## **Prospects for zone tillage for Pennsylvania. (S05duiker093809-Oral)**

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## Abstract:

Zone-tillage is a modification of no-tillage crop production. It involves tillage with coulters or shallow chisels (up to 6 inches deep) in a narrow strip of soil only. Crops are planted into the tilled zones, but the area between rows is left undisturbed (leaving maximum crop residue cover on at least 75% of the total field area). Zone-tillage is suggested as an alternative for straight no-tillage in those agro-climatic regions where conventional tillage has a yield advantage over no-tillage. Maximum crop residue at the soil surface between rows helps control soil erosion, crusting and evaporation, increases infiltration, conserves soil organic matter, and creates a suitable habitat for certain choice soil organisms such as night crawlers. By incorporating some residue and exposing soil in the row, zone-tillage is expected to increase soil temperature in spring above that of no-tillage, improving germination rate and early growth of crops. Potentially, zone-tillage may relieve surface compaction. For corn, it is hypothesized that zone-tillage has greatest potential in agro-climatic regions with less than 2600 Growing Degree Days, as well as on somewhat poorly or poorly drained soils. In this paper we will summarize 2002 results of zone-tillage evaluations in different agro-climatic regions of Pennsylvania. The evaluation is part of the on-farm research program of The Pennsylvania State University.