



4-1987

Is Row Fertilizer Necessary for No-Till?

Lloyd W. Murdock

University of Kentucky, lmurdock@uky.edu

William O. Thom

University of Kentucky, william.thom@uky.edu

Right click to open a feedback form in a new tab to let us know how this document benefits you.

Follow this and additional works at: https://uknowledge.uky.edu/pss_views

 Part of the [Soil Science Commons](#)

Repository Citation

Murdock, Lloyd W. and Thom, William O., "Is Row Fertilizer Necessary for No-Till?" (1987). *Soil Science News and Views*. 70.
https://uknowledge.uky.edu/pss_views/70

This Report is brought to you for free and open access by the Plant and Soil Sciences at UKnowledge. It has been accepted for inclusion in Soil Science News and Views by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.



Department of Agronomy

Soil Science News & Views



Vol. 8, No. 4, April 1987

Is Row Fertilizer Necessary for No-Till?

Lloyd Murdock and William Thom

Row fertilizer is an old practice which has been in and out of favor over the years. The use of row fertilizer and its benefits vary with the conditions. The efficiency of applied fertilizer is greatly increased by putting it beside the row and is very helpful on soils with a low soil test. For soils testing medium or high, a sufficient amount of nutrients exist in the soil so that additional fertilizer applied in the row will not increase yields. Regardless of soil test, row fertilizer will usually increase the vigor and early growth of a crop. Most of the time this does not result in higher yields unless there are conditions that reduce nutrient uptake. These conditions could include something that results in plant stress and reduced root growth, such as cool temperatures, wetness, or compaction. Row fertilizer has proven to be beneficial in the cooler areas of the northern corn belt and the easily compactable soils in the coastal plains of the South.

Since conditions with no-tillage are cooler and wetter and the upper few inches of soil may be denser than conventional tillage, some benefits of row fertilizer with the use of no-tillage is a possibility.

Over the years a number of trials and observations have been made with row fertilizer in no-tillage in Kentucky. These trials were planted at optimum times and none were extremely early. To this point we have not found a benefit for the use of row fertilizer that we would not expect with conventional tillage (more efficient use of fertilizer with a low soil test). However, Indiana just recently completed a 4-year study of row fertilizer with corn under different tillage systems. They found an average of 5 bu/ac advantage to row fertilizer in no-tillage on a soil with a high soil test. They found no advantage to the use of row fertilizer under conventional tillage.

Based on the evidence to this point, we would say that the benefits for the use of row fertilizer in Kentucky with no-tillage is questionable. We know that optimum or later planting dates (warm soils) do not respond to the row application of fertilizer. However, we also know that plants under stress, such as cool temperatures, do respond to row fertilizer. Therefore, early planting into no-tillage may result in a favorable response to row fertilizer. However, based on the Indiana data, we would expect the responses to be relatively small (no more than 5 bu/ac on average). A response to row fertilizer would be more likely during the cool, wet years. The responses would probably be little or none during warmer years or later planting dates (after May 10).



William O. Thom
Extension Specialist, Soils

COOPERATIVE EXTENSION SERVICE
U.S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF KENTUCKY
COLLEGE OF AGRICULTURE
LEXINGTON, KENTUCKY 40546

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

AN EQUAL OPPORTUNITY EMPLOYER

BULK RATE
POSTAGE & FEES PAID
USDA
PERMIT No. G268