

Quantitative analysis of pesticides and mycotoxins in cannabis flower as defined by Pennsylvania state regulations

A single instrument solution for an efficient return-on-investment

Key features of SCIEX Triple Quad 6500+ system for cannabis analysis

- Single injection to help meet Pennsylvania's pesticide and mycotoxin regulations in cannabis flower, done entirely in electrospray ionization (ESI)¹
- Method performance demonstrated in cannabis flower extracts fortified at or below Pennsylvania's required reporting limits¹
- Isotopic internal standards to correct for matrix effects across multiple matrices
- Quick and easy acquisition method creation using the SCIEX vMethod Application
- Technical support and expertise online through SCIEX Now learning hub and via onsite training with cannabis experts



Example chromatograms of methyl parathion, chlorfenapyr and cyfluthrin, compounds typically analyzed by gas chromatography

mass spectrometry or atmospheric pressure chemical ionization, are shown here to demonstrate the sensitivity of electrospray ionization (ESI) on the SCIEX Triple Quad 6500+ system. Captan is shown as an example of sensitivity and stability because it is known to be easily hydrolyzed.

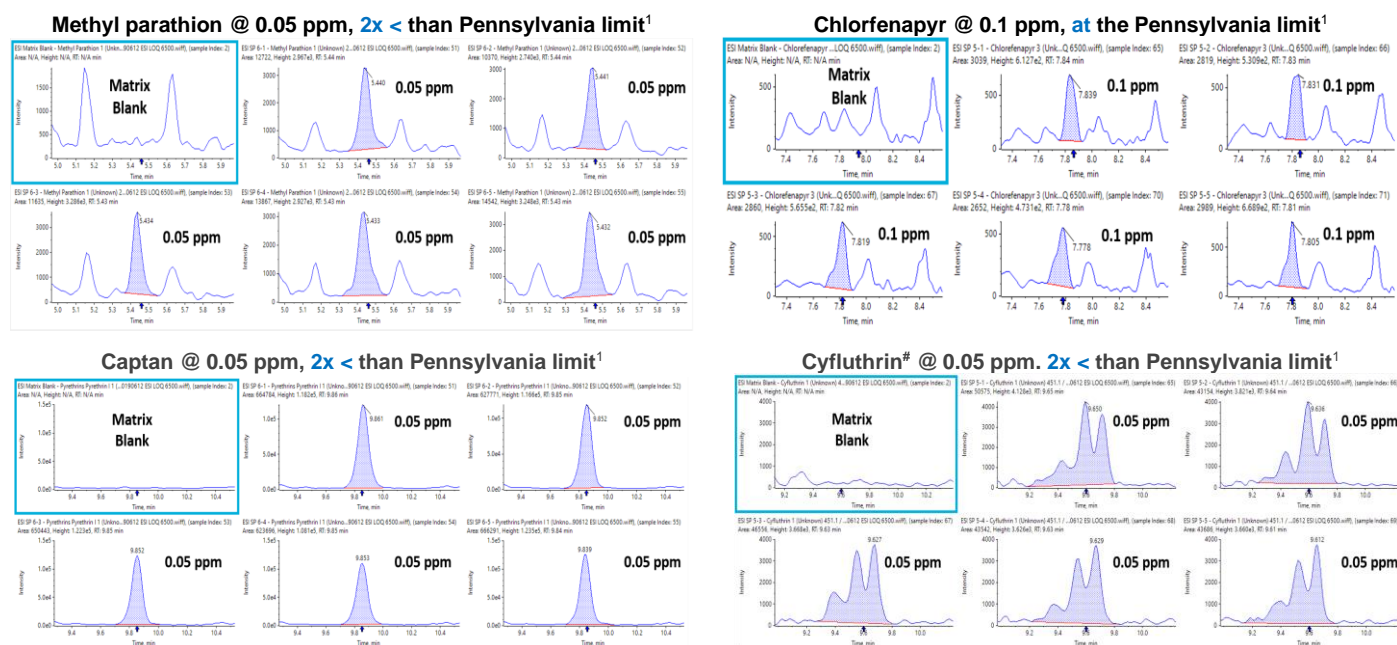


Figure 1. Unfortified cannabis flower (top left in each set) followed by five replicate extractions of fortified cannabis flower. * pyrethrins were fortified at the Pennsylvania limit¹ of 0.05 ppm. [#] cyfluthrin isomers are summed for a total concentration.

