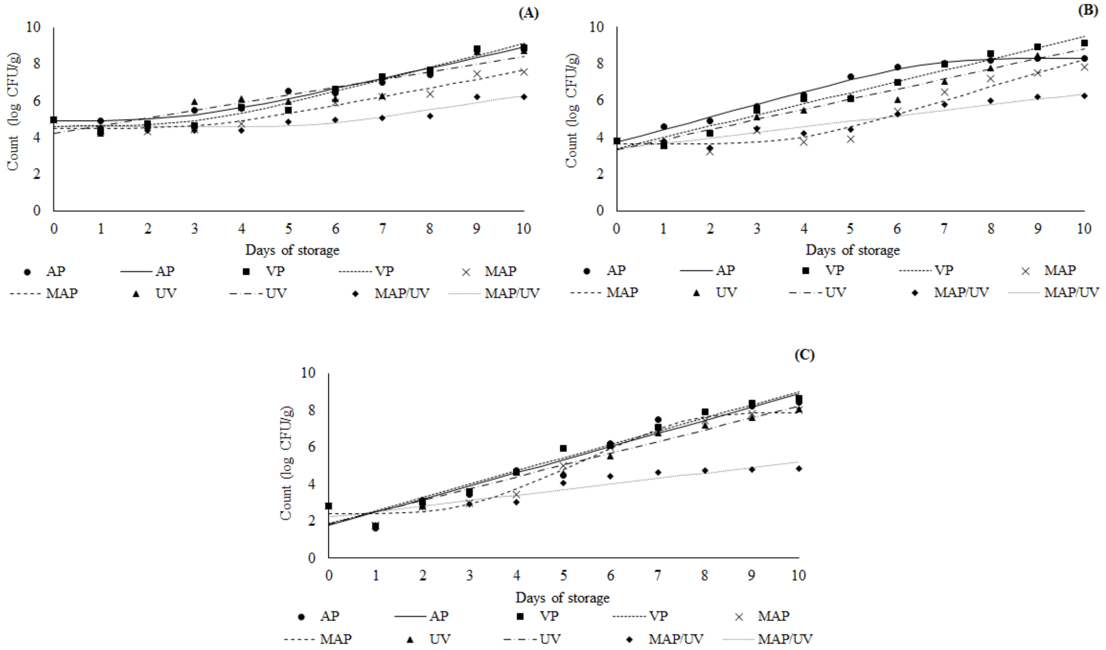

Supplementary File S1. Total aerobic mesophilic count (A), total aerobic psychrotrophic count (B), and *Enterobacteriaceae* count (C) in tilapia (*Oreochromis niloticus*) fillets non- and treated with ultraviolet radiation (UV-C) and modified atmosphere packaging (MAP) stored at 4 ± 1 °C for 10 days. Results are expressed as the mean of log CFU (colony forming units)/g ± standard deviation (n = 10). Symbols indicate the real average values and lines represent the fitted values by primary predictive model designed by Baranyi and Roberts [34]. AP – air-packed tilapia fillets, VP – vacuum-packed tilapia fillets, MAP – MAP-packed tilapia fillets with 50% CO$_2$ and 50% N$_2$, UV – UV-C treated tilapia fillets at 0.30 J/cm^2, and MAP/UV – MAP-packed tilapia fillets with 50% CO$_2$ and 50% N$_2$ treated with UV-C at 0.30 J/cm^2

Supplementary File S2. Biogenic amines, expressed in mg/kg, in tilapia (*Oreochromis niloticus*) fillets non- and treated with ultraviolet radiation (UV-C) and modified atmosphere packaging (MAP) stored at 4 ± 1 °C for 10 days.

