3.62	g	17.79	e	4.30	d	1.55	c	8.78	b
IFES 10	30.17	d	46.50	b	11.40	b	7.12	b	3.72	b	2.79	c	2.64	h	23.64	d	5.42	d	3.56	a	8.19	c
IFES 12	55.00	b	51.00	b	16.08	b	7.10	b	3.58	b	4.88	b	10.29	c	15.35	e	7.63	d	1.47	c	11.69	a
IFES 13	40.00	c	57.67	b	22.77	a	8.82	b	4.07	a	2.99	c	3.99	g	24.53	d	7.30	d	3.56	a	7.49	c
IFES 14	66.67	b	44.03	b	16.13	b	8.23	b	4.05	a	2.11	c	3.89	g	3.95	g	1.29	e	2.52	b	7.21	c
IFES 16	56.67	b	74.33	a	15.88	b	9.51	a	2.80	b	3.34	c	3.61	g	26.85	c	8.51	d	3.28	a	14.00	a
IFES 17	60.00	b	62.83	b	15.78	b	7.85	b	3.64	b	7.35	b	1.75	i	11.49	f	1.09	e	1.43	c	6.83	c
IFES 22	55.00	b	44.00	b	18.65	b	10.63	a	5.06	a	2.66	c	1.07	i	6.34	g	0.98	e	1.40	c	10.38	b
IFES 23	47.33	c	56.00	b	12.43	b	7.36	b	3.59	b	1.88	c	1.79	i	15.57	e	1.61	e	1.72	c	5.73	c
IFES 24	23.67	d	31.67	b	9.80	b	5.46	b	2.57	b	2.73	c	2.98	h	23.84	d	6.17	d	3.28	a	9.37	b
IFES 25	52.00	c	46.50	b	16.45	b	8.97	b	4.89	a	2.45	c	1.51	i	17.05	e	2.23	e	1.85	c	8.91	b
IFES 26	62.00	b	79.67	a	20.43	a	7.85	b	3.46	b	2.76	c	8.83	d	13.00	f	5.09	d	1.46	c	10.36	b
IFES 27	50.67	c	58.50	b	16.87	b	8.99	b	3.97	b	3.53	c	5.38	f	16.00	e	6.55	d	1.91	c	10.48	b
IFES 28	62.67	b	76.33	a	25.93	a	7.55	b	3.70	b	2.75	c	2.77	h	5.92	g	0.63	e	0.59	d	7.12	c
IFES 31	19.67	d	22.17	b	6.78	b	12.13	a	3.61	b	1.77	c	2.76	h	11.69	f	1.90	e	1.46	c	10.38	b
IFES 32	49.00	c	71.50	a	16.12	b	8.72	b	4.11	a	3.11	c	3.72	g	30.07	c	6.48	d	1.91	c	6.61	c
IFES 33	49.33	c	81.00	a	14.43	b	8.57	b	4.38	a	3.92	b	5.06	f	47.42	a	30.94	a	2.08	c	12.29	a
IFES 34	58.00	b	44.00	b	13.25	b	8.20	b	3.91	b	3.17	c	2.90	h	19.89	d	3.15	e	1.53	c	9.95	b
IFES 35	43.33	c	56.33	b	17.87	b	6.78	b	2.90	b	2.01	c	2.78	h	13.71	f	1.52	e	1.41	c	8.94	b
IFES 36	50.56	c	72.11	a	17.41	b	8.98	b	4.31	a	2.80	c	2.75	h	19.31	d	4.31	d	2.05	c	9.69	b
IFES 37	41.00	c	73.67	a	14.30	b	15.22	a	5.41	a	3.62	c	5.45	f	38.09	b	14.54	c	2.01	c	10.24	b
IFES 38	33.33	d	50.33	b	17.47	b	6.26	b	3.08	b	3.00	c	2.52	h	26.08	c	5.12	d	4.33	a	10.79	b
IFES 39	45.33	c	67.33	a	19.20	b	7.70	b	3.59	b	1.91	c	2.83	h	11.27	f	1.89	e	1.83	c	5.68	c

