



## Fresh Facts for Industry: Protective Coatings

Protective edible coatings and waxes are applied to fruits and vegetables as part of the post-harvest treatment of fresh fruits and vegetables as a method of preservation. Protective coatings have been in use since the 12th Century in China. However it was not until 1922 that the waxing of produce was invented and the first commercial application of edible coatings were applied to product.

Fresh fruits and vegetables that may be coated with protective coatings include:

- Apples
- Avocados
- Cherries
- Grapefruit
- Lemons
- Limes
- Melons
- Nectarines
- Oranges
- Passion Fruit
- Lychee Fruit
- Peaches
- Pears
- Pineapple
- Bell Peppers
- Field Cucumbers
- Eggplants
- Parsnips
- Pumpkins
- Rutabagas
- Squash
- Sweet potatoes
- Tomatoes
- Turnips

### Why is it Important?

As fruits and vegetables grow they develop a natural coating called a *cuticle* which is like a waxy layer. Once produce is harvested, it is sent to a packing house where it is often washed, a process which removes the cuticle. To replace this cuticle a protective coating is applied to the produce.

Protective edible coatings help to slow dehydration and decay while retaining moisture and increasing shelf life; they may also improve appearance by offering an attractive sheen.

### What You Need to Know?

There are numerous types of protective coatings that can be used on fresh fruits and vegetables. In Canada components of fruit and vegetable coatings are not regulated as food additives (with the exceptions of mineral oil, paraffin wax and petrolatum which are regulated as food additives under the *Food & Drug Act and Regulations*; the regulations set the limits for the quantity of these protective coatings that can be used). In the U.S there may be some wax and coating products that are generally recognized as safe (GRAS) for use on food, however these products must comply with Canadian regulations and be acceptable for use in Canada.

Waxes are indigestible and will pass through the body without breaking down or being absorbed. If you choose not to eat a protective coating, even though it is safe to do so, buy un-waxed produce or peel the fruit or vegetable. Wax is not water-soluble and does not wash off. Waxes may turn white on the surface of produce if they have been subjected to excessive heat and/or moisture. This affects only the appearance of the produce; it does not affect the quality or food safety.

Priority allergens are a consideration when using protective coatings. In a letter to [Canadian Food Distributors, Packers, Importers and Wholesalers](#) originally issued in 2005, the CFIA reminded the industry to be aware of the most common [food allergens](#), and that these items and any proteins derived from them **should not be used** as components in protective edible coatings. Under the *Food and Drugs Act* coatings manufacturers and producers have an obligation to ensure their products will not pose health hazards to consumers. Information on the composition of these products may be submitted voluntarily to Health Canada for review.

Amendments to the *Food and Drug Regulations* prescribing enhanced labelling requirements for food allergen, gluten sources and sulphites were published in the *Canada Gazette*, Part II on February 16, 2011. **The new food allergen labelling regulations came into force on August 4, 2012.**

The revised regulations will require that manufacturers clearly identify food allergens\*, gluten sources\*\*, and sulphites above 10 ppm either in the list of ingredients or at the end of the list of ingredients with the following statement "Contains: . . . ". The regulations will also require that manufacturers list any exempted components of ingredients if they contain food allergens, gluten sources, or sulphites. All previous requirements for component and sulphite declaration stand.

If a food allergen or gluten is present as a result of the use of a wax coating compound or its components in a prepackaged fresh fruit or vegetable that requires a label, the food allergen or gluten source must be shown on the label of the product either in the list of ingredients or in the "Contains" statement. These requirements would not apply to prepackaged fresh fruits or vegetables that are packaged in a wrapper or confining band of less than ½ inch in width, since these products are exempt from carrying a label pursuant to subparagraph B.01.003(1)(a)(ii).

The regulatory amendments enhance the labelling of **prepackaged products**. They do this by requiring mandatory declaration of the sources of common food allergens and gluten when they are present in a prepackaged product. They also require the declaration of added sulphites if they are present in a prepackaged product in a total amount of 10 parts per million (ppm) or more (all previous requirements for declaring sulfites as components that require declaration stand). These declarations will be required to appear on the label of the product:

- using names as prescribed in the new regulations
- either in the list of ingredients or in a statement that begins with the word "Contains".

In addition, the common names for starches, modified starches, hydrolyzed plant protein and lecithin must be shown to provide information regarding the source from which these ingredients are derived (for example, wheat starch).

\*In Canada, the ten (10) priority food allergens are peanuts, tree nuts (includes almonds, Brazil nuts, cashews, hazelnuts, macadamia nuts, pecans, pine nuts, pistachios or walnuts), sesame seeds, milk, eggs, fish (including crustaceans and shellfish), soy, wheat and triticale, mustard seeds and sulphites.

\*\* Gluten sources will need to be declared when a food contains gluten protein, modified gluten protein, or gluten protein fractions from barley, oats, rye, triticale or wheat (or a hybridized strain of any of these cereals)

### Other Resources

- *A Tool for Managing Allergen Risk in Food Products* <http://www.inspection.gc.ca/english/fssa/invenq/inform/toualle.shtml>
- *Undeclared Allergens and Acceptability of Post Harvest Protective Coating Treatments* <http://www.inspection.gc.ca/english/fssa/frefra/safsal/nonallergene.shtml>
- Food Allergies <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/food-aliment/allerg-eng.php>
- *Health Canada's Food Allergen Labelling* <http://www.hc-sc.gc.ca/fn-an/label-etiquet/allergen/index-eng.php>
- *Revised Labelling Regulations for Food Allergens, Gluten Sources and Sulphites (Amendments to the Food and Drug Regulations)* <http://www.inspection.gc.ca/english/fssa/labeti/allerg/20110216inde.shtml>
- *Canada Gazette > Part II: Official Regulations > 2011-02-16 Regulations Amending the Food and Drug Regulations (1220 — Enhanced Labelling for Food Allergen and Gluten Sources and Added Sulphites)* <http://www.gazette.gc.ca/rp-pr/p2/2011/2011-02-16/html/sor-dors28-eng.html>