Parameters	Treatments[¥]	Days of storage									
		1	2	3	4	5	6	7	8	9	10
Histamine	AP	0.05±0.01^{c}	0.04±0.00^{c}	0.07±0.00^{c}	0.16±0.01^{b}	0.17±0.02^{b}	0.22±0.03^{a}	0.17±0.01^{b}	0.17±0.02^{b}	0.05±0.00^{c}	0.04±0.00^{c}
	VP	0.06±0.01^{e}	0.17±0.01^{b}	0.14±0.00^{c}	0.24±0.01^{a}	0.11±0.01^{d}	0.14±0.01^{c}	0.06±0.00^{e}	0.06±0.00^{e}	0.06±0.01^{e}	0.06±0.00^{e}
	MAP	0.00±0.00^{e}	0.05±0.00^{cd}	0.07±0.01^{bc}	0.07±0.00^{b}	0.05±0.00^{d}	0.08±0.01^{b}	0.16±0.01^{a}	0.17±0.01^{a}	0.05±0.01^{d}	0.05±0.00^{d}
	UV	0.05±0.00^{fg}	0.13±0.00^{bc}	0.12±0.00^{cd}	0.12±0.00^{cd}	0.14±0.01^{ab}	0.15±0.01^{a}	0.12±0.00^{d}	0.09±0.00^{e}	0.04±0.00^{g}	0.06±0.01^{f}
	MAP/UV	0.11±0.01^{e}	0.34±0.00^{c}	0.47±0.03^{b}	0.79±0.00^{a}	0.22±0.00^{d}	0.08±0.00^{ef}	0.07±0.00^{f}	0.08±0.01^{f}	0.09±0.01^{ef}	0.08±0.00^{ef}
Tyramine	AP	0.07±0.00^{e}	0.04±0.00^{f}	0.04±0.00^{f}	0.08±0.00^{e}	0.22±0.00^{d}	0.34±0.00^{c}	0.46±0.00^{a}	0.44±0.00^{b}	0.33±0.01^{c}	0.04±0.00^{f}
	VP	0.04±0.00^{c}	0.04±0.00^{c}	0.16±0.00^{b}	0.32±0.00^{a}	0.04±0.00^{c}	0.04±0.00^{c}	0.04±0.00^{c}	0.03±0.00^{d}	0.04±0.00^{c}	0.04±0.00^{c}
	MAP	0.04±0.00^{d}	0.04±0.00^{d}	0.04±0.00^{d}	0.32±0.01^{a}	0.29±0.00^{b}	0.32±0.00^{a}	0.22±0.00^{c}	0.02±0.00^{e}	0.04±0.00^{d}	0.04±0.00^{d}
	UV	0.04±0.00^{a}	0.04±0.00^{a}	0.04±0.00^{a}	0.04±0.00^{a}	0.04±0.00^{a}	0.04±0.00^{a}	0.04±0.00^{a}	0.04±0.00^{a}	0.04±0.00^{a}	0.04±0.00^{a}
	MAP/UV	0.04±0.00^{b}	0.04±0.00^{ab}	0.04±0.00^{b}	0.05±0.00^{a}	0.03±0.00^{c}	0.04±0.00^{b}	0.04±0.00^{b}	0.04±0.00^{b}	0.04±0.00^{b}	0.04±0.00^{b}
Cadaverine	AP	0.01±0.00^{e}	0.01±0.00^{e}	0.04±0.00^{c}	0.03±0.00^{de}	0.04±0.00^{cd}	0.04±0.00^{cd}	0.04±0.00^{cd}	0.06±0.00^{b}	0.07±0.01^{b}	0.19±0.01^{a}
	VP	0.00±0.00^{e}	0.02±0.00^{d}	0.03±0.00^{c}	0.02±0.00^{d}	0.02±0.00^{d}	0.01±0.00^{de}	0.07±0.01^{b}	0.07±0.00^{b}	0.11±0.00^{a}	0.12±0.00^{a}
	MAP	0.00±0.00^{f}	0.00±0.00^{f}	0.01±0.00^{e}	0.02±0.00^{d}	0.04±0.00^{c}	0.02±0.00^{d}	0.03±0.00^{c}	0.08±0.00^{a}	0.07±0.00^{b}	0.07±0.00^{b}
