

Growing Corn With Conservation Tillage

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Conservation tillage practices are still not fully accepted by most farmers in Massachusetts. Benefits in terms of erosion control are perhaps understood but hesitancy for fear of crop failure or lack of economic incentive result in a continuation of conventional tillage methods. Research at the University of Massachusetts and on farms throughout the Commonwealth has shown similiar yields of corn silage and grain from several tillage systems (Table 1).

Table 1. Tillage influences on corn silage yields for five consecutive years.

Tillage	1981	1982	1983	1984	1985
	----- tons/acre 70% moisture -----				
MB Plow-Disk	25.9	20.5	25.1	28.9	24.3
Double Disk	25.7	19.7	23.6	28.1	26.6
Chisel Disk *	25.2	18.9	24.2	26.9	23.4
Notill	25.5	17.9	23.8	25.9	25.6

Yields at the University of Massachusetts Research Farm in South Deerfield (Table 1) have never varied more than about 3 ton per acre among the tillage methods during the five years of consecutive cropping the same areas with the same tillage treatments.

While these results from the river bottom soil in the Connecticut River Valley may not represent most soil conditions in other regions of Massachusetts, it is clear that many farmers have a tendency to overwork soils with repeated secondary tillage. Massachusetts in 'normal' years has sufficient moisture evenly distributed so that there is seldom a severe shortage limiting growth, especially early in the season. Thus no-till corn yields are unlikely to exceed conventional tillage as they do in other drier regions with sandy soils. If done correctly with a good planter and with proper attention given to planting and weed control, no-till and other reduced tillage systems should yield about the same as conventional moldboard plow-disk systems. If you are hesitant or unable to commit yourself to no-till, then an alternative to conventional tillage on sandy loams and silt loams might be a single heavy disking before planting or the use of the chisel plow with the disk.