

## THE NO-TILL SITUATION IN TENNESSEE

ELMER L. ASHBURN

In Tennessee, our major no-till production involves soybeans planted into freshly-combined wheat stubble. Some 300,000 acres were planted in this system in 1982 as compared to about 70,000 acres in 1977. Most producers use paraquat to burn down green vegetation and a combination of a broadleaf and a grass herbicide to provide preemergence weed control.

A small percentage of our no-till soybeans are planted into the previous year's corn or soybean stubble. Also, some producers are utilizing a rye or wheat cover crop and no-tilling into the killed small grain cover.

Most no-till planters in our state utilize a cutting or straight coulter, a 1 inch or 2 inch fluted coulter and double disk openers to open and prepare a slit for the seed. Enough phosphorus and potassium for wheat and soybeans is normally applied broadcast to the wheat in the fall. Topical spring applications of N are made to the wheat. However, some producers still apply 130 pounds of 9-23-30 in the row during soybean planting.

Tennessee producers plant about 75,000 acres of corn no-till and this acreage has not changed significantly since 1977. Corn is no-till planted into soybean stubble, killed small grain cover crops, killed perennial sod, or small grain stubble where silage or haylage has been produced.

Most corn producers utilize paraquat in liquid nitrogen to burn down existing vegetation. A combination of atrazine and a preemergence grass herbicide are normally included in the spray mix.

Some fertilizer is usually applied in the row as a pop-up application with the majority of the P and K being broadcast. However, on low testing soils producers apply most of the P and K in the row rather than broadcast. Very few producers apply any fertilizer after planting.

Tennessee farmers planted about 60,000 acres of no-till wheat in 1982. This compares with some 10,000 acres in 1977. No-till wheat is drilled into soybean stubble or aerially applied to soybean fields as leaf drop begins on mature soybeans.

New practices in no-till in our state include: (1) use of narrower (prilled or I-inch fluted) coulters to replace 2 inch coulters, (2) use of 2 in-line straight coulters to cut through heavy surface residues, (3) use of more small grain cover crops as mulch, (4) some increase in post-directed herbicides in no-till soybeans, (5) some shift to Roundup or Bronco as a burndown to improve control of horseweed, goldenrod, smartweed, and established fall panicum, and (6) use of narrower rows.

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Elmer L. Ashburn is Professor, Plant and Soil Science, Agricultural Extension Service, The University of Tennessee.

Research emphasis in no-till includes the following: (1) mulch species, (2) mulch or stubble management, (3) nitrogen levels for corn, (4) no-till cotton, (5) no-till grain sorghum, (6) disease control, (7) fertilizer placement, and (8) systems of weed control.

In summary, Tennessee farmers have embraced no-till as a useful and economical means of crop production. Their innovations and ever-changing methods of crop production should insure a sizable increase in no-till acreage in the future.