

**Supplementary Table S1. Film Optimization Results for Pongamia pinnata Extract**

<b>Extract Concentration (% v/v)</b>	<b>Visual Appearance</b>	<b>Film Integrity</b>	<b>Tensile Strength (MPa)</b>	<b>Notes</b>
<b>1%</b>	Transparent, slightly pale	Fragile, incomplete film	$1.05 \pm 0.06$	Low extract insufficient for film network reinforcement
<b>3%</b>	Transparent	Moderate - slightly brittle	$1.78 \pm 0.05$	Improved but still weak cohesion
<b>5%</b>	Uniform, flexible	Good - smooth, continuous	<b><math>2.47 \pm 0.08</math></b>	Optimal concentration
<b>7%</b>	Dark, slightly opaque	Brittle, surface cracks	$1.39 \pm 0.07$	High extract interferes with polymer interactions

**Supplementary Table S2. Film Optimization Results for Psidium guajava Extract**

<b>Extract Concentration (% v/v)</b>	<b>Visual Appearance</b>	<b>Film Integrity</b>	<b>Tensile Strength (MPa)</b>	<b>Notes</b>
<b>1%</b>	Very transparent	Weak, fragile	$1.12 \pm 0.05$	Poor structural cohesion
<b>3%</b>	Light yellow tint	Moderate	$1.86 \pm 0.06$	Better film formation
<b>5%</b>	Slight yellow, uniform	Good - flexible, cohesive	<b><math>2.57 \pm 0.09</math></b>	Selected for final formulation
<b>7%</b>	Dark yellow, opaque	Brittle, uneven	$1.45 \pm 0.08$	Excess extract disrupts matrix