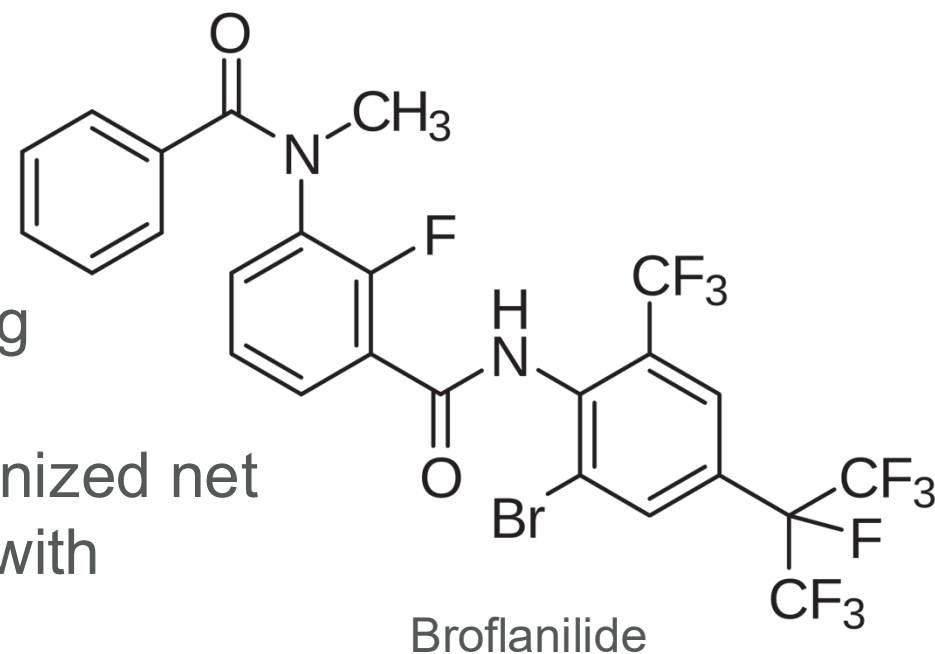


DETERMINATION OF BROFLANILIDE IN INCORPORATED HDPE NETS

CIPAC, KRABI, THAILAND, 2026

THE METHOD MEASURES TOTAL BROFLANILIDE IN INCORPORATED HDPE LN

- ANALYTE: Broflanilide (CIPAC 994)
- MATRIX: Polyethylene-incorporated long-lasting insecticidal net (LN)
- Test weight: 0.500 g of representative, homogenized net
- DETERMINATION: Reverse Phase-HPLC-UV with Triphenylmethanol as internal standard
- REPORTING: Broflanilide content per mass of net



HOT SOLVENT EXTRACTION RELEASES BROFLANILIDE FROM THE HDPE MATRIX

1 PREPARE SOLUTIONS

10% (w/w) citric acid in THF; 50 µg/mL Triphenylmethanol(IS) in acetonitrile

2 EXTRACT

Weigh 0.500 g homogenized net. Add 48.0 mL xylene and 2.0 mL citric-acid solution.

Reflux at 115 °C (solution temperature) for 30 min.

3 ADD INTERNAL STANDARD

While warm, add 50.0 mL Triphenylmethanol(IS) acetonitrile solution.

4 CLARIFY

Transfer 7.0 mL mixed extract; centrifuge 20 min at 8,000 rpm.

5 RECONSTITUTE

Evaporate 2.0 mL supernatant to dryness at 60 °C. Add 2.0 mL acetonitrile; centrifuge 1 min at 2,500 rpm.

