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# No Tillage Use for Crop Production in Kentucky Counties in 1996

Gerald R. Haszler  
*University of Kentucky*

Grant W. Thomas  
*University of Kentucky*

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# Soil Science News & Views

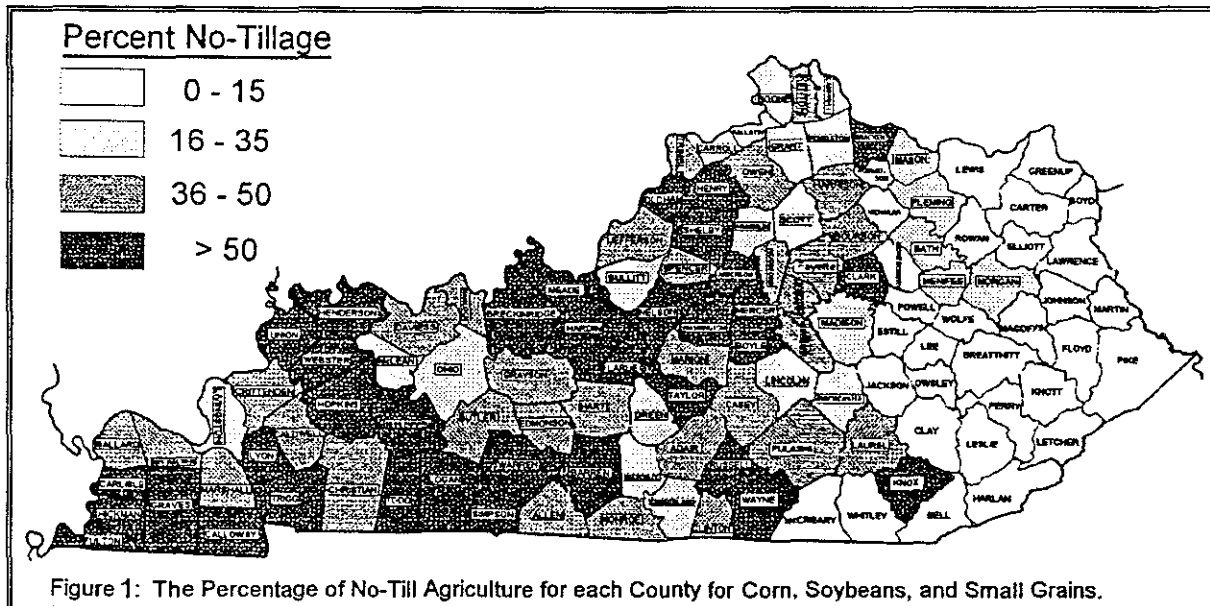
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## No Tillage Use for Crop Production in Kentucky Counties in 1996

G.R. Haszler and G.W. Thomas

Two years ago, we reported the status of no-tillage adoption in Kentucky counties in the year 1994. Now, CTIC<sup>†</sup> has published the results for

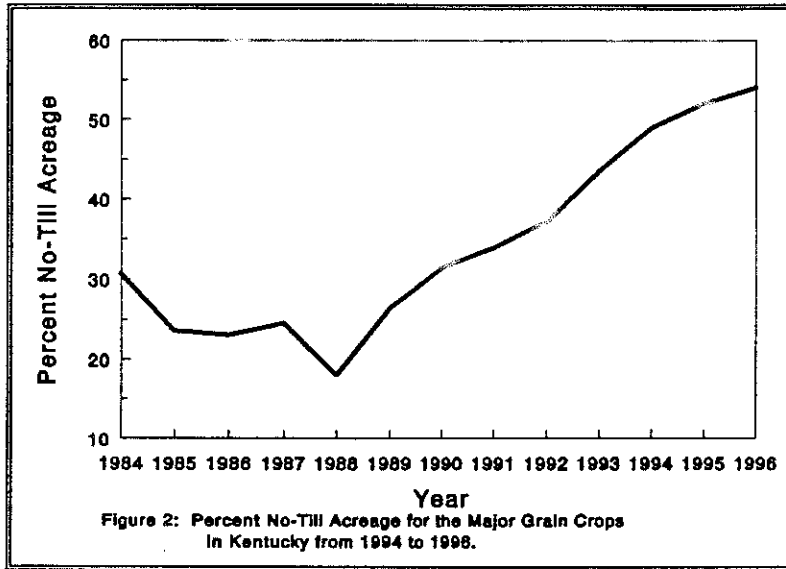
reached 51 %. The results for both 1994 and 1996 are shown in Table 1. It is evident that Kentucky has both maintained first place and has also