Table 1. The SCIEX Triple Quad 6500+ system can help meet or exceed all the Pennsylvania pesticide¹ and mycotoxin testing limits (µg/g or ppm) in cannabis flower summarized below.

Pesticide name	Limit	Ionization	Pesticide name	Limit	Ionization	Pesticide name	Limit	Ionization
Abamectin	0.1	ESI	Fenpyroximate	0.1	ESI	Spirotetramat	0.1	ESI
Acephate	0.1	ESI	Fipronil	0.1	ESI	Spiroxamine	0.1	ESI
Acequinocyl	0.1	ESI	Flonicamid	0.1	ESI	Tebuconazole	0.1	ESI
Acetamiprid	0.1	ESI	Fludioxonil	0.1	ESI	Thiacloprid	0.1	ESI
Aldicarb	0.1	ESI	Hexythiazox	0.1	ESI	Thiamethoxam	0.1	ESI
Azoxystrobin	0.1	ESI	Imazalil	0.1	ESI	Trifloxystrobin	0.1	ESI
Bifenazate	0.1	ESI	Imidacloprid	0.1	ESI			
Bifenthrin	0.1	ESI	Kresoxim-methyl	0.1	ESI			
Boscalid	0.1	ESI	Malathion	0.1	ESI			
Carbaryl	0.1	ESI	Metalaxyl	0.1	ESI			
Carbofuran	0.1	ESI	Methiocarb	0.1	ESI			
Captan	0.1	ESI	Methomyl	0.1	ESI			
Chlorantraniliprole	0.1	ESI	Methyl Parathion	0.1	ESI			
Chlorfenapyr	0.1	ESI	MGK 264	0.1	ESI	Mycotoxin name	Limit	Ionization
Chlorpyrifos	0.1	ESI	Myclobutanil	0.1	ESI	Aflatoxin B1	Sum of 4 Aflatoxins ≤ 0.02	ESI
Clofentezine	0.1	ESI	Naled	0.1	ESI	Aflatoxin B2		
Cyfluthrin	0.1	ESI	Oxamyl	0.1	ESI	Aflatoxin G1		
Cypermethrin	0.1	ESI	Paclobutrazol	0.1	ESI	Aflatoxin G2		
Daminozide	0.1	ESI	Permethrins	0.1	ESI	Ochratoxin A	0.02	ESI
Dichlorvos (DDVP)	0.1	ESI	Prallethrin	0.1	ESI			
Diazinon	0.1	ESI	Phosmet	0.1	ESI			
Dimethoate	0.1	ESI	Piperonyl Butoxide	0.1	ESI			
Dimethomorph	0.1	ESI	Propiconazole	0.1	ESI			
Ethoprophos	0.1	ESI	Propoxur	0.1	ESI			
Etofenoprox	0.1	ESI	Pyridaben	0.1	ESI			
Etozazole	0.1	ESI	Pyrethrins	0.1	ESI			
Fenoxycarb	0.1	ESI	Spinosad	0.1	ESI			
Fenoxycarb	0.1	ESI	Spinosad	0.1	ESI			

SCIEX supports you

Scan or click the QR codes to browse free online training videos, cannabis testing material and learn how SCIEX Now can help manage your instrument performance.

References

1. Pennsylvania rules as of October 5, 2021. Program, MM, Marijuana M. OFFICE OF MEDICAL MARIJUANA GUIDANCE FOR QUALITY TESTING AND SAMPLING Definitions. 2018, 1-9.

Learning hub



SCIEX Now



Cannabis Testing



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