

ANALYSIS OF CYROMAZINE IN POULTRY FEED AND MUSCLES USING LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY

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ABSTRACT. Cyromazine is a registered pesticide for controlling flies in poultry-caged layers. The compound is added in feed and passed through the chicken, leaving a residue in the manure that controls the growth of the fly larvae developing in the area. Concentration of cyromazine were determined in poultry feed and muscle using a liquid chromatography-mass spectrometry (LC-MS) coupled with electrospray ionisation. The procedure was optimised for simultaneous identification and quantitation of cyromazine and its metabolite, melamine in feed and poultry muscles. The compounds were extracted using QuEChERS method followed by dSPE C18 clean-up. LC separation was achieved using Atlantis HILIC silica column. Selective ion reaction (SIR) was used for selective detection of cyromazine and melamine. The calibration curves were linear in the 0, 10, 25, 50, 75 and 100 µg/kg range, with typical (R^2) values higher than 0.99 for cyromazine and 0.98 for melamine. The LOD and LOQ were lower than the MRL for cyromazine which is 50 µg/kg. This method was successfully applied to real samples for the analysis of cyromazine in poultry feed and muscles.

Keywords: cyromazine, melamine, poultry, tissue, feed, LC-MS