1996. As before, Kentucky leads the nation in percent of crops produced under no tillage, but the percentage has increased significantly. In 1994, 44% of crops were produced under no tillage in Kentucky, whereas in 1996, that figure had

increased its lead over the other states. The percentage of crops grown under no tillage in each county is shown in Figure 1. Results by crop and average values for each county and for the state are shown in Table 2.

Figure 2 shows the long-term trends for Kentucky on a state-wide basis.



increases in Simpson, Todd, Trigg, and Warren counties.

The leading 10 counties in Kentucky, in terms of no-tillage adoption, are listed in Table 3. As can be seen, these counties average well above 70% under no tillage production, which is a very impressive figure.

† 1996 National Crop Residue Management Survey. Conservation Tillage Information Center, West Lafayette, IN.

*Grant W. Thomas*  
 Extension Soils Specialist

Among crops, double-cropped soybeans have stayed almost the same, 93% in 1994 vs 94% in 1996. This is probably the maximum achievable level. In the case of full-season soybeans, the 1996 percentage under no-till was 49% vs 43% in 1994. With corn, the increase was from 49% in 1994 to 55% in 1996. Small grains, which are mostly planted under minimum tillage, have also increased significantly, from 22% no-till in 1994 to 27% in 1996.

In all three of the major grain-producing regions in Kentucky, there was a significant increase in the use of no tillage in 1996. For example, in the Purchase, the percentage under no-tillage increased from 52 to 64%, with notable increases in Fulton, Hickman, Carlisle, Marshall, and McCracken counties. In the Western Coalfield, which contains many soils which are not ideal for no tillage, the percentage under no tillage increased from 40 to 48%, with Hopkins, Ohio, and Webster counties showing the largest increases. Finally, in the Pennyrile region, where no-tillage had its start in Kentucky, the percentage increased from 57 to 63%, with impressive

Table 1: Leading States in Percent of Cropland Acres Planted to No-Till in 1996 and 1994.

| State         | % No Tillage |      |
|---------------|--------------|------|
|               | 1996         | 1994 |
| Kentucky      | 51           | 44   |
| Maryland      | 46           | 41   |
| Tennessee     | 44           | 42   |
| West Virginia | 39           | 37   |
| Delaware      | 38           | 37   |
| Ohio          | 37           | 35   |

