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## Spray-dried encapsulation of chia oil (*Salvia hispanica* L.) in polysaccharide matrices

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Functional food ingredients and nutraceutical products are important in health promotion and disease risk reduction. Such foods are expected to render physiological benefits beyond their traditional nutritional value. Chia (*Salvia hispanica* L.) is a native seed of southern Mexico and was among the principal crops grown by ancient Mesoamerican cultures. The fatty acids of chia oil are highly unsaturated, these fatty acids are nutritionally important for good health and are especially beneficial for individuals suffering from coronary heart disease, diabetes, and other disorders. Encapsulation of active molecules aims at creating a barrier between the molecules and the environment. One of the most attractive possible methods for this purpose is by means of spray drying in which modified starches, maltodextrins and gums are used as polymer matrix. Due previous, we propose to evaluate the conditions of microencapsulation of chia oil to preserve its nutritional quality.

Encapsulation experiment was done using a 32 factorial design with five replicates of the central trial. The evaluated factors and their corresponding value ranges were maltodextrin -arabic gum ratios (1:1, 1:2 and 1:3), and drying temperatures (140, 160 and 180 °C) the content of chia oil was fixed by 30 %. The highest yield (60.2g) was obtained using a 1:3 arabic gum-maltodextrin ratio at a temperature of 160 °C.

### Biography

David Rosel Sosa gets his undergraduate studies of industrial chemistry at the age of 27 years at the Autonomous University of Yucatan, Mexico. Currently he is studying the Masters in food science and biotechnology in the ITM-Merida, Mexico, in the area of PUFA encapsulation by spray drying process.

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