salt to the sample could further lower detection limits. This was more pronounced in pesticides with low hydrophobicity. The method was not affected by high humic acid content or the presence of other organic compounds. [*J. Am. Soc. Mass Spectrom.* **1995**, *6*(11), 1119–30]

Herbicide detection

Detecting herbicide residues in tissue samples typically requires sample sizes to be on the order of grams. J. V. Headley and colleagues developed a tandem mass spectrometric technique that enabled herbicide residues to be confirmed in tissue samples of <1 mg wet weight, thus allowing confirmation in lipid tissue taken from a single amphipod. In their method, a 2-μL tissue sample portion was transferred to a direct insertion probe (DIP) with a hypodermic syringe. The DIP was then introduced into the mass spectrometer and analyzed using electron impact tandem mass spectrometry without further sample preparation. A spiked sample showed that product ion spectra could be obtained from 20 pg of herbicide in the tissue matrix. Although their method was not used to quantify the herbicide residue in the tissue, they showed that the herbicide triallate could be detected in a single amphipod 30 days after a one-time addition of 10 g/L triallate. [*Anal. Chem.* **1995**, *67*(23), 4349–53]

MODELING

Dioxin mass balance

The atmospheric transport and deposition of dioxins and furans have received considerable study, but a discrepancy exists in the mass balance between estimated emissions and estimated deposition. A. S. Kao and C. Venkataraman examined the possibility that reentrainment of dioxin-tainted soil dust might account for a portion of the discrepancy. They first made the assumption that recent dioxin emissions were primarily on fine aerosol particles, whereas reentrained dioxin would accumulate on coarse aerosol particles. Then they used the distribution of aerosol particle sizes, deposition velocities, and literature estimates of the crustal contribution to atmospheric aerosols to estimate crustal reentrainment of dioxins and furans. The results indicated that although crustal reentrainment could only account for 4% of total atmospheric dioxins it could account for as much as 70–90% in an urban area. [*Chemosphere* **1995**, *31*(10), 4317–31]

PHYTOREMEDIATION

Carbon mineralization

Recent research activities have focused on the effects of vegetation on soil contaminants. Several studies show that some soil contaminants biodegrade faster where plants are present, suggesting that the remedial action may be the result of high densities of microorganisms in the root zone. T. A. Anderson and B. T. Walton studied the fate of trichloroethylene in the rhizosphere of four of the predominant plant species occurring at the contamination site. Two of the four plant species significantly increased carbon mineralization in soils in which they were grown. The two other species showed increases, but these were not statistically significant when compared with the nonvegetated soils. Sterile soils had the lowest mineralization rates. Mineralization decreased with time, and uptake into the plant was minimal. [*Environ. Toxicol. Chem.* **1995**, *14*(12), 2041–47]

POLICY

Compliance approaches

Environmental compliance based on enforcement actions may not be the best way to protect the environment. M. M. Stahl reviewed other approaches that would improve compliance. Compliance agencies should foster accountability toward environmental obligations instead of regulations. Relationships among agencies, industry, and the public need to be more cooperative and less adversarial, he contends. Agencies must adopt a multimedia, multipollutant protection strategy. And regulatory agencies should incorporate a diverse mix of tactics, including compliance assistance and incentives. Regulatory agencies must use more sophisticated measures to gauge the effectiveness of their actions, Stahl asserts. [*Environmental Forum* **1995**, *12*(6), 18–24]

Pesticide exports

Federal law currently permits the export of unregistered or withdrawn pesticides. J. H. Colopy showed that developing nations are often the destination of up to 150 million pounds of unregistered or withdrawn pesticides annually, many of which are associated with cancer or ecological damage. Developing nations are particularly susceptible to the negative effects of these pesticides because their farming is labor intensive. Farm workers often apply pesticides by hand and take few precautions. Colopy identifies weaknesses in U.S. environmental laws and international agency policy that allow this situation to continue unchecked. [*UCLA Journal of Environmental Law and Policy*, **1995**, *13*(2), 167–223]

RADIOACTIVE WASTE

Leaching from solids

Low-level radioactive waste must be solidified by class of waste prior to shipment to a disposal facility, according to the Nuclear Regulatory Commission. T. L. Jones and R. J. Serne studied the release of radionuclides from three waste streams solidified with different agents (masonry cement, Portland III cement, bitumen, and vinyl-ester styrene). Not every solidifying agent was used for each waste stream. Tritium, cobalt (^{60}Co), and cesium (^{137}Cs) were the only radioactive compounds detected in the lysimeter samples. Releases varied seasonally, with larger amounts released during times of greater soil drainage. Tritium was released rapidly from masonry cement. The wastes solidified with Portland III cement released more ^{60}Co than did the wastes solidified with the vinyl-ester styrene agents. (*J. Environ. Qual.* **1995**, *24*, 1063–73)

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