Abstract
Analysis of pesticide residues in food and feed is an ongoing challenge. Especially in ‘QuEChERS-times’, highly selective methods are obligatory to eliminate matrix effects. The use of accurate mass–time–intensity (AMTI) systems in negative chemical ionization opens up the possibility of highly selective determination of a theoretically unlimited number of compounds. Negative chemical ionization is adding selectivity and exceeds the limitations in response for lower detection limits than electron impact or positive chemical ionization for dedicated pesticides like the halogenated pyrethroides.

Introduction

Calibration Solutions
Standards

Calibration solutions of γ-BHC, γ-chlordane, α-chlordane and trans-nonachlor were prepared in ethyl acetate at 50 ppm. ±50% reproducibility was considered to be acceptable. Concentrations in the calibration solutions were measured by LC/MS (Fig. 3) in the QuEChERS extracts used for this study.

Experimental

Instrumental Analysis

With increasing concentration, mass differences are within few mDa in all matrices of all spiked levels. As expected, mass accuracy in matrices is better at higher levels (0.25 mDa ± 0.44 mDa (p = 0.01) for the four different quantifier ions). Figures 5a and 5b illustrate mass accuracy depending on the matrix. Mass differences are within few mDa in all matrices of all spiked levels. As expected, mass accuracy in matrices is better at higher levels (0.25 mDa ± 0.44 mDa (p = 0.01) for the four different quantifier ions).

Conclusions

The authors would like to gratefully acknowledge Jonathan Humar from Eurofins FoodTesting UK Limited for providing the QuEChERS extracts used for this study.

Acknowledgements

AMS 2012 TnP 600