

<b>Title (1)</b>	:	Development of sodium alginate-pectin biodegradable active food packaging film containing cinnamic acid
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<b>Abstract</b>	:	<p>Plastics are still the most popular food packaging material and many of them end up in the environment for a long period. Due to packaging material's inability to inhibit microbial growth, beef often contains microorganisms that affect its aroma, colour and texture. Cinnamic acid is categorized as generally recognised as safe and is permitted for use in food. The development of biodegradable food packaging film with cinnamic acid has never been conducted before. This present study was aimed to develop a biodegradable active packaging material for fresh beef using sodium alginate and pectin. The film was successfully developed with solution casting method. The films' thickness, colour, moisture level, dissolution, water vapour permeability, bending strength and elongation at break were comparable to those of polyethylene plastic film in terms of these attributes. The developed film also showed the degradability in soil of 43.26% in a duration of 15 days. Fourier Transform Infrared (FTIR) spectra showed that cinnamic acid was successfully incorporated with the film. The developed film showed significant inhibitory activity on all test foodborne bacteria. On Hohenstein challenge test, a 51.28–70.45% reduction on bacterial growth was also observed. The antibacterial efficacy of the established film by using fresh beef as food model. The meats wrapped with the film showed significant reduction in bacterial load throughout the experimental period by 84.09%. The colour of the beef also showed significant different between control film and edible film during 5 days test. Beef with control film turned into dark brownish and beef with cinnamic acid turn into light brownish. Sodium alginate and pectin film with cinnamic acid showed good biodegradability and antibacterial activity. Further studies can be conducted to investigate the scalability and commercial viability of this environmental-friendly food packaging materials.</p>