

果蔬类污染物三合一便携式检测仪的应用 Detection of Contamination in Fruits and Vegetables with a Portable Rapid Detector

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摘要: 使用果蔬污染物三合一便携式检测仪对亚硝酸盐、重金属铅及农药样品进行测定, 确定了仪器对于不同污染物的有效检测范围。结果表明, 亚硝酸盐的有效检测范围为1.5~150 $\mu\text{g}/\text{mL}$, 重金属铅在0.5~4.0 $\mu\text{g}/\text{mL}$ 之间, 辛硫磷、敌百虫、呋喃丹和灭多威的检测范围分别是0.005~2.0、0.005~0.5、0.005~0.3和0.005~1.0 $\mu\text{g}/\text{mL}$ 。与Optizen 2120V-FT食品安全快速检测仪相比, 仪器对于亚硝酸盐、重金属铅、农药各项指标的检测均具有较好的准确性和精密度, 能够满足快速检测的要求。The performance of a newly-developed portable rapid detector of contamination in fruits and vegetables (PRD) was tested in lab, by detecting the content of nitrite, heavy metal and pesticide in different samples. The detection ranges of nitrite, lead, phoxim, trichlorfon, carbofuran and methomyl were 1.5~150, 0.5~4.0, 0.005~2.0, 0.005~0.5, 0.005~0.3 and 0.005~1.0 $\mu\text{g}/\text{mL}$, respectively. Precision tests, made on different concentration levels, gave values of RSD in the ranges of 2.6%~8.9% for lead, and less than 2% for nitrite, and the sensitivity of the four pesticides ranged from 31.368 to 62.05. The results show that the accuracy and precision detecting the three kinds of contamination can meet the requirement of rapid detection compared with Optizen 2120V-FT machine. The PRD is more simple, rapid, portable and feasible for application.

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