	UV	0.00±0.00^{fg}	0.00±0.00^{g}	0.01±0.00^{f}	0.01±0.00^{fg}	0.01±0.00^{e}	0.02±0.00^{d}	0.06±0.00^{b}	0.07±0.00^{a}	0.05±0.00^{c}	0.05±0.00^{c}
	MAP/UV	0.02±0.00^{e}	0.02±0.00^{e}	0.01±0.00^{e}	0.04±0.00^{d}	0.05±0.00^{c}	0.02±0.00^{e}	0.02±0.00^{e}	0.02±0.00^{e}	0.10±0.00^{b}	0.16±0.00^{a}
Putrescine	AP	0.01±0.00^{e}	0.01±0.00^{e}	0.01±0.00^{e}	0.01±0.00^{e}	0.06±0.00^{c}	0.07±0.00^{c}	0.07±0.00^{c}	0.04±0.00^{d}	0.11±0.00^{b}	0.14±0.00^{a}
	VP	0.01±0.00^{d}	0.01±0.00^{d}	0.01±0.00^{d}	0.01±0.00^{d}	0.01±0.00^{d}	0.01±0.00^{d}	0.13±0.00^{c}	0.17±0.00^{b}	0.30±0.00^{a}	0.14±0.00^{c}
	MAP	0.00±0.00^{g}	0.01±0.00^{f}	0.01±0.00^{g}	0.01±0.00^{g}	0.01±0.00^{e}	0.01±0.00^{d}	0.01±0.00^{e}	0.03±0.00^{c}	0.14±0.00^{b}	0.18±0.00^{a}
	UV	0.01±0.00^{de}	0.00±0.00^{e}	0.01±0.00^{de}	0.01±0.00^{de}	0.01±0.00^{de}	0.01±0.00^{de}	0.01±0.00^{d}	0.14±0.00^{c}	0.22±0.01^{a}	0.15±0.00^{b}
	MAP/UV	0.05±0.00^{a}	0.02±0.00^{c}	0.03±0.00^{b}	0.04±0.00^{b}	0.01±0.00^{de}	0.02±0.00^{d}	0.01±0.00^{e}	0.01±0.00^{e}	0.01±0.00^{e}	0.03±0.00^{b}
Spermidine	AP	0.01±0.00^{de}	0.01±0.00^{cd}	0.01±0.00^{cd}	0.01±0.00^{e}	0.01±0.00^{de}	0.01±0.00^{e}	0.01±0.00^{c}	0.02±0.00^{b}	0.02±0.00^{b}	0.03±0.00^{a}
	VP	0.01±0.00^{ab}	0.01±0.00^{c}	0.01±0.00^{a}	0.01±0.00^{bc}	0.01±0.00^{c}	0.01±0.00^{c}	0.01±0.00^{a}	0.01±0.00^{bc}	0.01±0.00^{bc}	0.01±0.00^{bc}
	MAP	0.01±0.00^{bcd}	0.01±0.00^{abc}	0.01±0.00^{e}	0.01±0.00^{bcd}	0.01±0.00^{de}	0.01±0.00^{cd}	0.01±0.00^{a}	0.01±0.00^{ab}	0.01±0.00^{de}	0.01±0.00^{bcd}
	UV	0.01±0.00^{abcd}	0.01±0.00^{bcd}	0.01±0.00^{bcd}	0.01±0.00^{d}	0.01±0.00^{bcd}	0.01±0.00^{abcd}	0.01±0.00^{ab}	0.01±0.00^{abc}	0.01±0.00^{a}	0.01±0.00^{cd}
	MAP/UV	0.01±0.00^{ab}	0.01±0.00^{abc}	0.01±0.00^{abc}	0.01±0.00^{bc}	0.01±0.00^{ab}	0.01±0.00^{c}	0.01±0.00^{abc}	0.01±0.00^{a}	0.01±0.00^{abc}	0.01±0.00^{a}
Spermine	AP	0.06±0.01^{c}	0.06±0.00^{cd}	0.06±0.00^{cd}	0.04±0.00^{e}	0.06±0.00^{c}	0.07±0.00^{bc}	0.08±0.01^{a}	0.06±0.00^{c}	0.07±0.00^{ab}	0.04±0.00^{de}
	VP	0.07±0.01^{a}	0.05±0.00^{cd}	0.04±0.00^{de}	0.04±0.01^{de}	0.04±0.00^{e}	0.03±0.00^{e}	0.04±0.00^{de}	0.04±0.00^{de}	0.06±0.01^{ab}	0.06±0.00^{bc}