**Table 2: No-Till Planting of Corn, Soybeans, and Small Grains in Kentucky - 1996.**

|              | Acreage of corn, soybeans, and<br>small grains |        |    | % No-Till Planted |             |             |                 |
|--------------|--|--------|----|-------------------|-------------|-------------|-----------------|
|              | Total  | NT     | %  | Corn              | Soybeans    |             | Small<br>Grains |
|              | Acres  | Acres  | NT | Full Season       | Full Season | Double Crop |                 |
| Adair        | 11,600   | 5,800  | 50 | 61                | 50          | 50          | 34              |
| Allen        | 4,880  | 2,000  | 41 | 27                | 45          | 70          | 60              |
| Anderson     | 2,850  | 2,050  | 72 | 73                | 67          | 0           | 0               |
| Ballard      | 76,500   | 31,000 | 41 | 41                | 39          | 90          | 13              |
| Barren       | 56,000   | 34,600 | 62 | 72                | 50          | 90          | 42              |
| Bath         | 15,000   | 4,800  | 32 | 32                | 32          | 100         | 0               |
| Bell         | 810  | 50     | 6  | 17                | 0           | 0           | 0               |
| Boone        | 3,097  | 615    | 20 | 17                | 22          | 50          | 18              |
| Bourbon      | 28,650   | 13,350 | 47 | 49                | 83          | 100         | 18              |
| Boyd         | 508  | 0      | 0  | 0                 | 0           | 0           | 0               |
| Boyle        | 17,850   | 9,990  | 56 | 63                | 63          | 100         | 45              |
| Bracken      | 1,525  | 1,050  | 69 | 70                | 0           | 0           | 0               |
| Breathitt    | 514  | 0      | 0  | 0                 | 0           | 0           | 0               |
| Breckinridge | 65,500   | 43,300 | 66 | 65                | 50          | 92          | 55              |
| Bullitt      | 12,000   | 4,000  | 33 | 38                | 25          | 75          | 0               |
| Butler       | 49,000   | 19,700 | 40 | 40                | 42          | 70          | 0               |
| Caldwell     | 38,300   | 18,000 | 47 | 39                | 28          | 93          | 43              |
| Calloway     | 115,050  | 63,340 | 55 | 55                | 40          | 98          | 20              |
| Campbell     | 687  | 225    | 33 | 23                | 48          | 100         | 0               |
| Carlisle     | 61,750   | 41,500 | 67 | 67                | 60          | 97          | 59              |
| Carroll      | 3,150  | 1,100  | 35 | 36                | 38          | 0           | 0               |
| Carter       | 1,675  | 50     | 3  | 3                 | 0           | 0           | 0               |
| Casey        | 21,200   | 7,700  | 36 | 39                | 39          | 50          | 27              |
| Christian    | 169,000  | 80,000 | 47 | 49                | 25          | 94          | 2               |
| Clark        | 9,390  | 4,840  | 52 | 72                | 59          | 100         | 7               |
| Clay         | 2,000  | 0      | 0  | 0                 | 0           | 0           | 0               |
| Clinton      | 5,900  | 2,600  | 44 | 37                | 50          | 83          | 71              |
| Crittenden   | 26,000   | 11,250 | 43 | 46                | 36          | 100         | 38              |
| Cumberland   | 5,080  | 1,350  | 27 | 38                | 20          | 67          | 9               |
| Daviess      | 195,500  | 83,000 | 42 | 50                | 27          | 90          | 9               |
| Edmonson     | 8,700  | 4,200  | 48 | 43                | 51          | 100         | 40              |
| Elliott      | 725  | 85     | 12 | 12                | 0           | 0           | 0               |
| Estill       | 4,825  | 330    | 7  | 5                 | 13          | 0           | 0               |
| Fayette      | 10,400   | 4,200  | 40 | 58                | 29          | 0           | 0               |
| Fleming      | 9,480  | 1,507  | 16 | 18                | 20          | 20          | 0               |
| Floyd        | 560  | 0      | 0  | 0                 | 0           | 0           | 0               |
| Franklin     | 4,550  | 1,050  | 23 | 48                | 31          | 100         | 5               |
| Fulton       | 98,081   | 68,332 | 70 | 65                | 60          | 95          | 60              |