IFES 40	21.67	d	17.67	b	7.80	b	3.45	b	0.88	b	1.45	c	1.42	i	8.58	g	0.66	e	0.77	d	10.26	b
IFES 41	40.00	c	50.33	b	17.23	b	7.11	b	3.39	b	2.14	c	2.72	h	17.45	e	1.82	e	1.71	c	7.93	c
IFES 43	50.00	c	81.78	a	18.03	b	8.00	b	3.56	b	3.17	c	4.92	f	33.51	c	13.67	c	2.03	c	9.47	b
IFES 44	60.00	b	66.33	a	16.30	b	10.00	a	5.31	a	3.45	c	4.41	g	33.59	c	10.77	d	2.07	c	8.79	b
IFES 47	65.33	b	95.67	a	25.73	a	8.12	b	3.59	b	2.78	c	2.96	h	27.42	c	6.75	d	1.69	c	9.33	b
IFES 48	67.50	b	86.50	a	16.55	b	7.57	b	3.19	b	5.56	b	2.97	h	14.81	e	1.31	e	1.86	c	8.89	b
IFES 49	47.00	c	54.33	b	16.50	b	6.96	b	3.40	b	2.07	c	2.69	h	14.52	e	1.87	e	1.79	c	6.30	c
IFES 50	37.67	c	48.33	b	18.13	b	8.75	b	3.91	b	4.17	b	6.32	e	9.53	g	5.17	d	1.69	c	14.34	a
IFES 51	77.50	a	100.50	a	18.35	b	9.20	a	4.61	a	4.15	b	4.02	g	49.50	a	20.56	b	2.94	b	14.19	a
IFES 53	38.33	c	43.33	b	7.27	b	7.06	b	3.11	b	1.88	c	1.76	i	13.52	f	0.93	e	1.31	d	12.28	a
IFES 55	91.67	a	87.67	a	29.20	a	12.53	a	5.98	a	3.37	c	3.75	g	7.63	g	0.95	e	0.52	d	10.26	b
IFES 56	65.00	b	83.00	a	21.60	a	10.02	a	4.50	a	3.32	c	4.03	g	29.45	c	7.00	d	1.83	c	8.73	b
IFES 57	78.00	a	88.67	a	24.93	a	8.54	b	3.79	b	36.00	a	35.08	a	12.66	f	1.91	e	0.92	d	8.33	c
IFES 58	58.67	b	70.00	a	20.87	a	9.85	a	4.39	a	4.94	b	6.27	e	41.27	b	19.34	b	2.37	c	12.37	a
IFES 59	60.00	b	105.67	a	23.33	a	11.29	a	4.96	a	3.94	b	3.02	h	19.79	d	3.88	e	2.19	c	13.35	a
IFES 60	43.67	c	57.22	b	14.16	b	9.80	a	4.16	a	5.11	b	5.84	e	14.99	e	4.47	d	1.86	c	12.10	a
IFES 61	30.00	d	36.67	b	11.57	b	6.21	b	2.19	b	2.25	c	2.06	i	16.61	e	2.04	e	1.55	c	11.65	a
IFES 62	52.89	c	73.00	a	14.41	b	8.09	b	3.98	b	2.16	c	2.67	h	16.96	e	2.25	e	2.07	c	9.89	b
IFES 63	40.00	c	29.67	b	17.83	b	7.04	b	2.67	b	2.19	c	4.26	g	12.04	f	2.63	e	1.23	d	12.55	a
IFES 67	55.50	b	67.00	a	18.70	b	12.45	a	4.78	a	6.30	b	12.79	b	28.24	c	22.33	b	2.23	c	16.46	a
IFES 68	46.33	c	48.33	b	11.60	b	7.62	b	3.46	b	2.13	c	2.34	h	14.42	e	2.06	e	1.84	c	10.42	b
IFES 69	65.00	b	89.00	a	20.32	a	10.21	a	4.95	a	5.59	b	10.97	c	22.11	d	16.24	c	2.28	c	10.89	b
IFES 71	60.00	b	46.00	b	17.57	b	8.23	b	3.62	b	3.65	c	6.02	e	14.01	f	4.47	d	1.51	c	8.33	c
IFES 72	88.00	a	84.50	a	20.73	a	11.42	a	5.37	a	3.34	c	1.86	i	4.47	g	0.40	e	0.97	d	10.33	b
IFES 74	43.33	c	52.67	b	21.63	a	7.22	b	3.44	b	1.96	c	2.61	h	15.91	e	1.61	e	1.68	c	9.61	b
IFES 76	72.50	a	73.50	a	24.05	a	8.84	b	4.01	b	3.24	c	6.03	e	18.87	e	5.27	d	1.62	c	13.29	a
IFES 81	72.33	a	78.67	a	18.50	b	10.85	a	5.81	a	5.03	b	6.97	e	21.31	d	8.57	d	1.82	c	12.85	a
IFES 82	67.22	b	72.78	a	19.70	a	10.80	a	4.42	a	5.35	b	4.98	f	48.26	a	21.28	b	2.57	b	13.48	a
IFES 85	67.67	b	79.67	a	24.17	a	10.01	a	5.39	a	4.38	b	8.14	d	15.39	e	7.00	d	2.03	c	12.89	a
IFES 90	47.89	c	57.11	b	17.88	b	10.42	a	4.14	a	4.18	b	3.75	g	45.43	a	17.18	c	2.32	c	12.37	a
IFES 91	44.33	c	59.33	b	18.37	b	10.80	a	3.55	b	3.51	c	5.25	f	40.17	b	16.22	c	2.39	c	10.23	b
IFES 92	42.83	c	76.67	a	18.08	b	7.69	b	4.51	a	3.05	c	2.45	h	25.82	c	6.50	d	3.52	a	10.62	b
IFES 93	95.67	a	97.67	a	23.90	a	10.55	a	4.44	a	2.74	c	2.81	h	7.15	g	0.77	e	0.61	d	9.33	b

IFES 94	64.33	b	79.33	a	18.37	b	11.09	a	5.36	a	4.89	b	4.46	g	23.38	d	7.80	d	2.53	b	12.77	a
IFES 95	74.67	a	91.33	a	28.27	a	9.25	a	4.12	a	3.13	c	2.79	h	5.63	g	0.50	e	0.48	d	6.73	c
IFES 99	53.67	c	55.33	b	17.00	b	6.35	b	3.14	b	2.33	c	1.27	i	13.90	f	1.42	e	1.66	c	8.77	b
IFES 100	50.67	c	60.00	b	17.37	b	9.08	b	4.06	a	2.67	c	2.66	h	5.93	g	0.38	e	0.35	d	8.77	b
IFES 101	50.00	c	50.00	b	15.25	b	8.55	b	3.72	b	4.25	b	8.49	d	12.41	f	6.29	d	1.78	c	11.25	a

PH—Plant Height (cm); CD—Crown Diameter (cm) SD—Stem Diameter (mm); LL—Leaf Length (cm); LW—Leaf Width (cm); PL—Petiole Length (cm) ; FL—Fruit Length (cm); FD—Fruit Diameter (mm); FFM—Fruit Fresh Mass (g); PT—Pericarp Thickness (mm); FLD—Flower Diameter (mm).