

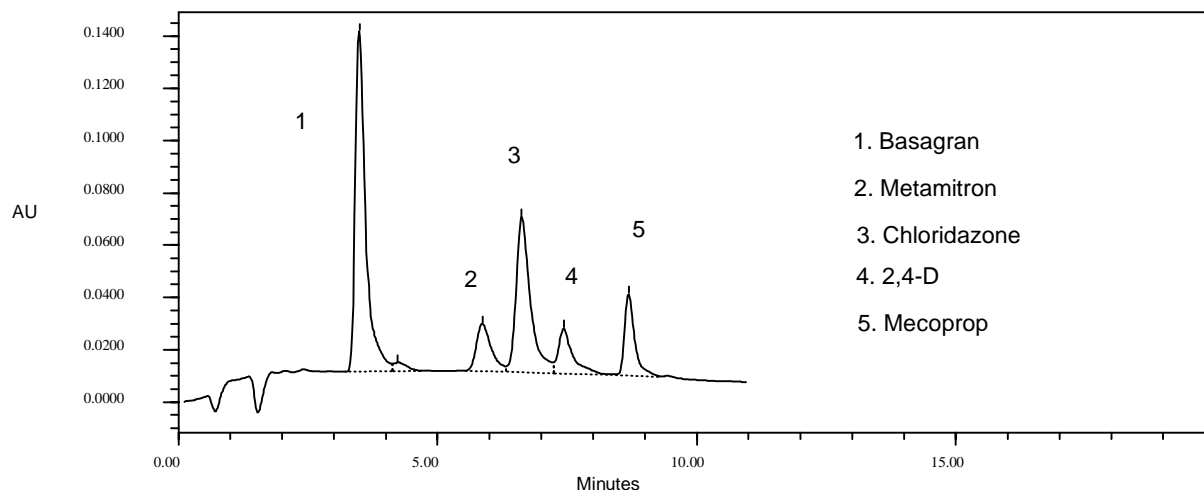
# Waters Integrity System Applications

## Basagran(Bentazon) Detection Using the Integrity LC/MS System

**Highlights:** Detection and identification of a common herbicide; confirmation of identity by automated library search against the commercially available Wiley library.

The trace analysis of common pesticides found in drinking water was performed using a typical HPLC separation on the Integrity LC/MS System. Simultaneous PDA and MS detection is demonstrated on a single sample injection. The detection of Basagran, a widely used herbicide, is featured in an example of how Millennium software displays PDA spectra, mass spectra and library search results for the purpose of compound ID.

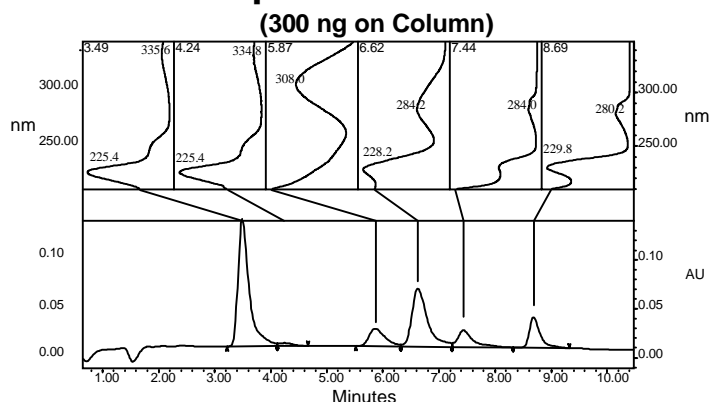
### Pesticide PDA Chromatogram (300 ng on Column)



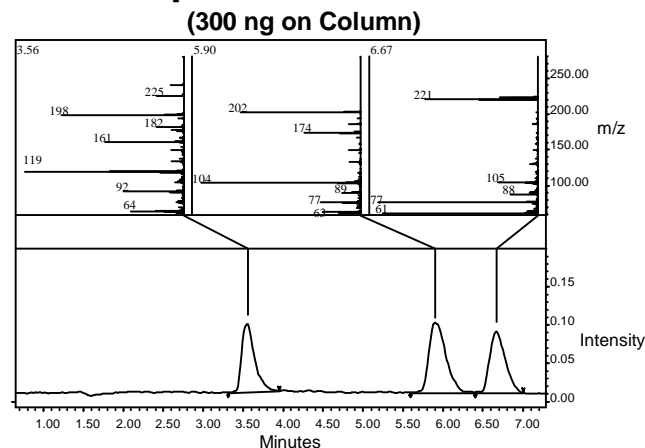
The chromatographic separation for a select group of compounds of environmental interest is shown at 300 ng on column - note the excellent signal-to-noise ratio. The spectra of each peak can then be searched against the Wiley library in hopes that a match or identification results. However, if the compound of interest is not in the Wiley library, and the user has no standard material to create his own library, then structural information and compound classification from both the spectrum and the search can still be obtained.

Greater confidence in the identification of Basagran is also obtained by comparing both PDA and MS data generated from a single injection. Using Millennium software, the PDA Spectrum Index Plot is displayed along with the corresponding spectra from each peak. PDA detection is also very useful since it yields information concerning peak homogeneity. Similarly, the MS Spectrum Index Plot is also shown which displayed the corresponding mass spectra for each peak. Simultaneous automated UV and MS library search routines can then confirm the identification of chromatographic peaks.

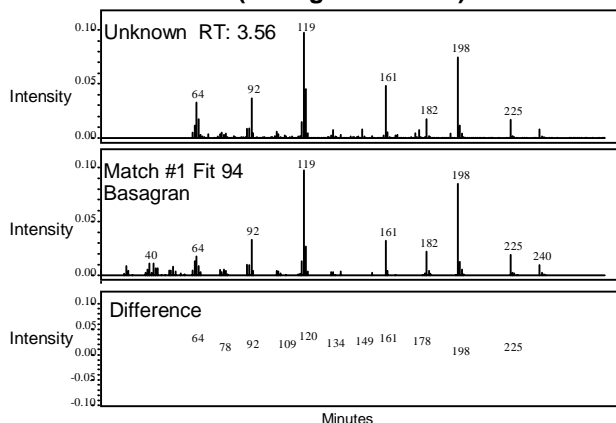
### Basagran Identification: PDA Spectrum Index Plot



### Basagran Identification MS Spectrum Index Plot



### Library Search Identification of Basagran (300 ng on column)



Wiley library search results are shown at 20 ng on column. The identification of this spectrum is still quite good, even at this level.

### Basagran at 20 ng on Column

The extracted ion chromatogram at m/z 198 of Basagran at 20 ng on column is also shown. Extracted ion chromatograms (single ion chromatograms) help pull signal from compounds of interest out of background interferences caused mostly by ions from the sample matrix. Detection at lower levels in dirty matrices is thereby enhanced.

