# Forty Years of Continuous No-Tillage: Summary of Results and Lessons Learned. (S06-dick080354-Poster)

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## Abstract:

No-tillage (NT) is the most extreme form of the 'less tillage' conservation systems designed to maintain at least 30 % of the soil surface covered with crop residues after planting. In NT, the soil is left undisturbed from harvest to planting. Work on NT was initiated in Ohio in the early 1960s on contrasting soil types. The tillage variable included NT and plow tillage (PT) and the crop rotation variable included continuous corn (Zea mays) (CC), corn-soybean (Glycine max) (CS), and corn-oats (Avena sativa)-meadow (COM). This 40-year history provides information related to crop response and soil property changes. Crop yields were related to June temperature and July rainfall amounts. Corn and soybean yields increased significantly since the beginning of the experiment. In general, the corn yield difference between NT and PT treatments has increased with time, especially when corn was rotated with other crops. Soil organic C concentrations were affected by both tillage and rotation and had not reach equilibrium after more than 30 years of NT. Changes in nutrient, biological and hydrological properties affected by long-term maintenance of NT will also be presented.

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