MAP	0.08±0.01^{a}	0.04±0.00^{def}	0.05±0.00^{de}	0.04±0.00^{efg}	0.03±0.00^{g}	0.03±0.00^{fg}	0.06±0.00^{cd}	0.06±0.00^{cd}	0.06±0.00^{bc}	0.07±0.00^{ab}
UV	0.06±0.01^{a}	0.03±0.00^{cd}	0.03±0.00^{d}	0.03±0.00^{d}	0.03±0.00^{bcd}	0.04±0.00^{bc}	0.06±0.00^{a}	0.04±0.00^{b}	0.06±0.00^{a}	0.05±0.00^{a}
MAP/UV	0.07±0.00^{a}	0.05±0.00^{bc}	0.05±0.00^{bc}	0.04±0.00^{cd}	0.05±0.00^{bc}	0.04±0.00^{cd}	0.03±0.00^{d}	0.05±0.00^{bc}	0.05±0.00^{bc}	0.05±0.01^{b}

Results are expressed as mean ± standard deviation (n = 10). ^{a,b,c,d,e,f,g}Different letters in the same row within same treatment indicate significant differences ($p < 0.05$) among days of storage. $^{¥}$AP – air-packed tilapia fillets, VP – vacuum-packed tilapia fillets, MAP – MAP-packed tilapia fillets with 50% CO_2 and 50% N_2, UV – UV-C treated tilapia fillets at 0.30 J/cm^2, and MAP/UV – MAP-packed tilapia fillets with 50% CO_2 and 50% N_2 treated with UV-C at 0.30 J/cm^2.

