

8. Uncontrolled hazardous waste sites (Superfund) ranking method.
9. Loss prevention review checklist, 19 pages long.

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Chemical Hazards to Human Reproduction, by I.C.T. Nisbet and N.J. Karch, Noyes Data Corporation, Park Ridge, NJ, February 1983, 245 pages, \$28.00.

In this report commissioned by the US Government (Council of Environmental Quality for US EPA, NIOSH and OSHA), the authors have attempted to "research and include the extant scientific, medical and regulatory literature and documents that relate to the effects of chronic exposure to toxic chemicals and their consequences upon human and animal reproductive integrity".

Among the key findings that should enhance reader's interest are:

- Toxic chemicals can exert effects at many stages in male and female reproduction, but it does not follow that females are more sensitive than males to any given agent.
- Reproductive impairments of one kind or another are both frequent and widespread in the US. Published estimates of the proportion of reproductive attempts that fail or are impaired range from 30 to 80%.
- There is much evidence that drugs and other chemicals have had substantial adverse effects on reproduction in highly exposed groups.

The book has seven chapters, plus an extensive (40 page) bibliography and appendix. The chapters are:

1. Introduction.
2. The human reproduction system and its susceptibility to the toxic chemicals.
3. Sources of data on reproductive impairment in human populations.
4. Drugs and other chemicals reported to affect reproductive functions in humans.
5. Experimental assays for the effects of chemicals on reproduction.
6. Concordance between reported effects in humans and measured effects in animals.
7. Policy issues raised by this report.

The range and number of chemicals discussed was extensive. For example, ten agents, reported to have teratogenic effects in humans and animals included: anesthetic gases, smelter emissions (lead and arsenic), PCBs, alcohol, vinyl chloride, warfarin, diphenylhydantoin, aminopterin, bisulfan, methotrexate, and methyl mercury.

The last chapter is short, but contains some interesting questions, many of which must await more research before they can be satisfactorily answered:

- How important is reproductive impairment as a public health problem?

- Do chemicals play an important role in reproductive impairment?
- How good is the screening system for identifying chemical hazards to reproduction?
- Can the magnitude of human risks be assessed?
- Is scientific knowledge of reproductive toxicity sufficient to justify regulatory action?
- Is there scientific justification for differential regulation of exposure to men and women?

And finally, a concluding comment from the report that may put the current problem in perspective:

“The present state of scientific knowledge of chemical hazards to reproduction is similar to the state of knowledge of chemical carcinogens in the late 1960s . . . It is not clear that chemical hazards to reproduction will prove to be as large a public health issue as chemical carcinogens, or to what extent they will require attention in the 1980s. However, if reproductive hazards are an important regulatory problem, they should be predicted with as much scientific knowledge as possible.”

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Land Treatment of Hazardous Wastes, by J.F. Parr, P.B. Marsh and J.M. Kla (Eds.), Noyes Data Corporation, Park Ridge, NJ, February 1983, 422 pages, \$45.00.

The objective of this report made by scientists of the Agricultural Environmental Quality Institute, Agricultural Research Service, of the US Department of Agriculture, was to critically review and evaluate existing data relevant to land treatment of hazardous wastes. In the report, 12 different contributors discuss this information, identifying management controls needed to improve the effectiveness and environmental safety of land treatment, and suggest research activities that would improve the technology of land treatment while minimizing its environmental risks.

The book is divided into two parts, the first dealing with processes that influence the fate and effects of land-applied waste, i.e. interaction with soils, degradation and inactivation, plant uptake of inorganics, fate of toxic organics, effects of toxics on food chain, bioassay, fate of pathogens and composting. The second part of the book discusses the problems and potentials of land application for 11 different industries, including petroleum processing, pulp and paper, etc.

In addition to critically reviewing and evaluating the available information on land treatment of hazardous waste, the contributors of each of the 19 chapters give their perception of research needs in the area they have discussed.