

## Integration of quantitative and qualitative descriptors for genetic diversity studies of watermelon accessions

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**Supplementary Table 1:** Description of the origin of watermelon accessions collected in the State of Rio Grande do Norte (RN) in 2010.

Accession	Origin	
	Location	Geographical coordinates <sup>1</sup>
1	Caraúbas-RN, Brazil	5°47'02.0"S 37°33'33.2"W
2	Caraúbas-RN, Brazil	5°47'02.0"S 37°33'33.2"W
3	Caraúbas-RN, Brazil	5°47'02.0"S 37°33'33.2"W
4	Caraúbas-RN, Brazil	5°47'02.0"S 37°33'33.2"W
5	Caraúbas-RN, Brazil	5°47'02.0"S 37°33'33.2"W
7	Lages Pintadas-RN, Brazil	6°08'56.5"S 36°07'02.6"W
8	Apodi-RN, Brazil	5°39'40.4"S 37°47'55.8"W
11	Lages Pintadas-RN, Brazil	6°08'56.5"S 36°07'02.6"W
12	Mossoró-RN, Brazil	5°11'00.4"S 37°21'08.8"W
15	Apodi-RN, Brazil	5°39'40.4"S 37°47'55.8"W
17	Apodi-RN, Brazil	5°39'40.4"S 37°47'55.8"W
18	Apodi-RN, Brazil	5°39'40.4"S 37°47'55.8"W
26	Apodi-RN, Brazil	5°39'40.4"S 37°47'55.8"W
27	Apodi-RN, Brazil	5°39'40.4"S 37°47'55.8"W
30	Mossoró-RN, Brazil	5°11'00.4"S 37°21'08.8"W
33	Apodi-RN, Brazil	5°39'40.4"S 37°47'55.8"W
34	Apodi-RN, Brazil	5°39'40.4"S 37°47'55.8"W
36	Cruzeta-RN, Brazil	6°24'42.0"S 36°47'15.6"W
40	Cerro Corá-RN, Brazil	6°01'58.5"S 36°20'13.7"W
41	Cerro Corá-RN, Brazil	6°01'58.5"S 36°20'13.7"W
42	Cerro Corá-RN, Brazil	6°01'58.5"S 36°20'13.7"W
46	Cerro Corá-RN, Brazil	6°01'58.5"S 36°20'13.7"W

<sup>1</sup>Geographical coordinates of the municipality seat where the accessions were collected.

**Supplementary Table 2:** Descriptors used in the characterization of of watermelon accessions collected in the State of Rio Grande do Norte, Brazil.

Phenological phases/ Plant organ	Descriptors	
	Quantitative	Qualitative
Emergence and plantlet	E: Emergence percentage (%) - Ratio between the number of emerged plantlets one day prior to transplanting and the number of seeds, multiplied by 100.	
	EVI: Emergence velocity index - Determined by the sum of the ratios between number of plantlets emerged over the period and the number of days elapsed from sowing to emergence.	
	NDL: Number of definitive leaves - Evaluated one day prior to transplanting.	
	HL: Hypocotyl length (cm) - Measured with a millimeter ruler one day prior to transplanting.	
	HD: Hypocotyl diameter (cm) - Measured with a caliper one day prior to transplanting.	
	CI: Cotyledon length (cm) - Measured with a caliper one day prior to transplanting.	
Vegetative	CD: Cotyledon diameter (cm) - Measured with a digital caliper one day prior to transplanting.	
	PLD: Primary lobing degree (1-weak, 2-intermediate, 3-strong).	
	SLD: Secondary lobing degree (1-weak, 2-intermediate, 3-strong).	
Reproductive	LC: Leaf color (1-light green, 2-medium green, 3- dark green).	
	NDOFFF: Number of days for the opening of the first female flower.	
Fruit	NDOFMF: Number of days for the opening of the first male flower.	
	FM: Fruit mass (kg) - Measured with a semi-analytical scale.	
	SAP: Shape of the apical part (1-flattened, 2-round flat, 3-round, 4-round to conic, 5-conic).	
	SM: Skin mass (kg) - Measured with a semi-analytical scale.	
	SSP: Size of pistil scar (1-small, 2-medium, 3-large).	
	PM: Pulp mass (kg) - Obtained by the difference between FM and SM.	
Fruit	PBC: Predominant background color (1-light green, 2-medium green, 3- dark green).	
	MST: Mean skin thickness (cm) - Measurement obtained from four parts of the skin (peduncle, apical, side facing the sun, and side facing the ground).	
	SSP: Skin stripe pattern (1-no stripes, 2-fringed, 3-blotchy, 4-thin stripes, 5-large stripes, 6-fringed stripes with irregular streaks, 7-thin stripes formed by a thin fringe).	
	CD: Cross-section diameter of the fruit (cm) - Measured with a millimeter ruler.	IC: Internal collapse (0-absent, 1-present).

LD: Cross-section diameter of the fruit (cm) - Measured with a millimeter ruler.

PY: Pulp yield (%) - Percentage of pulp compared to the total fruit mass.

TTA: Total titratable acidity (%) - Determined through the titration of one 10-g aliquot of pulp with a NaOH 0.1 N solution (IAL, 2008)<sup>1</sup>.

SS: Soluble solids of the pulp (°Brix) - Determined using refractometry, using the juice filtered from the pulp (IAL 2008).

VCC: Vitamin C content (mg/100 mL) - Determined using the method of potassium iodate (IAL, 2008).

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M100S: Mass of 100 seeds (g) - Measured with an analytical scale.

TSM: Total seed mass (g) - Measured with an analytical scale.

NSF: Number of seeds per fruit

SL: Seed length (mm) - Measured with a digital caliper.

SW: Seed width (mm) - Measured with a digital caliper.

ST: Seed thickness (mm) - Measured with a digital caliper.

NS100P: Number of seeds per 100 g of pulp - Obtained using the equation: NSF\*100/PM.

LS: Loose seeds (0-absent, 1-present).

FS: Fruit shape (1-globular (round), 2-oval, 3-round, 4-oblongue blocky, 5-elongated conic).

PPC: Predominant pulp color (1-white, 2-yellow, 3-light pink, 4-intense pink, 5-red).

SPC: Secondary pulp color (0-absent, 1-white, 2-yellow, 3-light pink, 4-intense pink, 5-red).

CPS: Color of the pulp around seeds (0-absent, 1-white, 2-yellow, 3-light pink, 4-intense pink, 5-red).

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SC: Seed color (1-cream, 2-brown, 3-green, 4-black).

ISC: Intensity of seed color (1-light, 2-average, 3-dark).

PP: Presence of pleurogram (0-absent, 1-present).

UP: Uniformity of pleurogram (0-absent, 1-uniform, 2-not uniform).

PCo: Pleurogram color (0-absent, 1-black, 2-brown).

PS: Presence of stripes (0-absent, 1-present).

TS: Type of stripe (0-absent, 1- uniform, 2- blotch in the hilum region, 3-irregular shaped).

SC: Stripe color (0-absent, 1- cream, 2-brown, 3-black).

PC: Presence of channels (0-absent, 1-present).

CC: Color of channels (0-absent, 1- cream, 2-brown, 3-black).

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Seeds

<sup>1</sup>IAL - Instituto Adolfo Lutz. Métodos físico-químicos para análise de alimentos. São Paulo: Instituto Adolfo Lutz, 4.ed. 2008,1020p.