



AllinAll Research Edible Coatings for Fruit (Bananas).

OBJECTIVE:

- To improve the product quality, shelf life, visual appearance by prevention of stale appearance and brown spotting in singles bananas.

INTRODUCTION:

One possible solution to **preventing food waste** and promotion of a **more sustainable future**; is the application of edible coatings. Globally, 1.3 billion Tonnes of the food produced is lost or wasted. Fruits and vegetables fall into the highest category of food waste compared to any other foods, accounting for 45% of food losses (FAO, 2019). Bananas are one the most commonly consumed fruits globally. Single bananas are sold across retails as ready-to-go convenience foods. However, single bananas are more prone to moisture loss at the neck of bananas compared to bunches and are susceptible to discolouration, stale appearance and brown spotting. AllinAll have addressed this by developing natural edible coating ingredient solution for the fruit distribution sector. The coating can be consumed along with the fruit and enhances the nutritional value due to its composition of starches, sugars and hydrocolloids. The edible coating improves the freshness and quality of fruit via prolonging shelf life; prevents discolouration, improves texture/firmness, reduces weight loss, provides a barrier to oxygen and microbial growth, serves as a protection, and eliminates the need for plastic packaging thereby reducing food waste thus contributing to a more sustainable future.

METHODOLOGY:

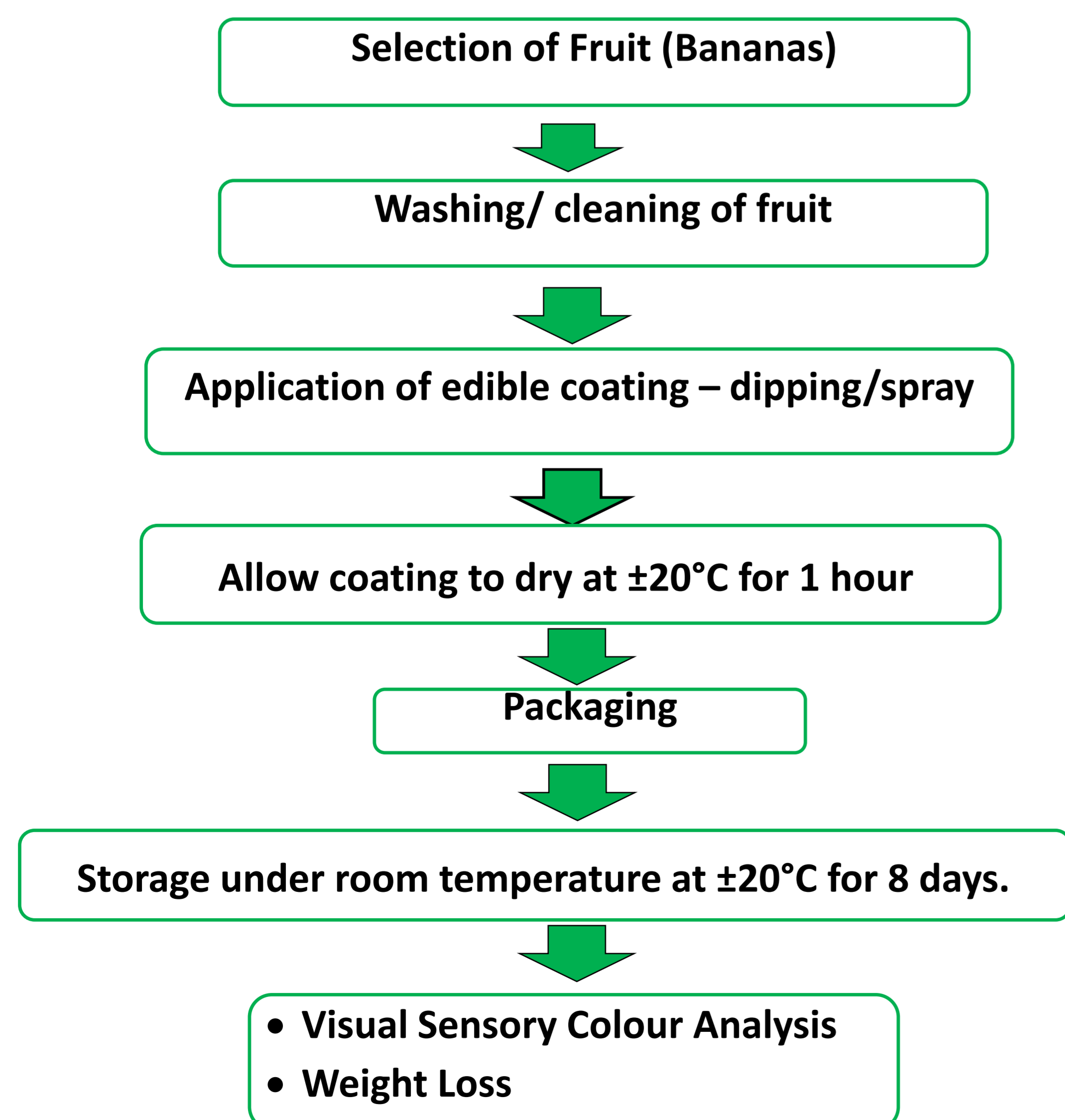


Fig 1. Flow chart of edible coating process

RESULTS AND DISCUSSION:

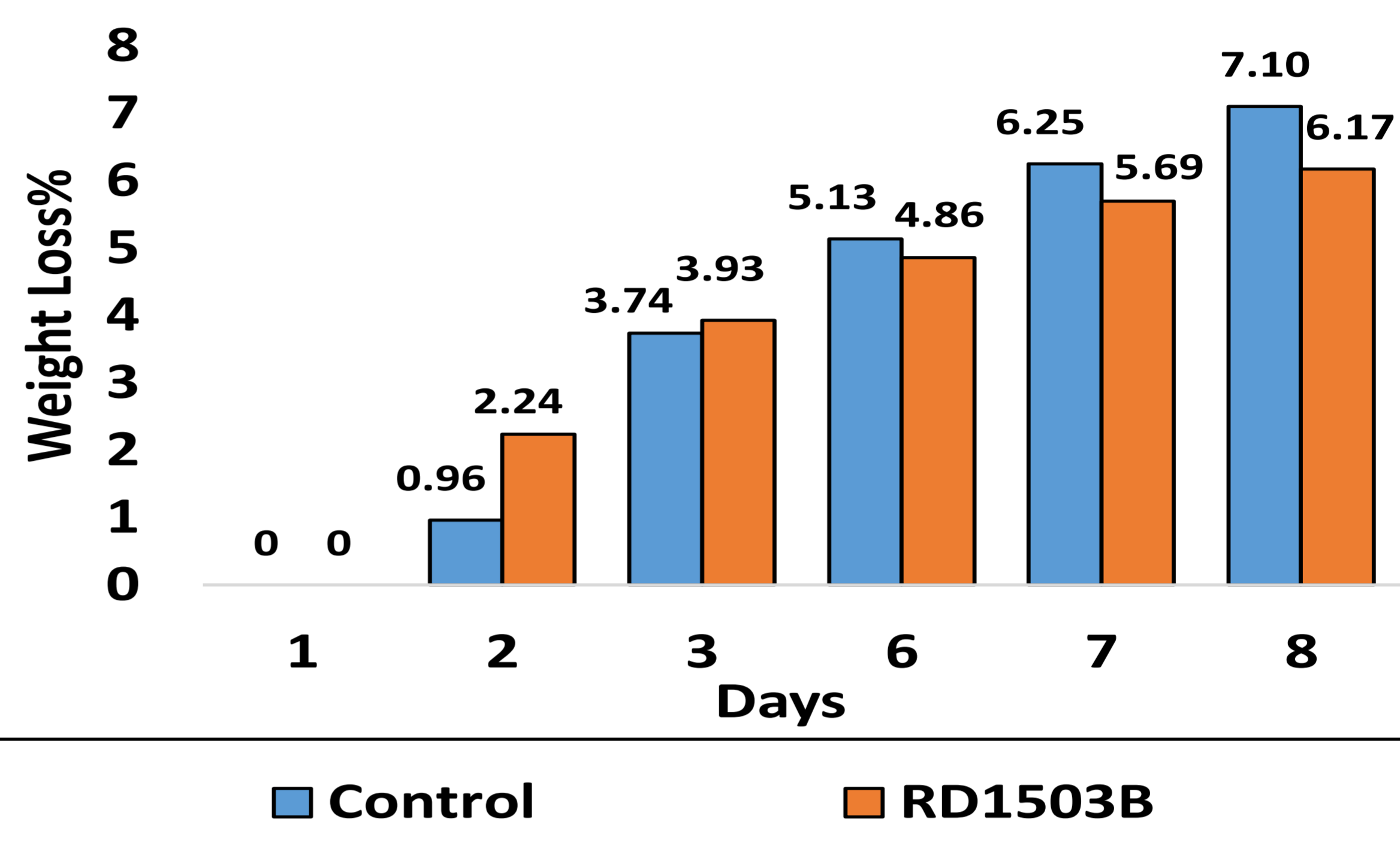


Fig 2. Weight loss over 8 days display stored at room temperature ($\pm 20^{\circ}\text{C}$).



Fig 3. Visual appearance of control vs RD1503B (AllinAll's edible coating) after 6 days display stored at room temperature ($\pm 20^{\circ}\text{C}$).

CONCLUSION & USP'S:

- ✓ The coating improved the freshness and quality of fruit via prolonging shelf, prevents discolouration, improving texture/firmness, reduces weight loss, serves as a protection thereby reducing food waste and contributes to a more sustainable future.
- ✓ The coating creates an anaerobic environment which retards the gas diffusion rate and acts a barrier to oxygen CO_2 , moisture and water vapour.
- ✓ The edible coating can reduce the need for plastic packaging required i.e MAP systems to control the gas mass transfer rate thus contributing further towards a sustainable future.
- ✓ The coating can be consumed along with the fruit and enhances the nutritional value due to its composition of starches, sugars and hydrocolloids.
- ✓ The coating is chemical free, odourless, colourless, does not impart the flavour of the fruit and can be sprayed or dipped onto fruit.
- ✓ AllinAll is currently expanding its range which will deliver these benefits to other fruits and vegetables including; avocado's, citrus and blueberries thereby playing a part in delivering a more sustainable future.