Supplementary File S3. Results of pH, ammonia (μg/g) and malondialdehyde (MDA; mg/kg) in tilapia (*Oreochromis niloticus*) fillets non- and treated with ultraviolet radiation (UV-C) and modified atmosphere packaging (MAP) stored at 4 ± 1 °C for 10 days.

Parameters	Treatments¥	Days of storage									
		1	2	3	4	5	6	7	8	9	10
pH	AP	6.23 ± 0.01^{b}	6.29 ± 0.01^{a}	6.20 ± 0.01^{bc}	6.19 ± 0.01^{bc}	6.20 ± 0.01^{bc}	6.15 ± 0.01^{cd}	6.12 ± 0.01^{d}	6.17 ± 0.03^{bcd}	6.05 ± 0.01^{e}	5.78 ± 0.06^{f}
	VP	6.20 ± 0.01^{ab}	6.25 ± 0.02^{a}	6.20 ± 0.02^{ab}	6.19 ± 0.01^{ab}	6.03 ± 0.06^{c}	6.16 ± 0.01^{b}	5.59 ± 0.03^{e}	6.04 ± 0.01^{c}	5.98 ± 0.02^{d}	6.07 ± 0.01^{c}
	MAP	6.27 ± 0.01^{a}	6.19 ± 0.02^{b}	6.21 ± 0.02^{b}	6.19 ± 0.01^{b}	6.11 ± 0.01^{c}	5.96 ± 0.01^{e}	5.79 ± 0.02^{f}	5.75 ± 0.02^{f}	6.06 ± 0.01^{d}	6.06 ± 0.02^{d}
	UV	6.24 ± 0.01^{b}	6.30 ± 0.02^{a}	6.16 ± 0.01^{c}	6.30 ± 0.01^{a}	6.12 ± 0.01^{c}	6.16 ± 0.01^{c}	5.92 ± 0.01^{d}	5.84 ± 0.01^{e}	5.67 ± 0.04^{f}	5.94 ± 0.01^{d}
	MAP/UV	6.20 ± 0.00^{ab}	6.23 ± 0.02^{a}	6.14 ± 0.01^{c}	6.15 ± 0.01^{bc}	6.00 ± 0.01^{de}	6.15 ± 0.05^{bc}	5.95 ± 0.02^{e}	5.79 ± 0.01^{f}	5.74 ± 0.01^{g}	6.02 ± 0.01^{d}
Ammonia	AP	0.70 ± 0.04^{e}	0.74 ± 0.04^{e}	1.18 ± 0.10^{cd}	0.97 ± 0.02^{d}	1.09 ± 0.05^{cd}	1.03 ± 0.04^{d}	1.01 ± 0.06^{d}	1.87 ± 0.03^{a}	1.25 ± 0.08^{c}	1.52 ± 0.03^{b}
	VP	0.78 ± 0.06^{d}	1.02 ± 0.04^{cd}	1.03 ± 0.06^{c}	1.03 ± 0.07^{c}	1.02 ± 0.01^{cd}	1.03 ± 0.08^{c}	1.19 ± 0.04^{bc}	1.31 ± 0.10^{ab}	1.25 ± 0.07^{abc}	1.46 ± 0.02^{a}
	MAP	0.78 ± 0.05^{ef}	0.57 ± 0.05^{f}	1.02 ± 0.07^{cd}	0.93 ± 0.03^{de}	0.93 ± 0.07^{de}	0.89 ± 0.04^{de}	0.97 ± 0.06^{cde}	1.17 ± 0.07^{bc}	1.32 ± 0.10^{ab}	1.51 ± 0.00^{a}
	UV	0.61 ± 0.04^{d}	0.77 ± 0.06^{d}	1.14 ± 0.02^{abc}	1.11 ± 0.07^{abc}	1.02 ± 0.04^{c}	1.01 ± 0.03^{c}	1.11 ± 0.04^{abc}	1.07 ± 0.06^{bc}	1.28 ± 0.11^{ab}	1.30 ± 0.00^{a}
	MAP/UV	0.84 ± 0.05^{de}	0.87 ± 0.05^{cde}	0.81 ± 0.07^{e}	0.96 ± 0.09^{cde}	0.95 ± 0.06^{cde}	1.10 ± 0.01^{bc}	0.99 ± 0.00^{cde}	1.08 ± 0.06^{bcd}	1.25 ± 0.10^{ab}	1.35 ± 0.06^{a}
MDA	AP	0.04 ± 0.00^{e}	0.04 ± 0.00^{e}	0.01 ± 0.00^{f}	0.03 ± 0.00^{e}	0.07 ± 0.00^{d}	0.01 ± 0.00^{f}	0.22 ± 0.01^{a}	0.08 ± 0.01^{d}	0.11 ± 0.00^{c}	0.19 ± 0.01^{b}
	VP	0.02 ± 0.00^{e}	0.04 ± 0.00^{c}	0.04 ± 0.00^{c}	0.06 ± 0.00^{b}	0.03 ± 0.00^{d}	0.04 ± 0.00^{c}	0.19 ± 0.00^{a}	0.02 ± 0.00^{e}	0.02 ± 0.00^{e}	0.02 ± 0.00^{e}
	MAP	0.02 ± 0.00^{g}	0.03 ± 0.00^{e}	0.02 ± 0.00^{f}	0.05 ± 0.00^{d}	0.06 ± 0.00^{c}	0.03 ± 0.00^{f}	0.02 ± 0.00^{f}	0.38 ± 0.00^{b}	0.41 ± 0.00^{a}	0.03 ± 0.00^{e}
	UV	0.05 ± 0.00^{c}	0.02 ± 0.00^{f}	0.03 ± 0.00^{e}	0.03 ± 0.00^{de}	0.04 ± 0.00^{d}	0.06 ± 0.00^{c}	0.02 ± 0.00^{f}	0.12 ± 0.00^{a}	0.05 ± 0.00^{c}	0.07 ± 0.00^{b}
	MAP/UV	0.04 ± 0.00^{h}	0.05 ± 0.00^{gh}	0.10 ± 0.00^{fg}	0.15 ± 0.01^{ef}	0.16 ± 0.00^{e}	0.26 ± 0.00^{d}	0.32 ± 0.00^{c}	0.75 ± 0.04^{b}	0.90 ± 0.01^{a}	0.11 ± 0.01^{ef}

