

Thus the potential for nitrate damage to water quality appears to be about the same for alternative and conventional agricultural systems. Whether the two systems differ in fact in the amount of damage appears to be unknown. Papendick et al (1987, p. 23) assert (without substantiating evidence) that "organic farmers appear to be able to control availability and release of nitrogen through various techniques of soil management." (Note that this contradicts the CAST [1980] assertion cited above about differences in nitrate availability to the plant.) However, Papendick et al (1987, p. 23) then go on to state that

"... there are little or no hard data available on leaching loss of nitrates on organic farms. Lack of such data make it difficult to quantitatively assess the impact of nitrates in groundwater that could occur on a macroscale with a shift to organic practices."

We conclude that present evidence does not indicate benefits of alternative agriculture in reduced nitrate pollution of ground and surface water that would tend to offset the economic disadvantages of the system.

On sloping, erosive soils alternative agriculture generally will produce much less erosion than conventional agriculture. Since much of the phosphorus delivered to surface water is carried by sediment, the erosion-reducing characteristics of alternative agriculture ought to give the system a potential advantage relative to conventional agriculture in reducing eutrophication of lakes and reservoirs where phosphorus is the limiting nutrient. Whether in fact alternative agriculture has this advantage is not clear in the literature we have reviewed. We believe it plausible, however, to credit alternative agriculture with some positive effect in this respect. We cannot judge, however, how important this effect might be as an offset to the economic disadvantages of the system. We would need information about the amount of eutrophication damage, the contribution of agricultural sources of phosphorus to it, and the effect of alternative agriculture in reducing