Supplementary Material

Figure S1: Scale for percentage values of carotenoids, referred to as fruit blush, where 0% indicates the absence of carotenoids in the fruit, whereas values of 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, and 100% indicate the presence of carotenoids. These percentages are based on the portion of the mango fruit located between the ventral shoulder and the dorsal shoulder, with 100% referencing the total region located between the aforementioned parts.

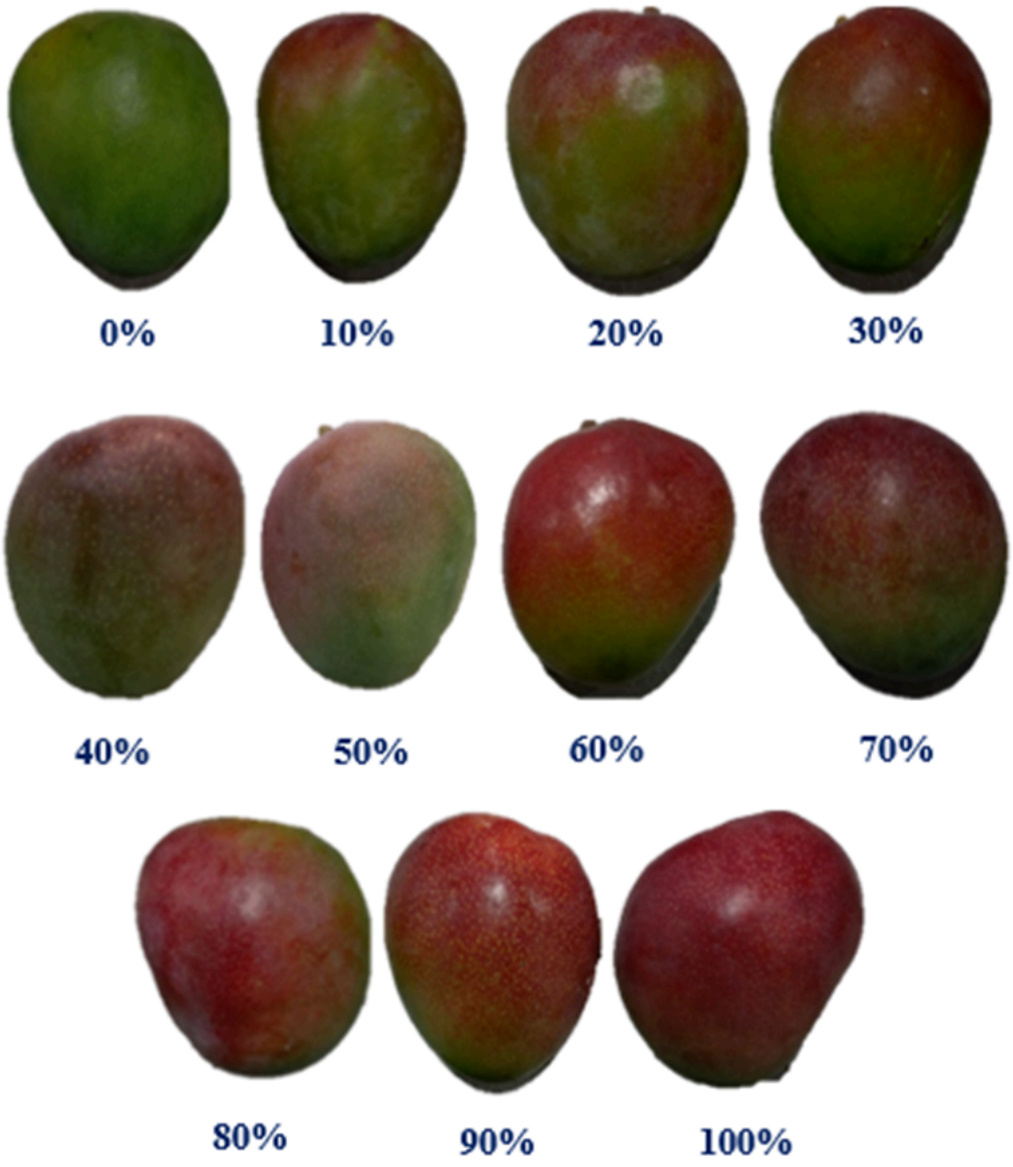

Figure S2: Scale for values of the pulp color of ripe fruit when subjected to a longitudinal cut between the poles, where the values correspond to a specific color: 1.0 white and green, 1.5 green, 2.0 green and yellow, 2.5 yellow, 3.0 yellow-orange, 3.5 orange, and 4.0 deep orange.

Figure S3: Quality traits for 'Kent' mango fruit at physiological maturity. (a) Fruit firmness. (b) Percentage of fruit canopy cover. (c) Fruit pulp color. (d) Soluble solids content of the fruit. (e) Titratable acidity of the fruit. (f) Fruit dry matter percentage. Different letters indicate statistically significant differences among treatments, according to Tukey's multiple comparison test at a significance level of $p < 0.05$. Treatments consisted of combinations of compost (t/ha) and biol (%) as follows: 0-0 (T0), 5-0 (T1), 15-0 (T2), 0-5 (T3), 0-10 (T4), 5-5 (T5), 5-10 (T6), 15-5 (T7), and 15-10 (T8). Treatment T0 corresponds to conventional fertilization practices used by farmers in Tambogrande, which include chemical soil fertilization (230 kg/ha N, 220 kg/ha P_2O_5, 280 kg/ha K_2O, 36 kg/ha Ca, and 60 kg/ha MgO) and foliar fertilization (90 mg/ha N, 28 mg/ha P_2O_5, 380 mg/ha K_2O, 98 mg/ha Ca, and 100 mg/ha MgO). Analysis was based on 405 samples (n = 405).