Results are expressed as mean ± standard deviation (n = 10). ^{a,b,c,d,e,f,g,h}Different letters in the same row within same treatment indicate significant differences ($p < 0.05$) among days of storage. ¥AP – air-packed tilapia fillets, VP – vacuum-packed tilapia fillets, MAP – MAP-packed tilapia fillets with 50% CO_2 and 50% N_2, UV – UV-C treated tilapia fillets at 0.30 J/cm^2, and MAP/UV – MAP-packed tilapia fillets with 50% CO_2 and 50% N_2 treated with UV-C at 0.30 J/cm^2.

Supplementary File S4. L* (lightness), a* (redness), b* (yellowness) parameters and total color difference (ΔE) in tilapia (*Oreochromis niloticus*) fillets non- and treated with ultraviolet radiation (UV-C) and modified atmosphere packaging (MAP) stored at 4 ± 1 °C for 10 days.

Parameters	Treatments¥	Days of storage									
		1	2	3	4	5	6	7	8	9	10
L*	AP	59.50 ± 2.17^{ab}	58.95 ± 2.96^{ab}	58.40 ± 1.61^{ab}	59.64 ± 3.56^{ab}	60.53 ± 1.61^{ab}	56.82 ± 1.78^{b}	60.06 ± 5.75^{ab}	59.12 ± 2.91^{ab}	63.91 ± 2.94^{a}	64.11 ± 2.59^{a}
	VP	57.98 ± 2.22^{cde}	58.48 ± 2.39^{bcde}	61.90 ± 2.90^{ab}	57.20 ± 1.63^{de}	58.91 ± 1.39^{abcde}	56.53 ± 0.96^{e}	62.12 ± 2.37^{a}	59.44 ± 1.22^{abcde}	60.58 ± 1.21^{abcd}	60.93 ± 0.77^{abc}
	MAP	55.55 ± 2.18^{b}	60.89 ± 3.76^{ab}	63.16 ± 2.66^{a}	58.74 ± 2.69^{ab}	62.94 ± 3.59^{a}	62.00 ± 1.56^{a}	58.66 ± 1.13^{ab}	60.88 ± 4.67^{ab}	64.46 ± 5.11^{a}	59.87 ± 3.53^{ab}
	UV	59.99 ± 2.28^{bcd}	58.13 ± 1.53^{cd}	61.36 ± 1.35^{abc}	60.79 ± 3.16^{abcd}	61.35 ± 3.10^{abc}	59.79 ± 3.44^{bcd}	56.87 ± 1.90^{d}	58.21 ± 1.58^{cd}	64.89 ± 2.02^{a}	63.97 ± 1.42^{ab}
	MAP/UV	59.61 ± 1.78^{ab}	60.48 ± 3.16^{ab}	60.15 ± 1.88^{ab}	64.01 ± 4.00^{a}	64.67 ± 3.88^{a}	58.67 ± 2.48^{b}	59.81 ± 2.67^{ab}	60.50 ± 2.97^{ab}	64.44 ± 1.80^{a}	63.81 ± 1.77^{ab}
a*	AP	0.91 ± 0.06^{a}	-1.15 ± 0.11^{cd}	-2.47 ± 0.28^{g}	-2.03 ± 0.11^{f}	-1.20 ± 0.13^{cd}	-1.79 ± 0.09^{ef}	-1.03 ± 0.05^{bc}	-0.73 ± 0.05^{b}	-1.00 ± 0.12^{bc}	-1.47 ± 0.12^{de}
	VP	0.25 ± 0.03^{a}	-0.56 ± 0.06^{b}	-0.65 ± 0.03^{bc}	-1.02 ± 0.07^{de}	-1.19 ± 0.15^{e}	-1.27 ± 0.04^{e}	-1.82 ± 0.14^{f}	-0.76 ± 0.13^{bcd}	-0.86 ± 0.11^{cd}	-0.90 ± 0.07^{cd}
	MAP	-1.16 ± 0.17^{b}	-0.40 ± 0.04^{a}	-2.57 ± 0.03^{c}	-1.42 ± 0.11^{b}	-1.45 ± 0.16^{b}	-2.49 ± 0.13^{c}	-2.53 ± 0.08^{c}	-1.47 ± 0.18^{b}	-2.41 ± 0.05^{c}	-3.96 ± 0.03^{d}
	UV	-1.24 ± 0.21^{bc}	-1.46 ± 0.13^{cd}	-0.83 ± 0.03^{a}	-1.30 ± 0.03^{bc}	-1.24 ± 0.03^{bc}	-2.12 ± 0.11^{e}	-1.64 ± 0.03^{d}	-0.81 ± 0.11^{a}	-1.00 ± 0.15^{ab}	-2.66 ± 0.04^{f}
	MAP/UV	-2.21 ± 0.14^{cd}	-1.64 ± 0.12^{b}	-0.55 ± 0.05^{a}	-1.66 ± 0.21^{b}	-2.04 ± 0.16^{bcd}	-2.01 ± 0.04^{bcd}	-1.97 ± 0.07^{bc}	-2.86 ± 0.49^{e}	-1.58 ± 0.10^{b}	-2.52 ± 0.03^{e}
b*	AP	9.20 ± 0.87^{bc}	8.51 ± 0.36^{c}	9.43 ± 0.52^{bc}	11.13 ± 0.79^{a}	9.13 ± 0.78^{bc}	9.24 ± 0.40^{bc}	12.16 ± 0.20^{a}	9.40 ± 0.81^{bc}	11.86 ± 0.67^{a}	10.67 ± 0.73^{ab}
	VP	7.28 ± 0.42^{cd}	9.55 ± 0.52^{b}	8.36 ± 0.08^{bcd}	8.79 ± 0.74^{bc}	7.09 ± 0.06^{d}	7.85 ± 0.55^{cd}	11.34 ± 1.01^{a}	7.81 ± 0.54^{cd}	11.55 ± 0.99^{a}	8.11 ± 0.57^{bcd}
	MAP	8.11 ± 1.11^{d}	12.56 ± 0.88^{a}	10.51 ± 1.35^{abc}	10.10 ± 0.52^{bcd}	12.14 ± 0.57^{ab}	10.74 ± 0.51^{abc}	9.22 ± 0.56^{cd}	10.80 ± 0.85^{abc}	12.54 ± 1.11^{a}	11.40 ± 0.93^{ab}
	UV	8.50 ± 0.69^{cd}	9.94 ± 0.60^{b}	8.45 ± 0.61^{cd}	8.74 ± 0.20^{c}	7.48 ± 0.54^{d}	8.38 ± 0.07^{cd}	11.27 ± 0.69^{a}	7.60 ± 0.16^{cd}	11.34 ± 0.04^{a}	8.39 ± 0.63^{cd}
	MAP/UV	10.45 ± 0.35^{c}	12.19 ± 0.92^{b}	11.59 ± 0.53^{bc}	8.57 ± 0.43^{d}	11.49 ± 0.51^{bc}	11.26 ± 0.62^{bc}	12.45 ± 0.70^{b}	12.55 ± 0.75^{b}	14.42 ± 0.39^{a}	11.23 ± 0.90^{bc}

		Total color difference
$\Delta_{10\text{-}0}$€	AP	5.46 ± 0.72^{b}
	VP	4.15 ± 0.14^{c}
	MAP	6.79 ± 0.62^{a}
	UV	4.24 ± 0.30^{c}
	MAP/UV	6.81 ± 0.83^{a}

Results are expressed as mean ± standard deviation (n = 10). ^{a,b,c,d,e,f,g}Different letters in the same row within same treatment indicate significant differences ($p < 0.05$) among days of storage. ¥AP – air-packed tilapia fillets, VP – vacuum-packed tilapia fillets, MAP – MAP-packed tilapia fillets with 50% CO_2 and 50% N_2, UV – UV-C treated tilapia fillets at 0.30 J/cm², and MAP/UV – MAP-packed tilapia fillets with 50% CO_2 and 50% N_2 treated with UV-C at 0.30 J/cm². €ΔE10-0 - Total color difference between days 10 and 0 of refrigerated storage of each treatment. ^{a,b,c}Different letters in the column indicate significant differences ($p < 0.05$) among treatments.

