Modernize Packaging Mimic from Pill Millipede Integrated with Honeycomb

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Nowadays, plastic bag is used widely due to its low cost and lightweight, even though it isn’t environmental friendly. So, there are campaigns to replace a plastic bag with biomaterial packaging. From these reasons, our project aimed to produce degradable packaging having high protection property. Our inspiration came from the pill millipede behavior. When it rolls into the tight ball, it can cover the structure completely closed and not overlap. We are also interested in a six-sided polygon shape of a honeycomb which can reduce the impact load. In our design, we studied the shape of our packaging for 3 patterns and found that the best design was pyramid shape. We also found that a honeycomb shape can support the pressure. And the best material was Lepironia articulate because it had porous sponge structure and strong fiber that could resist shock loading. From material testing, our packaging could be shockproof and extend shelf-life of fruits and eggs better than a plastic bag. From the market test in a local convenient store, customers selected our packaging more than plastic bag 32%. Our packaging, PH Mimic Pack, weighed 68.13 g. and could bear 2 kg products such as fruits, eggs, cosmetic, etc.. It costs only 95 cents and can be used at least two years.

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