

食品安全检测专栏

大米及玉米中6种环己烯酮类除草剂的液相色谱-串联质谱测定

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收稿日期 2009-2-10 修回日期 2009-5-31 网络版发布日期:

摘要 建立了大米和玉米中6种环己烯酮类除草剂吡喃草酮, 禾草灭, 噻草酮, 苯草酮, 稀禾定和烯草酮的高效液相色谱-串联质谱(LC-MS/MS)测定方法。样品制备后, 采用乙腈进行提取, 经C₁₈和Envi-Carb固相萃取柱净化处理后, 采用LC-MS/MS电喷雾电离 (ESI), 多反应监测 (MRM) 正离子模式检测, 外标法定量。在1~100 μg•L⁻¹范围内,6种环己烯酮类除草剂的线性相关系数均大于0.999。在添加浓度5~20 ng•g⁻¹范围内, 6种环己烯酮类除草剂的回收率在70.0%~97.9%, 相对标准偏差 (RSD) 均在10%以内。

关键词 [环己烯酮](#) [除草剂](#) [液相色谱-串联质谱](#)

分类号 [0657.63](#)

Analysis of Cyclohexanedione Herbicides in Rice and Corn by LC-MS/MS

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Abstract A method for determination of 6 cyclohexanedione herbicides, tepraloxydim, alloxydim, cycloxydim, tralkoxydim, sethoxydim and clethodim in rice and corn was developed. After homogenization, sample was extracted with acetonitrile. The extracts were cleaned by C₁₈ and Envi-Carb solid phase extraction (SPE) cartridge. Identification and detection were achieved by electrospray ionization (ESI) in positive mode using multiple reaction monitoring of liquid chromatography coupled with tandem mass spectrometry. The linearity of all the 6 cyclohexanedione herbicides in the range from 1 to 100 μg•L⁻¹ is correlation coefficient greater than 0.999. Cyclohexanedione herbicides are quantified by external standard method. Recoveries of 6 cyclohexanedione herbicides are within 70.0%-97.9% at the spiked levels of 5-20 ng•g⁻¹. The relative standard deviations (RSDs) for the 6 herbicides are less than 10%.

Key words [cyclohexanedione herbicide](#) [LC-MS/MS](#)

DOI

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