Supplementary File S5. Results of hardness (Newton - N), chewiness (N × mm), cohesiveness (ratio), springiness (ratio) and resilience (ratio) in tilapia (*Oreochromis niloticus*) fillets non- and treated with ultraviolet radiation (UV-C) and modified atmosphere packaging (MAP) stored at 4 ± 1 °C for 10 days.

Parameters	Treatments$^{¥}$	Days of storage									
		1	2	3	4	5	6	7	8	9	10
Hardness	AP	22.69±2.93^{a}	23.07±2.51^{a}	21.17±2.40^{a}	12.23±1.46^{bc}	13.29±2.04^{bc}	15.07±2.43^{b}	9.10±0.96^{c}	12.10±0.62^{bc}	14.63±0.08^{b}	9.73±1.31^{bc}
	VP	16.37±0.66^{a}	16.17±0.67^{a}	15.60±0.35^{ab}	15.49±0.82^{ab}	15.52±0.46^{ab}	15.40±0.03^{ab}	14.06±0.40^{bc}	14.16±0.34^{bc}	13.32±0.75^{c}	13.15±0.82^{c}
	MAP	25.67±0.55^{a}	25.77±0.39^{a}	25.25±2.15^{a}	21.19±0.15^{b}	19.86±1.58^{bc}	16.99±0.43^{cd}	15.04±1.78^{d}	16.53±0.83^{d}	15.40±0.87^{d}	13.89±0.86^{d}
	UV	25.62±1.10^{a}	24.26±1.19^{ab}	23.63±1.48^{abc}	22.40±0.91^{abc}	20.69±1.05^{cd}	21.36±1.13^{bcd}	21.19±1.87^{bcd}	18.55±1.24^{de}	18.08±0.60^{de}	17.09±1.37^{e}
	MAP/UV	23.35±1.79^{ab}	22.81±1.29^{ab}	24.33±4.17^{ab}	25.60±1.41^{a}	24.84±1.64^{ab}	23.52±0.80^{ab}	22.30±1.27^{ab}	22.99±1.23^{ab}	22.33±2.19^{ab}	19.64±2.14^{b}
Chewiness	AP	7.54±0.81^{a}	5.75±0.50^{b}	6.10±0.30^{b}	3.82±0.49^{c}	2.53±0.07^{d}	2.67±0.27^{d}	2.34±0.20^{d}	3.19±0.26^{cd}	2.25±0.16^{d}	2.94±0.13^{cd}
	VP	5.20±0.34^{a}	4.62±0.69^{ab}	3.84±0.34^{bcde}	4.10±0.47^{bc}	2.96±0.03^{ef}	4.03±0.12^{bcd}	4.20±0.01^{b}	3.21±0.07^{cdef}	3.16±0.23^{def}	2.81±0.12^{f}
	MAP	7.07±0.50^{a}	7.32±0.91^{a}	7.12±0.84^{a}	6.34±0.48^{ab}	5.62±0.14^{b}	2.45±0.29^{c}	2.86±0.37^{c}	1.66±0.17^{c}	1.84±0.07^{c}	1.86±0.05^{c}
	UV	6.68±0.12^{ab}	7.04±0.13^{a}	7.51±0.44^{a}	6.96±0.60^{ab}	4.77±0.34^{d}	5.36±0.51^{cd}	6.00±0.37^{bc}	5.50±0.19^{cd}	3.72±0.31^{e}	2.87±0.25^{e}
	MAP/UV	8.54±0.84^{a}	7.88±0.26^{a}	8.49±0.41^{a}	6.06±0.28^{bc}	6.69±0.32^{b}	6.03±0.41^{bc}	5.19±0.49^{c}	5.41±0.24^{c}	5.04±0.24^{c}	3.01±0.16^{d}
Cohesiveness	AP	0.54±0.03^{a}	0.52±0.05^{a}	0.52±0.01^{a}	0.52±0.01^{a}	0.50±0.04^{a}	0.50±0.01^{a}	0.52±0.06^{a}	0.49±0.04^{a}	0.51±0.04^{a}	0.52±0.01^{a}
	VP	0.51±0.04^{a}	0.55±0.03^{a}	0.54±0.02^{a}	0.52±0.03^{a}	0.49±0.02^{a}	0.50±0.01^{a}	0.52±0.06^{a}	0.50±0.02^{a}	0.52±0.02^{a}	0.51±0.02^{a}
