

Swedes fix strict sludge limits

NEW STANDARDS have been set by the Swedish Environmental Protection Board for the agricultural use of sewage sludge. A limit value has been placed on cadmium of 4 mg/kg dry solids (DS), and guiding values have been set for other heavy metals. The guiding values permit occasional exceedance of the standard, whereas the limit value applied to cadmium does not.

The same standards will apply for use of sludge on land areas not used for food production, such as parks, but a greater weight of sludge will be permitted — between 25-100 tons DS/ha in a single application. Agricultural use of sludge is being restricted to 1 ton DS/ha per year and must be immediately ploughed into the soil.

The use of sewage sludge

THE GUIDELINES	
Metal	Guidance value (mg/kg DS)
Chromium	150
Copper	600
Mercury	5
Nickel	100
Lead	200
Zinc	1500

by Swedish farmers has diminished over the last three years, dropping from 60 to 40%. Bad publicity over the heavy metal content has been the main reason, despite investigations showing negligible risks for soil quality, animals and man.

The weight of concern, however, has now shifted towards organic compounds for which no standards for acceptable levels currently exist. The water industry will try to improve the sludge quality by intensified control of industrial discharges, but with public opinion increasingly against the practice, the future of agricultural use of sludge in Sweden seems very uncertain.

ment plant outfalls will be extended from 600 to 1,500m.

New Jersey's beaches were closed for a time last year when an 80km long refuse slick, allegedly dumped by New York City, was washed up. Under threat of a lawsuit, New York agreed to spend \$10 million to prevent its trash reaching the New Jersey coast. It also stopped dumping of sewage sludge 19km offshore and now takes it to a site 170km out at sea. However, with the federal government being urged to end all dumping of sludge at sea by 1991, the EPA is working towards closure of even this site, where some 8 million tonnes is dumped each year.

Outfall plans for New Jersey

THE GOVERNOR of the state of New Jersey, USA, has announced a five-year plan to clean up the coastline, to protect a US\$12 billion per year tourist industry. \$200 million will be spent treating stormwater overflows, eliminating overflow connections between sanitary and storm sewers, and preventing polluting discharges entering the 200 stormwater outfalls along the coast. Four sewage treat-

H₂S test for salmonella

RESEARCHERS in Australia are developing a simple chemical field test that can be used to monitor faecal contamination of water supplies and distribution networks.

The hydrogen sulphide test, in which contaminated water turns black, indicates the presence of hydrogen sulphide producing micro-organisms such as *Salmonella* and *Citrobacter*. *Salmonella* have been found by the Rural Water Commission in Victoria to be present throughout a large proportion of its distribution system.

Advantages of the test over the conventional membrane filtration test are that it does not require expensive equipment, can be carried out on-site by unskilled workers, and is much cheaper. It is, however, a qualitative rather than quantitative test and relies on a different group of bacteria to indicate contamination.

Comparisons are currently being made between results from the hydrogen sulphide test and membrane filtration tests being carried out on samples routinely submitted for analysis, which will then be correlated. Methods for the safe disposal of the *Salmonella* after the test are also being investigated, as are a less sensitive version for highly contaminated systems and a version for seawater samples.

Barbadians urged to join up

RESIDENTS of Bridgetown in Barbados not connected to the city's new sewerage system have been called upon to do so by the prime minister, Erskine Sandiford. In a statement to a national meeting on the environment, he warned of the serious impact that inadequate sewage disposal has on the marine and coastal environments.

The high water table in Barbados restricts the effectiveness of traditional soil absorption methods of sewage disposal. The prime minister expressed his hope that construction of a similar sewerage system for the south coast of the island to be financed by the Inter-American Development Bank, would begin this year.

Evaporation threat from PCBs

BREEZES blowing across the waters of Lake Michigan not only dump PCBs into the lake, they are also carrying pollutants out of it and into the atmosphere. Research by Prof David Armstrong of the University of Wisconsin, USA, has shown that PCBs are being evaporated from the lake at a rate of nearly 320kg per year.

Over half of the input of PCBs into Lake Michigan is by atmospheric deposition, the remainder coming from direct dumping and polluted tributaries. The results of the study will help scientists to predict more accurately how long it takes for PCB levels to drop in lakes when dumping ceases, and to determine where the PCBs go to.