Introduction

Faster, cheaper, better – main features of the laboratory of the future. To achieve these objectives, changes in all levels are necessary. One aspect is the automation of lab processes, but up to now only mostly sub-processes are automated in the lab.

The presented poster shows the development of a fully-automated sample preparation system.

Fully-automated sample preparation system

- Equipped system with samples (manual)
- Quality control
- Add ISTD
- Add extraction solvent
- Extraction
- Centrifuge samples
- Pass-through SPE
- Label HPLC vial
- Add ISTD and/or diluting solution
- Add sample aliquot or filtered sample
- Cap HPLC vial

Details

- Construction with three ABB robots
- High throughput of up to 400 samples / day
- Versatile (different matrices and different methods, e.g. QuECHERS)
- Processing different methods within the same time
- Full-automatic: from weighed sample to the prepared HPLC vial no manual steps are necessary
- 24 h runtime

Benefits

- Continuous flow / one piece flow
- Overnight sample processing
- Improved TAT 95
- Sample feeding by untrained staff
- Complete traceability
- Lower production costs
- Reduced costs
- Improved quality

Fig. 1 Picture of the fully-automated food / feed sample preparation system

Fig. 2 Benefits of a fully-automated food / feed sample preparation system