

Herbicide Residues in Fish from McGarvey and Blue Creeks

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Background Information

- Study concept under discussion for 2 yrs
- Work plan (sample collection, sample custody, study design)
- Contract between DPR and DFG for analysis of phenoxy-herbicides and degradates
- Samples collected in mid-April to mid-May
- Sculpin from McGarvey Cr and trout from WF Blue Cr
- 2,4-D and dichlorophenol
- Triclopyr and trichloropyridinol

Accelerated Solvent Extractor

- Heat, pressure and solvent
- Extract pesticide from tissue
- Other junk too



Gel Permeation Chromatograph

- Remove fat from ASE samples
- Clean-up
- Leaves solvent and pesticide



Gas Chromatograph

- Analysis instrument
- Sample is super-heated to gas
- A solid adsorbent causes partitioning
- Band for each compound



Gas Chromatography Mass Spectrometry

- Interface GC w/ MS
- MS charges particles
- Spectrum of parent ion and fragments
- Unique to compound
- Separate w/ GC
- Identify w/ MS



Quality Control

Sample	2,4-D	Dichloro-phenol	Triclopyr	Trichloro-pyridinol
Spike	103%	91%	93%	67%
Spike (dup)	99%	- -	98%	- -

Herbicide Residues in Fish

Sample	Triclopyr	Trichloropyridinol	2,4-D	Dichlorophenol
MCG413S	ND ¹	ND ²	ND ³	ND ²
MCG501S	ND	ND	ND	ND
MCG508S	ND	ND	ND	ND
WFB413T	ND	ND	ND	ND
WFB501T	ND	ND	ND	ND
WFB508T	ND	ND	ND	ND

1 = < 1 ppb
 2 = < 5 ppb
 3 = < 2 ppb