|            | Acreage of corn, soybeans, and<br>small grains |         |    | % No-Till Planted |             |             |        |
|------------|--|---------|----|-------------------|-------------|-------------|--------|
|            | Total  | NT      | %  | Corn              | Soybeans    |             | Small  |
|            | Acres  | Acres   | NT | Full Season       | Full Season | Double Crop | Grains |
| Gallatin   | 3,600  | 250     | 7  | 16                | 0           | 0           | 0      |
| Garrard    | 5,575  | 2,200   | 39 | 48                | 63          | 100         | 20     |
| Grant      | 753  | 226     | 30 | 41                | 14          | 100         | 16     |
| Graves     | 163,000  | 112,100 | 69 | 83                | 74          | 92          | 10     |
| Grayson    | 33,400   | 15,000  | 45 | 43                | 43          | 100         | 37     |
| Green      | 6,157  | 1,828   | 30 | 25                | 40          | 90          | 25     |
| Greenup    | 3,230  | 0       | 0  | 0                 | 0           | 0           | 0      |
| Hancock    | 22,227   | 9,856   | 44 | 50                | 34          | 100         | 22     |
| Hardin     | 76,500   | 50,000  | 65 | 66                | 60          | 96          | 50     |
| Harlan     | 550  | 0       | 0  | 0                 | 0           | 0           | 0      |
| Harrison   | 15,000   | 6,000   | 40 | 54                | 60          | 100         | 0      |
| Hart       | 7,370  | 3,450   | 47 | 50                | 0           | 100         | 54     |
| Henderson  | 166,000  | 87,000  | 52 | 52                | 47          | 94          | 33     |
| Henry      | 17,700   | 8,700   | 49 | 63                | 0           | 100         | 10     |
| Hickman    | 104,000  | 86,790  | 83 | 85                | 99          | 99          | 50     |
| Hopkins    | 66,500   | 42,500  | 64 | 60                | 70          | 100         | 8      |
| Jackson    | 2,400  | 260     | 11 | 11                | 0           | 0           | 0      |
| Jefferson  | 3,720  | 1,685   | 45 | 35                | 57          | 80          | 26     |
| Jessamine  | 2,137  | 785     | 37 | 32                | 40          | 100         | 19     |
| Johnson    | 760  | 0       | 0  | 0                 | 0           | 0           | 0      |
| Kenton     | 285  | 115     | 40 | 40                | 50          | 0           | 0      |
| Knott      | 625  | 0       | 0  | 0                 | 0           | 0           | 0      |
| Knox       | 4,450  | 2,050   | 46 | 43                | 50          | 67          | 67     |
| Larue      | 27,700   | 21,310  | 77 | 80                | 77          | 100         | 50     |
| Laurel     | 4,925  | 2,305   | 47 | 59                | 73          | 100         | 0      |
| Lawrence   | 1,215  | 65      | 5  | 5                 | 0           | 0           | 0      |
| Lee        | 850  | 45      | 5  | 6                 | 0           | 0           | 0      |
| Leslie     | 350  | 0       | 0  | 0                 | 0           | 0           | 0      |
| Letcher    | 100  | 0       | 0  | 0                 | 0           | 0           | 0      |
| Lewis      | 15,000   | 1,200   | 8  | 15                | 0           | 0           | 0      |
| Lincoln    | 8,000  | 2,500   | 31 | 38                | 25          | 50          | 0      |
| Livingston | 18,600   | 5,450   | 29 | 28                | 19          | 69          | 33     |
| Logan      | 149,000  | 94,500  | 63 | 80                | 30          | 98          | 15     |
| Lyon       | 10,200   | 7,300   | 72 | 65                | 80          | 91          | 67     |
| McCracken  | 38,100   | 18,800  | 49 | 52                | 44          | 100         | 0      |
| McCreary   | 423  | 0       | 0  | 0                 | 0           | 0           | 0      |
| McLean     | 93,000   | 30,000  | 32 | 38                | 26          | 95          | 2      |
| Madison    | 8,266  | 1,400   | 17 | 34                | 0           | 0           | 0      |
| Magoffin   | 2,000  | 0       | 0  | 0                 | 0           | 0           | 0      |
| Marion     | 31,990   | 15,795  | 49 | 47                | 54          | 50          | 46     |
| Marshall   | 31,200   | 14,200  | 46 | 59                | 23          | 100         | 13     |
| Martin     | 75   | 0       | 0  | 0                 | 0           | 0           | 0      |
| Mason      | 13,700   | 3,725   | 27 | 37                | 67          | 50          | 9      |
| Meade      | 25,130   | 16,996  | 68 | 70                | 40          | 100         | 50     |
| Menifee    | 1,175  | 375     | 32 | 20                | 100         | 0           | 0      |

