

Supplementary Data

This supplementary data is a part of a paper entitled “Effect of Citric Acid Cross-Linking on the Functional and Mechanical Properties of Chitosan-Based Edible Films with *Aloe vera* Gel and Red Ginger Extract”.

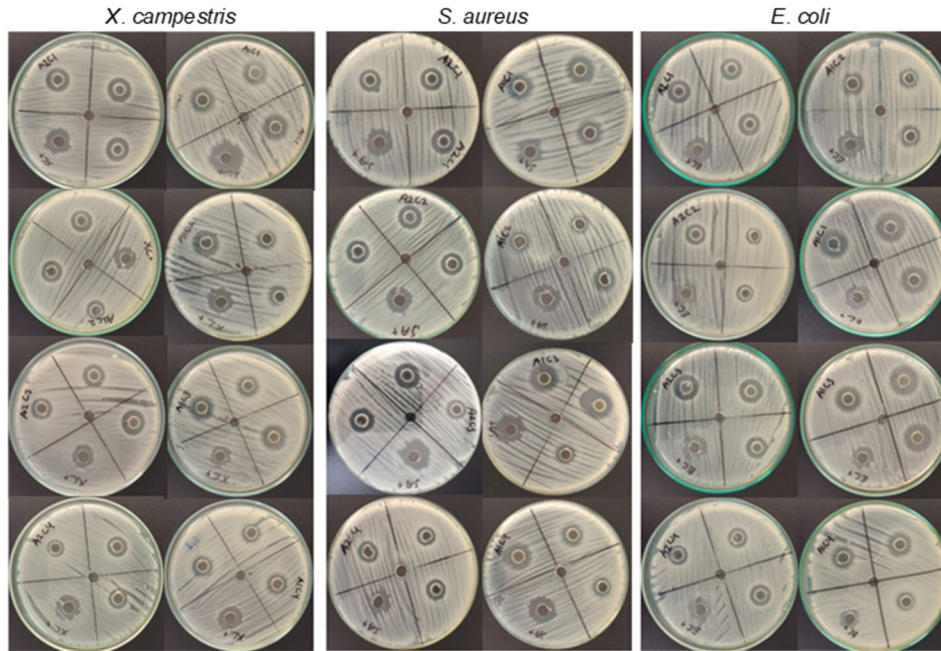


Fig S1. Representative images of antibacterial activity assay using the agar well diffusion method

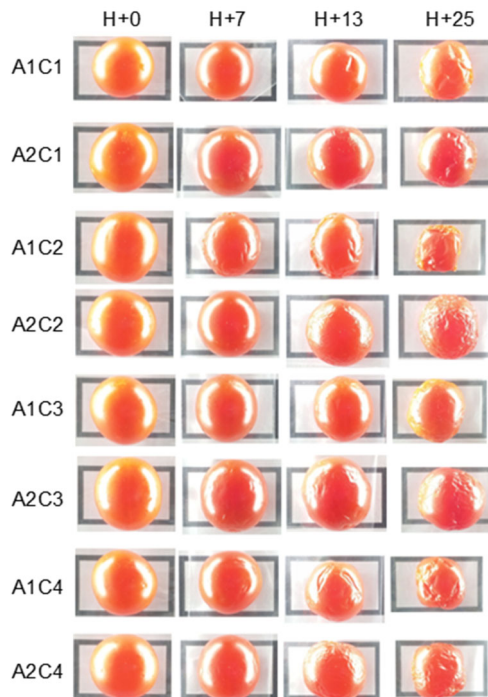


Fig S2. The appearance of cherry tomatoes coated with chitosan-based edible coatings. The physical appearance of cherry tomatoes changed as weight loss increased, leading to visible shrinking and deformation

Table S1. Mean \pm standard deviation of cherry tomato preservation parameters (weight loss, vitamin C content, and sensory evaluation)

Treatment	Parameter					
	Weight loss (%)	Vitamin C (mg/100 g)	Sensory evaluation (Color)	Sensory evaluation (Aroma)	Sensory evaluation (Freshness)	Sensory evaluation (General)
A1C1	6.11 \pm 0.10 f	8.17 \pm 0.10 b	4.133 \pm 0.681 b	3.800 \pm 0.847 a	3.767 \pm 1.165 a	3.833 \pm 1.085 a
A1C2	5.64 \pm 0.10 de	9.13 \pm 0.10 e	3.767 \pm 0.898 a	3.933 \pm 0.691 a	3.433 \pm 1.194 a	3.267 \pm 1.230 a
A1C3	4.89 \pm 0.10 a	(1.31 \pm 0.10) $\times 10^1$ g	4.033 \pm 0.669 b	3.933 \pm 0.828 a	3.567 \pm 1.251 a	3.500 \pm 1.137 a
A1C4	6.70 \pm 0.10 g	(1.38 \pm 0.10) $\times 10^1$ h	4.033 \pm 0.718 b	3.600 \pm 0.770 a	3.700 \pm 0.877 a	3.167 \pm 1.085 a
A2C1	5.29 \pm 0.10 bc	7.46 \pm 0.10 a	3.833 \pm 0.950 ab	3.633 \pm 0.999 a	3.700 \pm 1.149 a	3.600 \pm 1.070 a
A2C2	6.22 \pm 0.10 fg	8.76 \pm 0.10 d	3.900 \pm 0.845 ab	3.700 \pm 0.837 a	3.367 \pm 1.098 a	3.400 \pm 1.221 a
A2C3	5.27 \pm 0.10 b	(1.12 \pm 0.10) $\times 10^1$ f	3.967 \pm 0.669 ab	3.467 \pm 0.937 a	3.533 \pm 1.167 a	3.333 \pm 1.241 a
A2C4	5.62 \pm 0.10 d	8.47 \pm 0.10 c	3.533 \pm 1.008 a	3.467 \pm 0.973 a	3.633 \pm 1.217 a	3.533 \pm 1.106 a