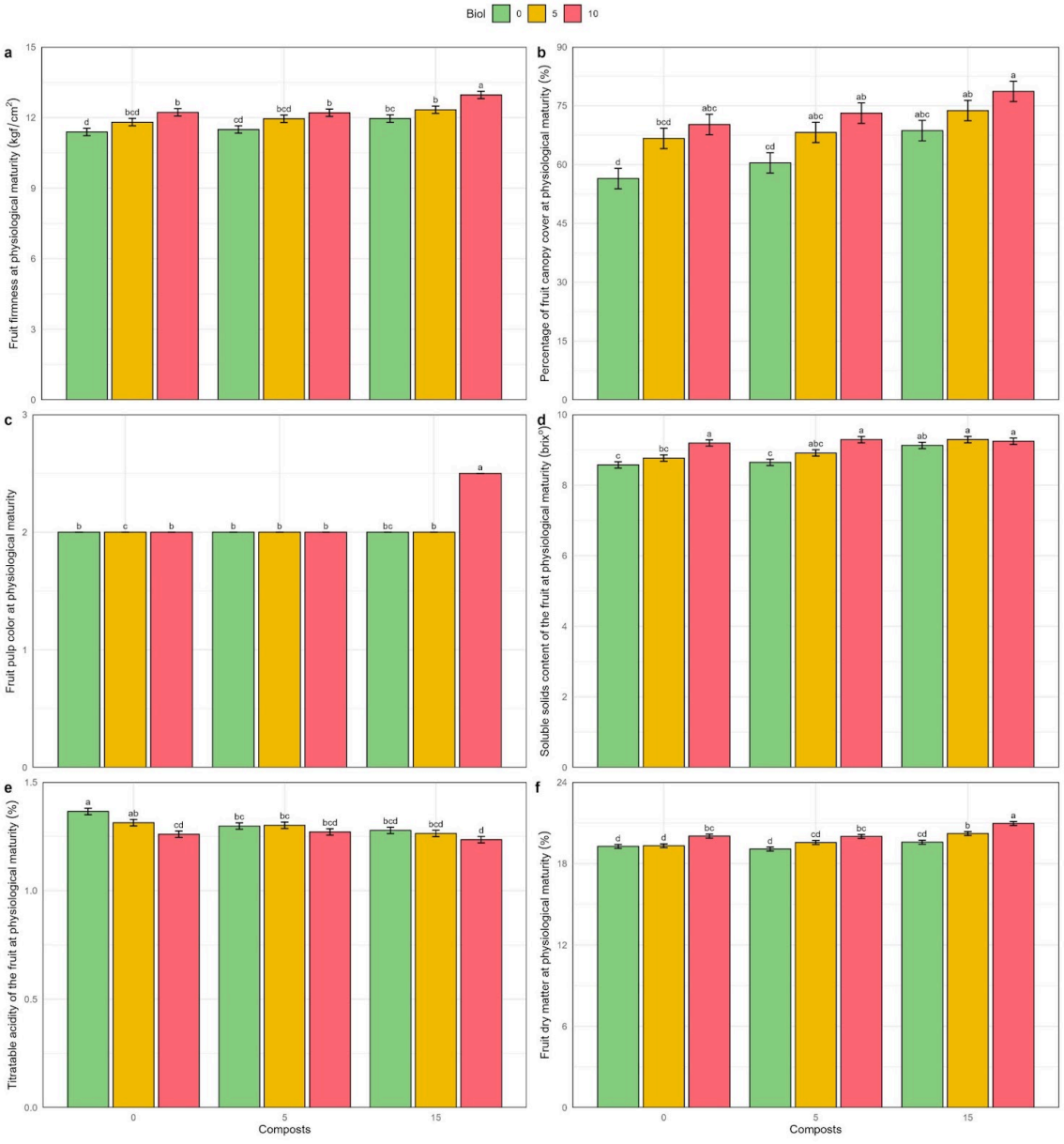

Figure S4: Quality characteristics for mango fruit of the 'Kent' variety at commercial maturity. (a) Fruit firmness. (b) Soluble solids content of the fruit. (c) Titratable acidity of the fruit. (d) Fruit dehydration percentage. (e) Fruit pH. (f) Fruit pulp color. Different letters indicate statistically significant differences among treatments, according to Tukey's multiple comparison test at a significance level of $p < 0.05$. Treatments consisted of combinations of compost (t/ha) and biol (%) as follows: 0-0 (T0), 5-0 (T1), 15-0 (T2), 0-5 (T3), 0-10 (T4), 5-5 (T5), 5-10 (T6), 15-5 (T7), and 15-10 (T8). Treatment T0 corresponds to conventional fertilization practices used by farmers in Tambogrande, which include chemical soil fertilization (230 kg/ha N, 220 kg/ha P_2O_5, 280 kg/ha K_2O, 36 kg/ha Ca, and 60 kg/ha MgO) and foliar fertilization (90 mg/ha N, 28 mg/ha P_2O_5, 380 mg/ha K_2O, 98 mg/ha Ca, and 100 mg/ha MgO). Analysis was based on 135 samples (n = 135).