|                    | Acreage of corn, soybeans, and<br>small grains |                  |           | % No-Till Planted |             |             |           |
|--------------------|--|------------------|-----------|-------------------|-------------|-------------|-----------|
|                    | Total  | NT               | %         | Corn              | Soybeans    |             | Small     |
|                    | Acres  | Acres            | NT        | Full Season       | Full Season | Double Crop | Grains    |
| Mercer             | 15,800   | 12,100           | 77        | 76                | 80          | 100         | 73        |
| Metcalfe           | 9,700  | 2,150            | 22        | 16                | 33          | 37          | 20        |
| Monroe             | 14,100   | 5,400            | 38        | 43                | 29          | 50          | 33        |
| Montgomery         | 8,050  | 1,235            | 15        | 25                | 15          | 0           | 0         |
| Morgan             | 1,600  | 520              | 33        | 33                | 0           | 0           | 0         |
| Muhlenberg         | 37,500   | 24,500           | 65        | 67                | 67          | 100         | 20        |
| Nelson             | 15,500   | 12,000           | 77        | 71                | 67          | 100         | 75        |
| Nicholas           | 2,650  | 350              | 13        | 23                | 0           | 0           | 0         |
| Ohio               | 70,800   | 22,200           | 31        | 34                | 23          | 100         | 45        |
| Oldham             | 9,450  | 6,425            | 68        | 60                | 71          | 82          | 72        |
| Owen               | 1,042  | 357              | 34        | 41                | 0           | 0           | 15        |
| Owsley             | 1,490  | 0                | 0         | 0                 | 0           | 0           | 0         |
| Pendleton          | 6,250  | 1,550            | 25        | 48                | 50          | 57          | 0         |
| Perry              | 75   | 0                | 0         | 0                 | 0           | 0           | 0         |
| Pike               | 210  | 0                | 0         | 0                 | 0           | 0           | 0         |
| Powell             | 1,839  | 0                | 0         | 0                 | 0           | 0           | 0         |
| Pulaski            | 21,800   | 10,280           | 47        | 38                | 67          | 85          | 41        |
| Robertson          | 1,675  | 50               | 3         | 17                | 0           | 0           | 0         |
| Rockcastle         | 4,291  | 1,045            | 24        | 18                | 60          | 66          | 42        |
| Rowan              | 2,130  | 200              | 9         | 13                | 0           | 0           | 0         |
| Russell            | 9,750  | 6,150            | 63        | 68                | 100         | 100         | 0         |
| Scott              | 4,300  | 1,289            | 30        | 30                | 30          | 0           | 30        |
| Shelby             | 39,900   | 24,600           | 62        | 66                | 49          | 86          | 55        |
| Simpson            | 76,000   | 45,100           | 59        | 55                | 75          | 98          | 20        |
| Spencer            | 10,220   | 4,100            | 40        | 40                | 30          | 84          | 40        |
| Taylor             | 22,700   | 12,800           | 56        | 60                | 56          | 67          | 30        |
| Todd               | 109,880  | 75,570           | 69        | 70                | 74          | 97          | 36        |
| Trigg              | 32,800   | 24,300           | 74        | 76                | 75          | 100         | 43        |
| Trimble            | 7,350  | 2,800            | 38        | 40                | 38          | 80          | 24        |
| Union              | 136,000  | 73,500           | 54        | 53                | 47          | 88          | 50        |
| Warren             | 73,000   | 49,500           | 68        | 63                | 75          | 94          | 46        |
| Washington         | 6,100  | 3,100            | 51        | 50                | 43          | 57          | 57        |
| Wayne              | 25,680   | 14,125           | 55        | 59                | 60          | 40          | 10        |
| Webster            | 102,300  | 59,400           | 58        | 60                | 59          | 95          | 6         |
| Whitley            | 3,300  | 450              | 14        | 20                | 0           | 0           | 0         |
| Wolfe              | 2,034  | 90               | 4         | 8                 | 0           | 0           | 0         |
| Woodford           | 4,980  | 1,800            | 36        | 38                | 17          | 100         | 15        |
| <b>State Total</b> | <b>3,217,471</b>                               | <b>1,732,761</b> | <b>54</b> | <b>55</b>         | <b>49</b>   | <b>94</b>   | <b>27</b> |

**Table 3: Ten Leading Counties in Percentage of Crop Produced Under No Tillage in 1996.**

| <b>County</b> | <b>% No Till</b> |
|---------------|------------------|
| Hickman       | 83               |
| Larue         | 77               |
| Mercer        | 77               |
| Nelson        | 77               |
| Trigg         | 74               |
| Anderson      | 72               |
| Lyon          | 72               |
| Fulton        | 70               |
| Graves        | 69               |
| Todd          | 69               |

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