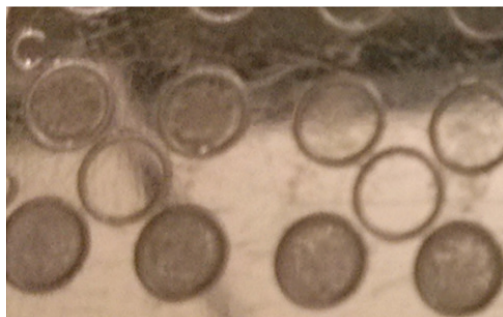


Rapid Authentication of Edible Oils by MALDI-MS Technology

Tsun-Tsun NG, Pui-Kin SO, Bo ZHENG and Dr Zhong-Ping YAO

Department of Applied Biology and Chemical Technology



Target pre-deposited with matrix

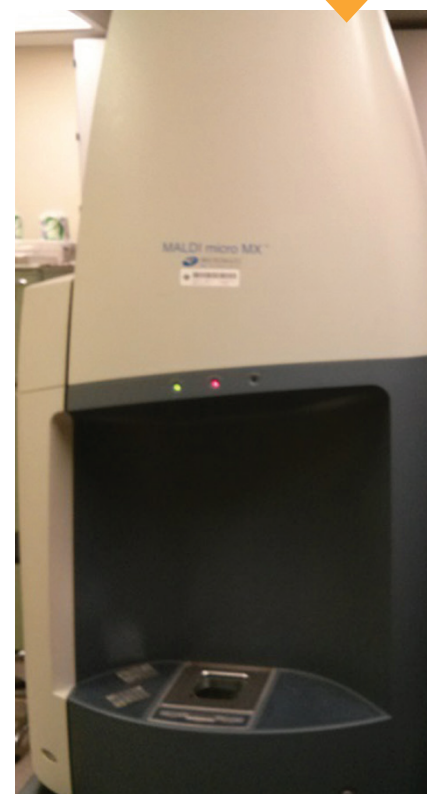


Direct oil sample loading



Authentication of edible oils has been an important issue in food safety. A direct analysis of edible oils using matrix-assisted laser desorption/ionization mass spectrometry (MALDI-MS) have been developed and a preliminary spectral database of edible oils have been established. Since different types of edible oils have different MALDI-MS spectral patterns, the authenticity of an edible oil sample can be determined by comparing its MALDI-MS spectrum with those of its labeled oil in the established database.

Compared to conventional techniques for analysis of edible oils, using MALDI-MS is much faster which allows direct analysis of edible oils, without the need of sample extraction, derivatization, sample cleanup and separation. It takes only several minutes for the technique to analyze one edible oil sample which can greatly reduce cost. The technique can be used by the industry to authenticate edible oils and screen out mixed edible oils and recycled edible oils.



MALDI_MS analysis