

40. THE USE OF POLIMERS ASCARRIERS IN ENCAPSULATION OF SPICE OLEORES- INS

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Over the last decade, oleoresins successfully displace natural ground spices in food production due to significant advantages in application. Although most of the natural ground spices derived from tropical and subtropical materials have antioxidant properties, but they are also a source of microbial contamination, due to lesions of mold, mildew, damage by rodents and insects [1]. To achieve sterility it is necessary to pre-heat treatment which can lead to a loss of about 20% aromatics. As is generally known, the major part of the volatile fraction is bound and released by hydrolysis, for example, heat treatment of the meat products. However, since this process is not to end, the effective concentration of the volatile substances will always be less than the extracted oleoresins and extracts. Using ground spices of poor quality make blotches on the cut of the finished product possible, and that may not comply with the organoleptic characteristics with the current regulations [2].

The main components of oleoresins that are responsible for the aroma, flavor and color is volatile and nonvolatile materials fractions. This taste aromatic complex contains certain substances which remain composition of essential oils stable during the long storage term. Oleoresin is microbiologically sterile and has a bactericidal effect on the microbiome of the product to which they are attached [2].

The main oleoresin in meat market includes oleoresins of black pepper, allspice, white, nutmeg, mace, red pepper, cardamom and others. They may be of different essential oil content, type of solubility, degree of processing [1]. Due to the high concentration of active substances oleoresins are rarely used by direct application to the fin-

ished product, but applied on top of the carrier, which provides the most effective release of taste and flavor at a certain stage of production of food production [3].

Oleoresins have several disadvantages that complicate their use in food products. Under the influence of air, light, heat, water, they have a tendency to destruction and have a short shelf life in case of detention in inappropriate conditions. Thick and sticky consistency can cause a poor dispersion in the food matrix and processing. Mixed in food matrices, oleoresin shows a tendency to dry out and lose flavor because of the heat treatment [4].

Encapsulation prior to use oleoresins in food products is advantageous alternative solution for the purpose of limiting or reducing the aromatic and flavor degradation during processing or storage, simplifying use forms [4].

Encapsulation is a technique by which a single substance or mixture of substances contained within or covered with another substance or substances system. The covered substance is called base, active component or filler. And the covering materials are called encapsulating agent or carrier.

References

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