

not, and in fact do not, take this extreme position. As the title of a recent book suggests, The Dose Makes the Poison (Ottoboni, 1984), meaning that not all concentrations of pesticides are equally threatening and some may not be threatening at all. Clark et al (1985) write that pesticide concentrations in fish have declined significantly since the most persistent species such as DDT and dieldrin were banned by the Environmental Protection Agency (EPA). In most fish, the concentrations now are within limits the EPA considers safe for human consumption. Clark et al go on to say that mutagenic, carcinogenic, and teratogenic effects of pesticides have been documented only in cases of relatively high exposure, such as may occur in occupational situations. Occurrences of high pesticide concentrations in water supplies appear to be fairly infrequent and localized, and by the time water reaches a customer tap, pesticide concentrations are seldom, if ever, at levels thought to produce health effects. However, caution is needed in interpreting these findings because, as Clark et al note, much remains unknown about long-term health effects of even very small concentrations of pesticides, nor is much known about synergistic effects among various pesticides and between pesticides and other substances.

This discussion suggests that if one word can be used to describe the current situation about pesticides and water quality it is uncertainty: uncertainty about the concentrations of these materials in ground and surface water and uncertainty about the significance of the concentrations for human, animal and plant health. Because of the uncertainty it is impossible to judge to what extent alternative agriculture's rejection of pesticides would generate water quality benefits to offset the higher economic costs of these systems relative to conventional agriculture. However, some offset seems likely.

In thinking about this it is important to keep in mind that alternative