

Chitosan/PVA/Gelatin Derived Biodegradable Coatings Enriched with *Rosa rubiginosa* for Extended Shelf Life and Preservation of Strawberries

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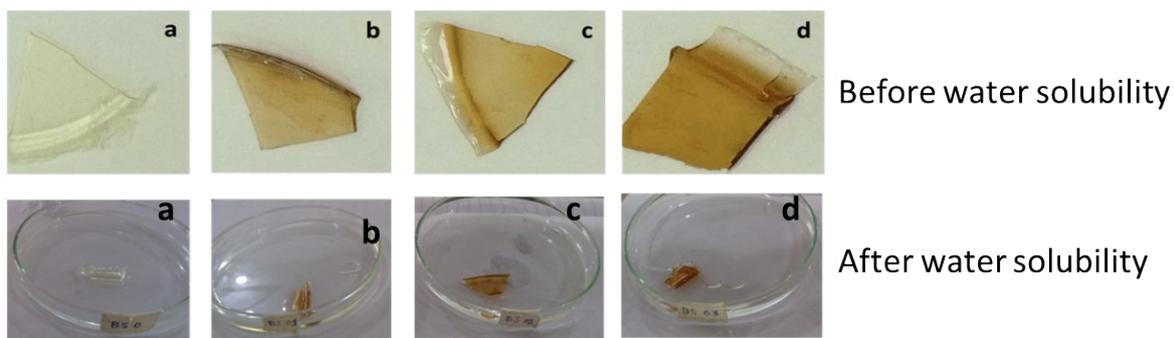


Figure S1: Visual observation of the solubility of composite films (a) BS-0 (b) BS-01 (c) BS-02 and (d) BS-03



Figure S2: Image while taking thickness measurement of BS-02 film

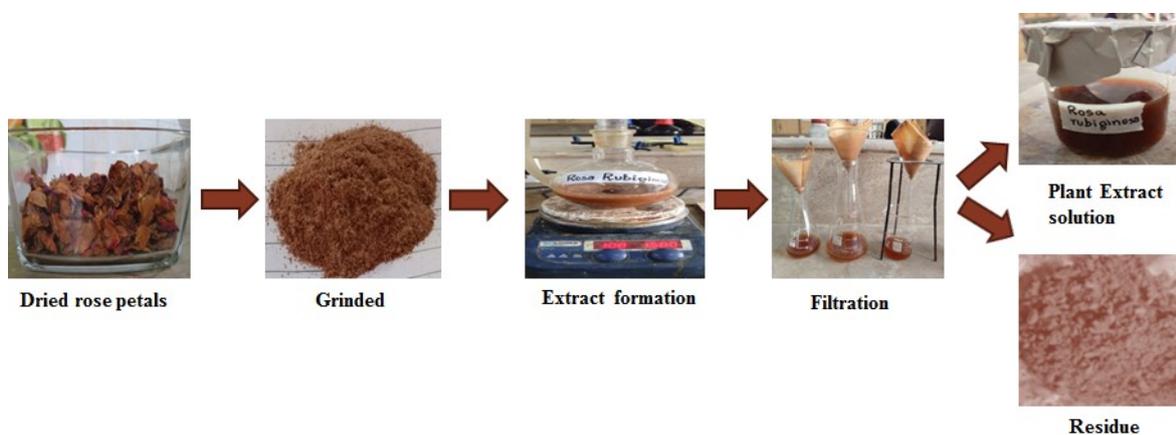


Figure S3: Preparation of *Rosa rubiginosa* plant extract

Table S1: Comparison of previously fabricated coatings/films or commercial films with recently synthesized coatings/films

Type of polymers used	Additional components	Major Properties of materials	Gap identified	Reference
Gelatin/CS	Silver nanoparticles combined with Zeolitic imidazolate framework-8 and carboxymethyl cellulose	Excellent Antibacterial, improved shelf life of strawberries for 5 days	Antioxidant and oxygen barrier properties were not evaluated, and our synthesized coatings protected strawberries till 10 days	1
Gelatin/PVA	Citric acid as crosslinker and Magnolol as antibacterial and antioxidant	Antibacterial, antioxidant, biodegradable, mechanically good, improved shelf life of cherries up to 8 days	our synthesized coatings protected strawberries till 10 days	2
CS/gelatin/PV A	Ti ₃ C ₂ MXene as nanofiller	Antibacterial, antioxidant, good mechanical and thermal strength, barrier and water resistance	Application on fruits preservation was not evaluated.	3

properties, good for
cooked meat products

Gelatin/CS

Vanillin and
Zn²⁺ ions

Improved mechanical,
UV blocking, water
resistance, antibacterial
activity and reduced
oxygen transmission,
Preserved strawberries
at 4 °C for 15 days

our synthesized
coatings protected
strawberries till
10 days at
elevated room
temperature

4

Table S2. Sensory evaluation for BS-0 coating

Parameter	strongly dislike	strongly dislike	mild dislike	mildly unfavourable	It's neither good nor bad.	like somewhat	similar to moderate	greatly admire	especially like
Taste	1	2	3	4	5	6	7	8	9
Smell	1	2	3	4	5	6	7	8	9
Color	1	2	3	4	5	6	7	8	9
juiciness	1	2	3	4	5	6	7	8	9
Firmness	1	2	3	4	5	6	7	8	9
Acceptability in general	1	2	3	4	5	6	7	8	9

Table S3. Sensory evaluation for BS-01 coating

Parameter	strongly dislike	strongly dislike	mild dislike	mildly unfavourable	It's neither good nor	like somewhat	similar to moderate	greatly admire	especially like
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					bad.				
Taste	1	2	3	4	5	6	7	8	9
Smell	1	2	3	4	5	6	7	8	9
Color	1	2	3	4	5	6	7	8	9
Juiciness	1	2	3	4	5	6	7	8	9
Firmness	1	2	3	4	5	6	7	8	9
Acceptability in general	1	2	3	4	5	6	7	8	9

Table S4. Sensory evaluation for BS-02 coating

Parameter	strongly dislike	strongly dislike	mild dislike	mildly unfavourable	It's neither good nor bad.	like somewhat	similar to moderate	greatly admire	especially like
Taste	1	2	3	4	5	6	7	8	9
Smell	1	2	3	4	5	6	7	8	9
Color	1	2	3	4	5	6	7	8	9
juiciness	1	2	3	4	5	6	7	8	9
Firmness	1	2	3	4	5	6	7	8	9
Acceptability in general	1	2	3	4	5	6	7	8	9

Table S5. Sensory evaluation for BS-03 coating

Parameter	strongly dislike	strongly dislike	mild dislike	mildly unfavourable	It's neither good nor bad.	like somewhat	similar to moderate	greatly admire	especially like
Taste	1	2	3	4	5	6	7	8	9
Smell	1	2	3	4	5	6	7	8	9
Color	1	2	3	4	5	6	7	8	9
juiciness	1	2	3	4	5	6	7	8	9
Firmness	1	2	3	4	5	6	7	8	9
Acceptability in general	1	2	3	4	5	6	7	8	9

Table S6. Sensory evaluation results without any coating

Parameter	strongly dislike	strongly dislike	mild dislike	mildly unfavourable	It's neither good nor bad.	like somewhat	similar to moderate	greatly admire	especially like
Taste	1	2	3	4	5	6	7	8	9
Smell	1	2	3	4	5	6	7	8	9
Color	1	2	3	4	5	6	7	8	9
juiciness	1	2	3	4	5	6	7	8	9
Firmness	1	2	3	4	5	6	7	8	9
Acceptability in general	1	2	3	4	5	6	7	8	9

References

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