	MAP	0.49±0.02^{a}	0.51±0.02^{a}	0.50±.002^{a}	0.52±0.05^{a}	0.49±0.02^{a}	0.52±0.03^{a}	0.52±0.03^{a}	0.51±0.04^{a}	0.50±0.01^{a}	0.49±0.05^{a}
	UV	0.50±0.03^{a}	0.50±0.04^{a}	0.49±0.01^{a}	0.53±0.01^{a}	0.53±0.02^{a}	0.50±0.02^{a}	0.51±0.00^{a}	0.50±0.04^{a}	0.49±0.04^{a}	0.51±0.02^{a}
	MAP/UV	0.50±0.07^{a}	0.52±0.02^{a}	0.52±0.04^{a}	0.54±0.01^{a}	0.54±0.01^{a}	0.53±0.03^{a}	0.52±0.02^{a}	0.50±0.05^{a}	0.51±0.04^{a}	0.51±0.02^{a}
Springiness	AP	0.53±0.01^{a}	0.53±0.01^{a}	0.56±0.01^{a}	0.54±0.02^{a}	0.54±0.01^{a}	0.53±0.01^{a}	0.54±0.05^{a}	0.52±0.03^{a}	0.54±0.02^{a}	0.55±0.02^{a}
	VP	0.56±0.02^{a}	0.56±0.04^{a}	0.56±0.04^{a}	0.52±0.02^{a}	0.50±0.02^{a}	0.55±0.02^{a}	0.56±0.03^{a}	0.56±0.03^{a}	0.52±0.02^{a}	0.53±0.02^{a}
	MAP	0.53±0.04^{a}	0.51±0.08^{a}	0.56±0.03^{a}	0.54±0.01^{a}	0.55±0.03^{a}	0.54±0.02^{a}	0.52±0.05^{a}	0.53±0.02^{a}	0.53±0.02^{a}	0.53±0.01^{a}
	UV	0.52±0.02^{a}	0.51±0.02^{a}	0.54±0.02^{a}	0.54±0.01^{a}	0.53±0.01^{a}	0.54±0.03^{a}	0.52±0.01^{a}	0.53±0.01^{a}	0.51±0.01^{a}	0.54±0.01^{a}
	MAP/UV	0.57±0.03^{a}	0.57±0.01^{a}	0.56±0.03^{a}	0.52±0.03^{a}	0.58±0.00^{a}	0.52±0.06^{a}	0.53±0.01^{a}	0.52±0.03^{a}	0.51±0.02^{a}	0.53±0.03^{a}
Resilience	AP	0.14±0.01^{a}	0.14±0.01^{a}	0.14±0.01^{a}	0.14±0.01^{a}	0.15±0.01^{a}	0.15±0.01^{a}	0.16±0.01^{a}	0.15±0.01^{a}	0.15±0.01^{a}	0.15±0.01^{a}
	VP	0.14±0.01^{a}	0.14±0.01^{a}	0.14±0.01^{a}	0.14±0.01^{a}	0.15±0.01^{a}	0.15±0.01^{a}	0.15±0.01^{a}	0.16±0.01^{a}	0.16±0.02^{a}	0.14±0.01^{a}
	MAP	0.13±0.01^{a}	0.14±0.01^{a}	0.13±0.01^{a}	0.14±0.01^{a}	0.15±0.01^{a}	0.15±0.01^{a}	0.15±0.01^{a}	0.15±0.01^{a}	0.16±0.01^{a}	0.14±0.02^{a}
	UV	0.15±0.01^{a}	0.15±0.00^{a}	0.15±0.01^{a}	0.14±0.01^{a}	0.15±0.01^{a}	0.14±0.01^{a}	0.15±0.01^{a}	0.14±0.00^{a}	0.15±0.00^{a}	0.15±0.02^{a}
	MAP/UV	0.14±0.01^{a}	0.14±0.02^{a}	0.14±0.01^{a}	0.15±0.01^{a}	0.15±0.01^{a}	0.15±0.01^{a}	0.16±0.00^{a}	0.14±0.01^{a}	0.15±0.01^{a}	0.15±0.01^{a}

Results are expressed as mean ± standard deviation (n = 10). ^{a,b,c,d,e,f}Different letters in the same row within same treatment indicate significant differences ($p < 0.05$) among days of storage. $^{¥}$AP – air-packed tilapia fillets, VP – vacuum-packed tilapia fillets, MAP – MAP-packed tilapia fillets with 50% CO_2 and 50% N_2, UV – UV-C treated tilapia fillets at 0.30 J/cm^2, and MAP/UV – MAP-packed tilapia fillets with 50% CO_2 and 50% N_2 treated with UV-C at 0.30 J/cm^2.