

# Apples and Wax

Apples produce a natural wax to protect their high water content. If you polish an apple taken directly from a tree, you will notice it transforms quickly from a dull, washed out colour to a shiny skin. You polish the natural wax.

Without wax, fruits and vegetables like apples would lose their vital crispness and moisture through normal respiration and transpiration - eventually leaving them soft and dry and not nice to eat.

The wax coating can reduce moisture loss by 30 to 50 percent, enough to delay shrivelling for a significant time.

After harvest, apples are washed and brushed to remove leaves and field dirt before they are packed in cartons for transport to markets. This cleaning process removes the fruit's original wax coating, so to protect the fruit, apple packers re-apply a commercial grade wax. One kilogram of wax may cover more than 300,000 pieces of fruit; perhaps two drops is the most wax covering each apple.

Waxes also enhance the appearance of apples by adding a pleasant lustre to the surface of the fruit.

Waxes have been used on fruits and vegetables since the 1920s. They are all made from natural ingredients, and are certified by Food and Drug Administrations around the world to be safe to eat. They come from natural sources including carnauba wax, from the leaves of a Brazilian palm; candellia wax, derived from reed-like desert plants of the genus Euphorbia; and food-grade shellac, which comes from a secretion of the lac bug found in India and Pakistan. These waxes are also approved for use as food additives for sweets such as chocolate bars, and pastries.

Carnauba wax is most commonly used in Australia. While shellac-based waxes will give the best shine, they do not tolerate high humidity in cool store, in transit or at retail level as well as others. When apples move from cool temperatures to high temperatures under high humidity conditions, they 'sweat' and the wax can 'chalk' or discolour as a consequence. Chalking can also occur because of loose packing and rough handling.

The commercial waxes do not easily wash off because they adhere to any natural wax remaining on the fruit after cleaning. Waxed produce can be scrubbed with a vegetable brush briefly in lukewarm water and rinsed before eating to remove wax and surface dirt. (Using detergents on porous foods like apples is not recommended!)

