

FIELD CORN FERTILIZER STUDIES - 1980 RESULTS

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Fertilizer inputs represent a major expense in growing corn for silage. Where high rates of fertilizer have been used for many years soils have become highly fertile and their productivity is frequently not first limited by nutrient availability. Soil moisture availability and perhaps certain micro-nutrients may be limiting or out of balance with the macro-nutrients. Many of our research plots at South Deerfield test high or very high for macro-nutrients. Basal fertilizer additions have been applied for many years to ensure nutrients are available and not masking other treatment effects.

In 1980 a field corn fertilizer study was established in one of these highly fertile research fields. The previous two crops were sweet corn, where the stover had been incorporated into the soil. Fertilizer treatments are shown in Table 1. The various rates of nitrogen, phosphorus and potassium had no significant effect on corn silage and earcorn yields. There was no effect on lodging or on per cent ears of the total dry matter yield, nor was there any advantage in sidedressing nitrogen. The 1980 growing season was below average for rainfall, except for June, and this probably influenced these results.

Table 1. Field corn fertilizer study - 1980.

Fertilizer Rate (lbs/ac)	Silage Yield	Ear corn Yield	Per cent ears	Non-lodged plants (%)
Nitrogen*				
100/0	25.3	5.0	49	98
100/60	25.5	5.2	51	98
180/0	26.5	5.5	52	94
180/60	25.0	5.1	51	95
Phosphorus (P₂O₅)				
50	26.1	5.3	51	98
150	25.1	5.1	51	95
Potassium (K₂O)				
100	25.3	5.2	52	96
200	25.9	5.2	50	97

* nitrogen incorporated at planting/nitrogen sidedress