

FRESH FRUITS COATINGS AND FOOD ADDITIVES POSITION PAPER

As The POSTHARVEST CLUSTER, grouping the main companies operating in the postharvest coating and treatment industry for fresh fruits on the European Union market, we would like to provide our point of view on the use of food additives in fresh fruits coatings as glazing or surface agents.

On the EU market only approved food additives according to Regulation 1333/2008 can be included in coatings or preservative formulations applied on fresh fruits and this happens only if a food additive meets the following conditions:

- (a) it does not, on the basis of the scientific evidence available, pose a safety concern to the health of the consumer at the level of use proposed.
- (b) there is a reasonable technological need that cannot be achieved by other economically and technologically practicable means; and
- (c) its use does not mislead the consumer.

Fresh fruits coatings industry includes on their formulations approved food additives.

→ Regarding condition (a) it does not, on the basis of the scientific evidence available, pose a safety concern to the health of the consumer at the level of use proposed.

The safety of all food additives that are currently authorised is assessed by the European Food Safety Authority (EFSA). Only additives for which the proposed uses were considered safe are on the EU list. Moreover, all food additives go through a re-evaluation periodic process.

So, all food additives approved for use on fresh fruit are safe for the consumers.

→ Regarding condition (b) there is a reasonable technological need that cannot be achieved by other economically and technologically practicable means

Most of the food additives approved on the EU for the food category *04.1.1 Entire fresh fruit and vegetables* are approved for the surface treatment of fruit (see Annex).

Surface treatment agents are defined as substances which, when applied to the external surface of a foodstuff, provide a protective coating.

Coatings, as postharvest treatment, are applied on the external surface of the fresh fruits to increase their postharvest life by regulating the exchange of water and gases (oxygen and carbon dioxide). This primary function allows for less weight loss during

storage and, in many cases, the alleviation of some postharvest physiological disorders such as chilling injury or rind breakdown that can be the cause of important food losses.

Thickness of the coating on the fresh fruit external surface is on the micro range.

Technical benefits of fresh fruit coatings have been scientifically demonstrated and established during last decades, since the 50s, and it is fully accepted that they deliver very relevant and positive technological functionalities than can be summarised as follows:

- i. reducing permeability to water loss
- ii. creation of a modified atmosphere for coated fresh produce and delay on ripening
- iii. retardation of weight loss and surface dehydration
- iv. maintaining original structural integrity
- v. replacing/recovering of the surface natural wax lost during cleaning and sanitation after harvest.
- vi. reducing decay

Whether we talk about fresh fruit with edible or not edible peel, postharvest coatings play a relevant role to increase shelf life of the fresh fruits, as for example on citrus fruits, since this type of fruits are very prone to decay due to physiological disorders when no postharvest treatments are applied.

It is clear that above technological functionalities lead to preserve the nutritional quality of the fresh fruits and to aid in the transport or storage enhancing the keeping quality or stability of the fresh fruits, both conditions to be included in the EU list of approved food additives (advantages and benefits for the consumer).

Last but not least and additionally to the above explained technological need of the use of specific food additives on the fresh fruit coatings industry, the increase obtained on the shelf-life of the fresh fruits contributes directly to reduce food losses along the food supply chain, being this contribution perfectly aligned with the aim of the FAO, UNECE initiatives for reducing food losses and waste (UNECE. Code of Good Practice - Reducing food loss in handling fruit and vegetables.) and the Sustainable Development Goals 12 of the United Nations:

Goal 12: Responsible Consumption and Production

United Nations Sustainability Goal 12.3 on reducing food loss and waste:

"By 2030, halve per capita global food waste at the retail and consumer level and reduce food losses along production and supply chains, including post-harvest losses."

→ **Regarding condition (c) its use does not mislead the consumer.**

When EFSA estimates the possible exposure to a food additive, it considers the maximum level requested to be added in the different foodstuffs. In addition, EFSA assumes that the largest quantities of these foodstuffs are eaten on a daily basis.

The presence of food additives should therefore be considered safe even for consumers that eat large quantities of foodstuffs to which the additives have been used at the maximum permitted level.

Having said that in the sense that the safety of the consumer is assured by the EU approval process itself, EU marketing standards regulations establish that for oranges, mandarins and lemons, any preserving agent or other chemical substances used at postharvest stage must be mentioned on the label. No other fresh fruit has this requirement.

This means that in the case of most of citrus, consumers are informed about any preserving agent or other chemical substances used at postharvest. Maybe a similar approach could be taken for other fresh fruits.

