**INTRODUCTION**

The European Union Baby Food Directive 2003/131/EC designates pesticides as prohibited, in which case they are considered not to have been used if their residue does not exceed 0.003 mg/kg or have maximum residue limits (MRLs) set between 0.004–0.009 mg/kg. A method has been described for the determination and confirmation of seven priority pesticide residues with sixteen components in different baby foods at a level of 0.001 mg/kg.

**METHODS**

**Extraction Method**
- Weigh 10 g homogenised sample into a centrifuge tube.
- Add 10 mL acetonitrile and shake vigorously for 1 min.
- Add 5 mL MeOH and 1 g NaCl and vortex immediately.
- Centrifuge at 4000 g for 1 min.
- Transfer 100 mL into a LC vial and add 1000 mL water.
- Subject for LC/MS/MS analysis.

**LC Conditions**

- **Column**: Waters Acuity I-Class Performance LC
- **Column temperature**: 45 °C
- **Mobile phase A**: 0.3 M NaH2PO4, pH 3
- **Mobile phase B**: 99.5% Water, 0.5% Acetonitrile, 0.001% TFA
- **Flow rate**: 50 µL
- **Injection volume**: 50 µL

**RESULTS AND DISCUSSION**

To test the extraction method described, seven recovery experiments were performed in fruit-based, pasta-based, and cereal-based baby foods, spiked at 0.001 mg/kg. The mean recovery and relative standard deviation for each pesticide are listed below.

The instrumental limits of detection (LODs) were determined for each residue in each matrix. The LODs were defined as signal-to-noise (S/N) ratio of 3:1. All the EU MRLs for the compounds analysed are greater than 0.00073 mg/kg baby food. Therefore, this confirmatory method is able to surpass the current legislation.

**CONCLUSIONS**

A method has been described for the determination and confirmation of seven priority pesticide residues with sixteen components in different baby foods. The QuEChERS extraction method yielded very good recovery and precision at the low concentration levels required by legislation.

The sensitivity of ACQUITY UPLC and Quatro Premier allows the method to meet the challenge set by the EU Baby Food Directive 2003/13/EC.

**REFERENCES**