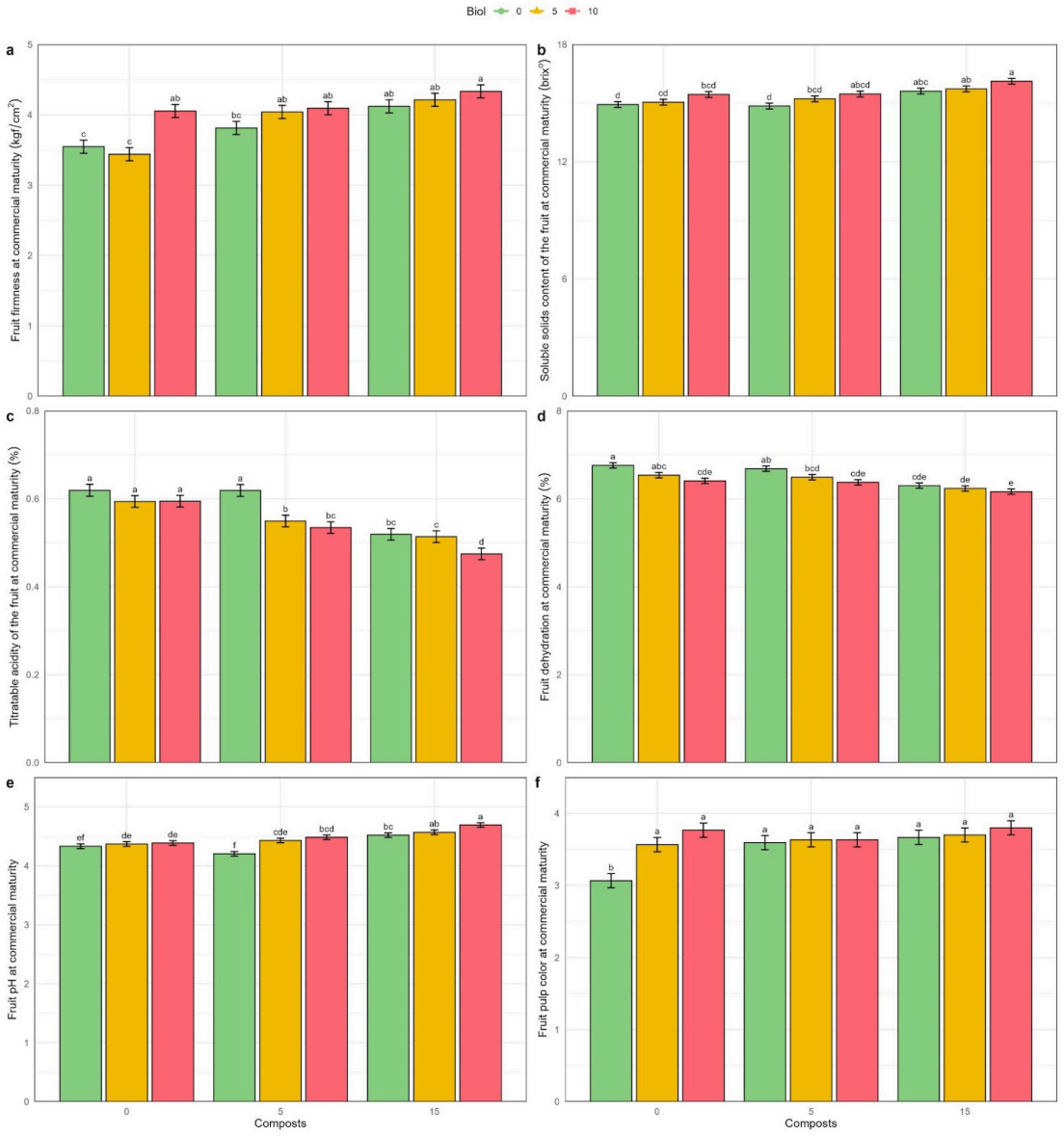

Table S1: Values of the nutrients, substances, and properties of the Nutri Suelo 3M compost provided by Soluciones Orgánicas Loma Fértil, Peru in the product's technical data sheet.

Nutrients	**Values**
Nitrogen N(%)	2.09
Phosphorus P (%)	2.01
Potassium K (%)	2.56
Calcium Ca (%)	4.45
Magnesium Mg (%)	2.80
Silicon Si (%)	12.0
Sodium Na (%)	0.21
Iron Fe (%)	9.50
Copper Cu (ppm)	19.0
Zinc Zn (ppm)	77.0
Manganese Mn (ppm)	241.0
Boron B (ppm)	50.0
Substances	**Values**
Humic acids (%)	3.37
Fulvic acids (%)	2.79
Humin (%)	22.34
Organic matter (%)	28.50
Characteristics	**Values**
pH	7.0
Electrical conductivity (EC) (dS/m)	3.17
Cation exchange capacity (CEC) (meq/100 g soil)	35.0
C/N ratio	26/1