In conclusion, The POSTHARVEST CLUSTER and its members would like to remark and support that approved food additives used on fresh fruits coatings are fully safe for the consumers and also are needed to preserve the quality of the fresh fruits increasing their shelf life and reducing at the same time their losses and waste along the supply chain.

Thank you for your attention.

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POSTHARVEST CLUSTER (formerly known as AGRUPOST "Agrupación Española de Servicios y Procesos Postcosecha") groups the main companies operating in the postharvest coating and treatment industry for fresh fruits on the European Union market. Delivering protective fruit coating formulations and sustainable processes and technologies are the main activities of the POSTHARVEST CLUSTER members companies (Cía Ibca, Brogdex, S.A., Productos CITROSOL, S.A., DECCO IBERICA Post Cosecha, S.A.U., FOMESA Fruitech, S.L.U. and AGROFRESH Fruit Protection, S.A.). Increasing shelf life of fresh fruit contributes to reduce food losses and waste.

Annex (EU Regulation 1333/2008)

Category number	E-number	Name	Maximum level (mg/l or mg/kg as appropriate)	Footnotes	Restrictions/exceptions
04.1.1	Entire fresh fruit and vegetables				
	E 172	Iron oxides and hydroxides	6		only as a contrast enhancer for marking citrus fruit, melons and pomegranates in order to: — repeat all or some of the mandatory information particulars required by the Union legislation and/or national law, and/or — provide on a voluntary basis brand name, production method, PLU-code, QR-code and/or barcode Period of application: From 24 June 2013.
	E 200-202	Sorbic acid – potassium sorbate	20		only surface treatment of unpeeled fresh citrus fruit
	E 220-228	Sulphur dioxide — sulphites	10	(3)	only table grapes, fresh lychees (measured on edible parts) and blueberries (<i>Vaccinium corymbosum</i>)
	E 220-228	Sulphur dioxide — sulphites	100	(3)	only vacuum-packed sweetcorn
	E 445	Glycerol esters of wood rosins	50		only surface treatment of citrus fruit
	E 464	Hydroxypropyl methyl cellulose	10		only for citrus fruit, melons and pomegranates in order to: — repeat all or some of the mandatory information particulars required by the Union legislation and/or national law, and/or — provide on a voluntary basis brand name, production method, PLU-code, QR-code and/or barcode Period of application: From 24 June 2013.
	E 471	Mono- and diglycerides of fatty acids	<i>quantum satis</i>		Only for the surface treatment of citrus fruit, melons, pineapples, bananas, papayas, mangoes, avocados and pomegranates
	E 473-474	Sucrose esters of fatty acids — sucroglycerides	<i>quantum satis</i>	(1)	only fresh fruits, surface treatment
	E 901	Beeswax, white and yellow	<i>quantum satis</i>		only for the surface treatment of fruit: citrus fruit, melons, apples, pears, peaches, pineapples, bananas, mangoes, avocados and pomegranates and as glazing agent on nuts Period of application as regards bananas, mangoes, avocados and pomegranates: From 25 December 2012
	E 902	Candelilla wax	<i>quantum satis</i>		only surface treatment of citrus fruit, melons, apples, pears, peaches and pineapples and glazing agent on nuts
	E 903	Carnauba wax	200		only for the surface treatment of fruit: citrus fruit, melons, apples, pears, peaches, pineapples, pomegranates, mangoes, avocados and papayas and as glazing agent on nuts Period of application as regards pomegranates, mangoes, avocados and papayas: From 25 December 2012.
	E 904	Shellac	<i>quantum satis</i>		only for the surface treatment of fruit: citrus fruit, melons, apples, pears, peaches, pineapples, pomegranates, mangoes, avocados and papayas and as glazing agent on nuts Period of application as regards pomegranates, mangoes, avocados and papayas: From 25 December 2012.
	E 905	Microcrystalline wax	<i>quantum satis</i>		only for the surface treatment of fruit: melons, papayas, mangoes, avocados and pineapples Period of application pineapples: From 25 December 2012
	E 914	Oxidised polyethylene wax	<i>quantum satis</i>		only surface treatment of citrus fruit, melons, papaya, mango, avocado and pineapple
		(1): The additives may be added individually or in combination			
		(3): Maximum levels are expressed as SO ₂ relate to the total quantity, available from all sources, an SO ₂ content of not more than 10 mg/kg or 10 mg/l is not considered to be present			