

LCMS-QQQ method for wide range determination of pesticides with QUECHERS sample preparation according to EN 15662:2008

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***Summary:** Due to the recently introduced EU Regulations 396/2005 and 149/2008 which involve a general MRL decrease, and due to the increased number of requests for shorter analytical turn around times and high quality performances from customers, Silliker Italia S.p.A. has applied the standard EN 15662:2008 QUECHERS to the validation of a wide range of molecules, using triple quadrupole mass spectroscopy detection for both GC and LC. The technique provides the best performance so far for a large number of pesticides molecules in fruit and vegetable matrixes.*

QUECHERS is simple. The homogeneous sample is extracted with acetonitrile. Samples with low water content require the addition of water before the initial extraction to get a total of approximately 10 g of water. After addition of magnesium sulphate, sodium chloride and buffering citrate salts, the mixture is shaken intensively and centrifuged for phase separation. The extract is then acidified by adding a small amount of formic acid, to improve the stability of certain base-sensitive pesticides, and can be directly employed for LC-based analysis.

Quantification is performed using an internal standard, which is added to the extract after the initial addition of acetonitrile. Simultaneous detection of about 200 pesticides is achieved with API 4000 triple quadrupole using a MRM (Multiple Residue Monitoring) fragmentation technique.

***Keywords:** Quechers, pesticides, triple quadrupole*