

Apart from the effects of the yield penalty, Dabbert and Madden do not explicitly discuss reasons for the decline in profitability of the alternative system. However, their account suggests that the main reason is the inclusion of less profitable crops (wheat and alfalfa) in the cropping pattern.

The studies reviewed here are not the only ones devoted to the comparative micro economics of conventional and alternative farming systems, but in our judgment they are the most authoritative. (Other studies we examined are Berardi 1978; Harwood 1984; Poincelot 1986). With the important exception of the Lockeretz et al studies, they all showed that the alternative farming systems were less profitable than the conventional systems with which they were compared. The Lockeretz et al finding of little difference in profitability may have reflected the unusually dry years in four of the five years studied. As noted above, in the more normal rainfall year of 1979, the conventional farms were more profitable.

In the studies reviewed the most obvious reason for the lower profitability of the alternative systems was the yield penalty imposed by the fact that these systems necessarily include relatively large amounts of land in low value rotational uses, both to provide nutrients and to control pests. The studies are less clear about other causes of the yield penalty, but difficulties of controlling pests without pesticides is a likely factor. We already have noted that weed problems were a major concern of the organic farmers surveyed by Lockeretz et al (1984). The Council for Agricultural Science and Technology (CAST, 1980) cites a number of sources indicating that organic farmers name weed control as their number one problem (as it is of most conventional farmers according to CAST). CAST notes that one of the advantages of herbicides is that they permit the control of weeds in the crop row, something that cannot be done with tillage, and can be done by hand only