Different letters (a-h) indicate significant differences among treatments ($p \leq 0.05$)

Table S2. Mean \pm standard deviation of chitosan-based edible film, coating, and film-forming solution properties (thickness, water vapor transmission rate, mechanical, antioxidant, and antimicrobial)

Treatment	Parameter							
	Thickness (mm)	WVTR ($\text{g m}^{-2} \text{h}^{-1}$)	Tensile strength (MPa)	Elongation (%)	Antioxidant ($\mu\text{mol TE g}^{-1}$)	Antimicrobial <i>X. campestris</i> (mm)	Antimicrobial <i>E. coli</i> (mm)	Antimicrobial <i>S. aureus</i> (mm)
A1C1	(3.00 \pm 0.00) $\times 10^{-2}$ b	(2.174 \pm 0.0018) $\times 10^{-3}$ h	(7.41 \pm 0.10) $\times 10^1$ h	(2.22 \pm 0.10) $\times 10^1$ c	(7.22 \pm 0.10) $\times 10^{-2}$ a	7.653 \pm 0.273 a	10.720 \pm 0.812 d	6.562 \pm 1.557 ab
A1C2	(2.00 \pm 0.00) $\times 10^{-2}$ a	(1.889 \pm 0.0046) $\times 10^{-3}$ g	(1.02 \pm 0.10) $\times 10^1$ c	0.000 \pm 0.000 a	(2.76 \pm 0.68) $\times 10^{-1}$ ab	6.238 \pm 2.925 a	5.835 \pm 0.771 ab	6.335 \pm 3.308 ab
A1C3	(4.00 \pm 0.00) $\times 10^{-2}$ d	(1.564 \pm 0.0125) $\times 10^{-3}$ f	(3.66 \pm 0.10) $\times 10^1$ g	2.03 \pm 0.10 b	4.42 \pm 0.08 h	7.672 \pm 1.003 a	10.860 \pm 1.550 d	8.398 \pm 2.897 b
A1C4	(3.00 \pm 0.00) $\times 10^{-2}$ bc	(1.336 \pm 0.0115) $\times 10^{-3}$ e	(1.77 \pm 0.10) $\times 10^1$ f	0.000 \pm 0.000 a	3.66 \pm 0.17 g	5.713 \pm 0.833 a	6.352 \pm 1.688 abc	7.300 \pm 2.685 ab
A2C1	(5.00 \pm 0.00) $\times 10^{-2}$ g	(1.417 \pm 0.0059) $\times 10^{-4}$ a	9.15 \pm 0.10 b	(3.93 \pm 0.30) $\times 10^1$ d	1.05 \pm 0.32 cd	7.953 \pm 0.695 a	7.710 \pm 0.392 bc	6.825 \pm 1.021 ab
A2C2	(4.00 \pm 0.00) $\times 10^{-2}$ de	(2.540 \pm 0.0031) $\times 10^{-4}$ c	8.34 \pm 0.10 a	(5.19 \pm 0.32) $\times 10^1$ f	(7.21 \pm 0.05) $\times 10^{-1}$ c	5.990 \pm 0.979 a	4.552 \pm 1.461 a	6.555 \pm 0.582 ab
A2C3	(5.67 \pm 0.58) $\times 10^{-2}$ h	(1.522 \pm 0.0055) $\times 10^{-4}$ ab	(1.16 \pm 0.10) $\times 10^1$ e	(5.01 \pm 0.43) $\times 10^1$ e	2.82 \pm 0.52 f	6.960 \pm 1.017 a	8.090 \pm 1.376 c	7.087 \pm 1.623 ab
A2C4	(4.33 \pm 0.58) $\times 10^{-2}$ def	(3.073 \pm 0.0037) $\times 10^{-4}$ d	(1.08 \pm 0.10) $\times 10^1$ d	(6.62 \pm 0.40) $\times 10^1$ g	1.77 \pm 0.20 e	6.587 \pm 1.849 a	5.263 \pm 0.718 a	4.803 \pm 0.003 a

Different letters (a-h) indicate significant differences among treatments ($p \leq 0.05$)