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标题: A quantitative solid-state Raman spectroscopic method for control of fungicides

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摘要: A new analytical procedure using solid-state Raman spectroscopy within the THz-region for the quantitative determination of mixtures of different conformations of trifloxystrobin (EE, EZ, ZE and ZZ), tebuconazole (1), and propiconazole (2) as an effective method for the fungicide product quality monitoring programmes and control has been developed and validated. The obtained quantities were controlled independently by the validated hybrid HPLC electrospray ionization (ESI) tandem mass spectrometric (MS) and matrix-assisted laser desorption/ionization (MALDI) MS methods in the condensed phase. The quantitative dependences were obtained on the twenty binary mixtures of the analytes and were further tested on the three trade fungicide products, containing mixtures of trifloxystrobin-tebuconazole and trifloxystrobin-propiconazole, as an emissive concentrate or water soluble granules of the active ingredients. The present methods provided sufficient sensitivity as reflected by the metrologic quantities, evaluating the concentration limit of detection (LOD) and quantification (LOQ), linear limit (LL), measurement accuracy and precision, true quantity value, trueness of measurement and more.

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