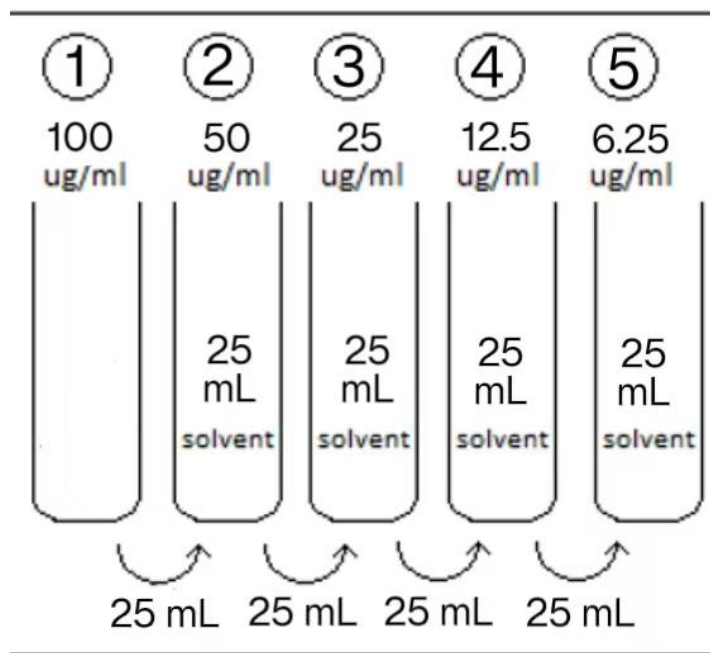
6 ANALYSE

Transfer about 1.5 mL to an HPLC vial.

CALIBRATION BRACKETS THE EXPECTED SAMPLE CONCENTRATION

Prepare broflanilide standards at 6.25, 12.5, 25, 50 and 100 $\mu\text{g/mL}$ in 50 $\mu\text{g/mL}$ Triphenylmethanol/acetonitrile.

Correct the standard concentration for broflanilide reference-standard purity. Quantify broflanilide using the broflanilide-to-Triphenylmethanol peak-area ratio.



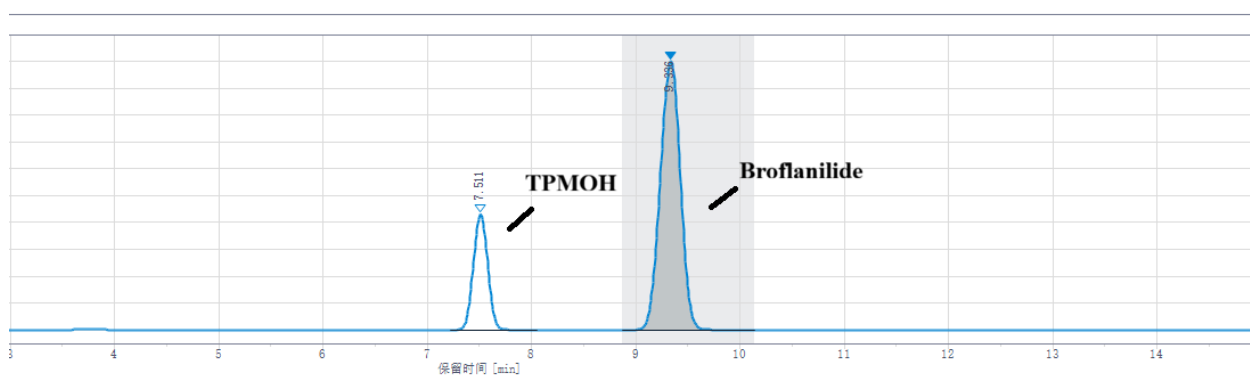
RP-HPLC RESOLVES BROFLANILIDE AND THE INTERNAL STANDARD

Injection Volume	20 µL
Mobile Phase	70: 30 Acetonitrile: Water
Flow Rate	1 mL/min
Run Time	25 min
Wavelength	226 nm

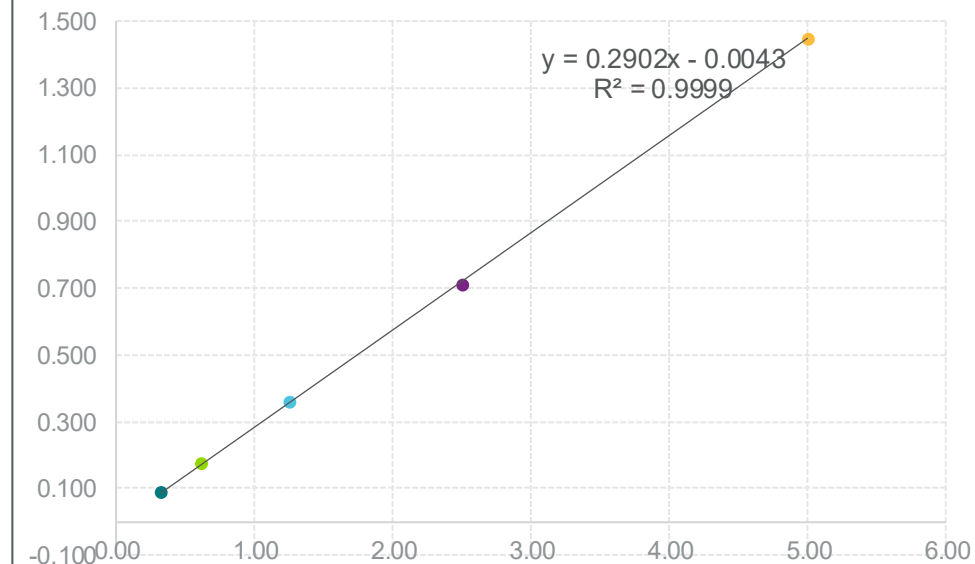
COLUMN / MODE

Eclipse Plus C18, 250 × 4.6 mm, 5 µm; isocratic

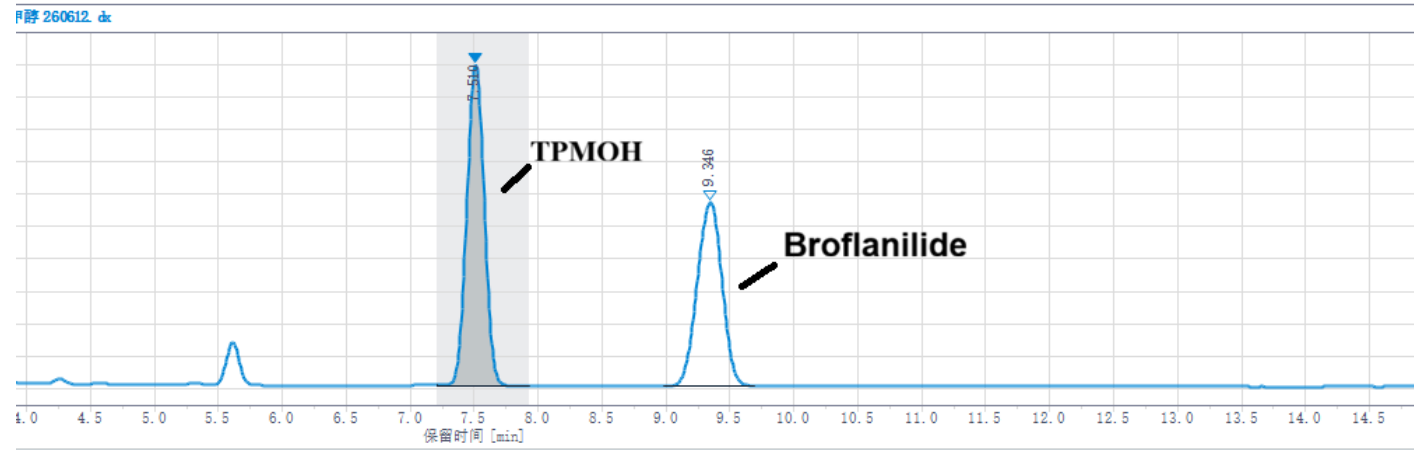
Calibration: $y = 0.29016x - 0.00427$; $R^2 = 0.99989$



Broflanilide calibration



THE HDPE EXTRACT SHOWS SEPARATED BROFLANILIDE AND INTERNAL STANDARDS PEAKS



Results from 3 net samples were close to their theoretical Broflanilide contents.

CURRENT METHOD STATUS

Preliminary findings

- The proposed extraction procedure are feasible.
- The HPLC conditions provide suitable separation of Broflanilide and the internal standard.
- Results from 3 net samples were close to their theoretical Broflanilide contents.
- Method optimization and validation are ongoing.

Work remaining

- Finalize the extraction and HPLC parameters.
- Complete specificity, linearity, recovery and repeatability studies.
- Evaluate extraction completeness, robustness and extract stability.

Purpose of discussion with CIPAC

- Obtain guidance on the required validation package and the pathway toward a collaborative trial.
- What validation data should be completed before submission?
- When should a draft Information Sheet and small-scale trial be proposed?